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## Draft Final 2021 Unreclaimed Sites Sampling UR-01 Site Evaluation Summary Report

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May 24, 2022

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#### RE: BPSOU Unreclaimed Sites – Minnie Irvine (UR-01) Site Evaluation Summary Report

Agency Representatives:

I am writing to you on behalf of Atlantic Richfield Company to submit the Unreclaimed Site Minnie Irvine (UR-01) Evaluation Summary Report which summarizes sampling and site evaluation activities. The evaluation summary includes the data summary report (DSR) as Appendix A and the data validation report as an attachment (Attachment A) to the DSR. The report and appendices may be downloaded at the following link:

https://pioneertechnicalservices.sharepoint.com/:f:/s/submitted/EtWZuE9o6R1EhBgqS7MNvnoB2p Kr65giJoVzs5UBioBBAQ.

If you have any questions or comments, please call me at (907) 355-3914.

Sincerely,

Mike Mcanulty

Mike Mc Anulty Liability Manager & Global Risk Champion **Remediation Management Services Company** An affiliate of Atlantic Richfield Company



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## SILVER BOW CREEK/BUTTE AREA NPL SITE BUTTE PRIORITY SOILS OPERABLE UNIT

Draft Final

2021 Unreclaimed Sites Sampling UR-01 Site Evaluation Summary Report

Atlantic Richfield Company

2022

## SILVER BOW CREEK/BUTTE AREA NPL SITE BUTTE PRIORITY SOILS OPERABLE UNIT

## Draft Final

# 2021 Unreclaimed Sites Sampling UR-01 Site Evaluation Summary Report

Prepared for:

#### Atlantic Richfield Company 317 Anaconda Road

Butte, Montana 59701

Prepared by:

*Pioneer Technical Services, Inc.* 1101 South Montana Street Butte, Montana 59701

2022

#### **TABLE OF CONTENTS**

LIST	OF FI	GURESI	ſ
LIST	OF TA	ABLES II	ſ
LIST	OF AI	PPENDICES II	ſ
ABBH	REVIA	TIONS AND ACRONYMSIII	ľ
1.0	<b>INTF</b> 1.1	<b>RODUCTION</b> 1 Objectives	
2.0	SITE	DESCRIPTION AND BACKGROUND	2
3.0	SITE	EVALUATION	3
	3.1	Data Summary	3
	3.2	Human Health Action Levels	
	3.3	Screening Criteria for Storm Water	3
	3.4	Sedimentation Analysis	1
4.0	DEC	LARATION CONCLUSION	5
5.0	REF	ERENCES	5

#### LIST OF FIGURES

Figure 1. Unreclaimed Sites UR-01 2021 Samples and Exceedances Figure 2. Unreclaimed Sites UR-01 Storm Water Features

#### LIST OF TABLES

Table 1. BPSOU Soil Screening Criteria Table 2. Historic Data Summary Table 3. New Data Summary Table 4. Exceedances

#### LIST OF APPENDICES

Appendix A Data Summary Report (includes Data Validation Report) Appendix B Site Photographs

### ABBREVIATIONS AND ACRONYMS

Acronym	Definition	Acronym	Definition
BPSOU	Butte Priority Soils Operable Unit	QAPP	Quality Assurance Project Plan
СВ	Catch Basin	QC	Quality Control
CD	Consent Decree	SBC	Silver Bow Creek
DSR	Data Summary Report	SD	Settling Defendants
FRESOW	Further Remedial Elements Scope of Work	UR	Unreclaimed
mg/kg	milligram per kilogram	XRF	X-ray Fluorescence
QA	Quality Assurance		

#### 1.0 INTRODUCTION

This Butte Priority Soils Operable Unit (BPSOU) Unreclaimed (UR) Site Evaluation Summary presents the declarations of the subsurface soil sampling conducted from November 2, 2021, through November 03, 2021, at the UR source area UR-01 within the BPSOU (referred to herein as UR-01 Site or Site).

Unreclaimed solid media sites located within the BPSOU may have potentially been impacted by historical mining. These sites must be evaluated to determine if remedial action is required. Site evaluations are completed to determine if a specific site poses a threat to human health, contributes metals-impacted sediments to existing or planned wet weather control features, or contributes to the degradation of surface water quality as described in the BPSOU Consent Decree (CD), Appendix D, Attachment C Further Remedial Elements Scope of Work (FRESOW) (EPA, 2020).

Source areas within the BPSOU may include upland soil waste, mine waste, and floodplain soil and waste. These source areas have the potential to act as indirect pathways for human exposure, contribute metal inputs to the alluvial and bedrock aquifers, and act as metals sources to surface water (to Blacktail Creek and Silver Bow Creek [SBC]) via storm water runoff.

Means and methods used to characterize UR Sites and make remediation recommendations are described in the 2021 UR Sites Quality Assurance Project Plan (QAPP) (Atlantic Richfield Company, 2021) (referred to herein as the QAPP). Results from site sampling/inspection activities will be used to make site declarations and drive remedial action requirements to be completed by the Settling Defendants (SDs). Contaminated solid media identified within the BPSOU will be addressed through a combination of source removal, capping, and/or land reclamation as appropriate to meet the Butte Hill Revegetation Specifications (EPA, 2020). The specific Remedial Action Work Plans will be prepared by the SDs and approved by Agencies prior to implementation.

#### 1.1 Objectives

This Site Evaluation Summary Report presents all Site data and declarations, as required in the FRESOW (EPA, 2020), from the UR-01 Site investigation. Results from the 2021 investigation are summarized in the Data Summary Report (DSR) in Appendix A, which includes a Data Validation Report. The conclusions and declarations provided in this report were based on the objectives and procedures executed and outlined in the DSR. General Site and sample station photographs are included in Appendix B.

This Evaluation Summary Report includes information within each related report as described below:

#### **Site Evaluation Summary:**

- A summary of all Site data (historical and new).
- A declaration as to whether the Site contains concentrations at or above human health action levels or the Waste Identification Criteria in Table 1 in Appendix 1 of the BPSOU CD (EPA, 2020).
- A declaration as to whether historical mine waste at the Site is contributing to the degradation of surface water quality.
- A declaration as to whether the Site contributes metals-impacted sediment to existing or planned wet weather control features.

#### DSR (Appendix A):

- Investigation objectives.
- Data quality assessment.
- Project objectives and sampling design review.
- Preliminary data review.
- Conclusions on the quality of the data.
- Sampling and analysis summary.

#### Data Validation Report (Attachment A of the DSR):

- Quality assurance (QA) and quality control (QC) review of inorganic data.
- Level A/B Assessment.
- Assessment of precision, accuracy, representativeness, comparability, completeness, and sensitivity between X-ray fluorescence (XRF) and laboratory data.
- Overall data summary.

The following sections provide details about the items bulleted above.

The land use at the UR-01 Site is residential per professional judgment by the field team lead, informed by current county zoning and guidance listed in the 2006 Record of Decision requirements (Appendix A of the BPSOU CD; EPA, 2020). Human health action levels and storm water criteria for residential space were referenced to prepare this declaration. The action levels are listed in Table 1.

#### 2.0 SITE DESCRIPTION AND BACKGROUND

Site UR-01 is approximately 5.44 acres and is located north of Walkerville, Montana, and just north of the Alice Pit. The Site is bounded on the south by North Alice Street and on the north by Ryan Road (Figure 1). Ownership of the Site includes Atlantic Richfield Company and a private third party. Site UR-01 is vacant land with well-established vegetation and several bare areas, including windrows of dumped material. The dumped material is covered with established weeds and grasses. An erosion rill, starting from the middle of the Site running northwest into the drainage ditch, appears to have iron staining present. There are residences within 200 feet of UR-01 in several directions. Site UR-01 is in the Beef Straight Gulch drainage basin.

#### 3.0 SITE EVALUATION

The Site was evaluated following the Unreclaimed Area Logic Diagram (Appendix A.3 of the QAPP) to determine if reclamation is warranted. The 2021 Site investigation was completed on November 03, 2021. Sampling activities were performed according to specified standard operating procedures (SOPs) as outlined in the QAPP. The DSR in Appendix A includes a description of the 2021 investigation. Composite samples were collected from each location at the specified depth intervals of 0 to 2 inches, 2 to 6 inches, and 6 to 12 inches. One historical data set was available from 1987 (CDM, 1988). Photographs of the sampling events are in Appendix B.

#### 3.1 Data Summary

A total of 81 natural soil samples were collected and analyzed by XRF for arsenic, cadmium, copper, lead, zinc, and mercury. Out of the 81 collected soil samples, 52 were submitted to Pace Analytic Services, LLC for laboratory confirmation (per Section 3.2.4, Table 5 of the QAPP) and 3 samples were submitted for laboratory QA and QC. The DSR in Appendix A details the total XRF samples collected, confirmation laboratory samples submitted, and the QA and QC laboratory samples submitted. One historical sample location was collected in 1987 (CDM, 1988) for XRF analysis of arsenic, cadmium, copper, lead, and zinc. Based on the data quality conclusions in the DSR, the data analyzed in 2021 were deemed usable.

For samples analyzed by both XRF and laboratory, the laboratory results were used for the evaluation of the Site. For samples analyzed only by XRF, the XRF results were used for the evaluation of the Site.

#### 3.2 Human Health Action Levels

Table 2 lists the historical data, Table 3 lists the new data, and Table 4 describes the exceedances related to the following findings of the 2021 investigation:

• Two lead results from sample station UR-01-SS-23 exceeded the human health action level (1,200 milligrams per kilogram [mg/kg]) reporting values of 1,340 mg/kg and 2,850 mg/kg.

#### 3.3 Screening Criteria for Storm Water

Table 2 lists the historical data, Table 3 lists the new data, and Table 4 describes the exceedances related to the following findings of the 2021 investigation:

• Sample BPSOU-UR01SS23-110221-2 exceeded the cadmium, lead, and zinc screening criteria for storm water. The zinc result for this sample also exceeded the 5,000 mg/kg storm water threshold for any 1 contaminant.

One sample collected in 2021 exceeded 3 of the 6 contaminant screening level criteria listed in Table 1. The same sample exceeded 5,000 mg/kg for zinc; therefore, it is recommended the Site be further analyzed to determine the materiality of the load and the possible contribution to the degradation of surface water per the requirements of the QAPP (Section 2.4, Step 5, page 8).

#### 3.4 Sedimentation Analysis

Contribution to degradation of surface water quality or metals-impacted sediment is determined by evaluating the presence of rills, concentrated outflow, and metals-impacted sediment in downstream infrastructure; determining sediment contribution upgradient of the Site; and identifying pathways to surface water features (Figure 2).

#### **Presence of Rills:**

Rills have been documented at the UR-01 Site. Established grasses and weeds exist throughout the entire Site. Slopes on the Site are eroding along barren areas and open dump piles. Also, potential for rilling was observed at the west end of the Site as the Site's general topography slopes from east to west. Storm water and erosion on the southern boundary of the Site has affected Alice Street (directly south of the Site) in that storm water and sediment from the Site travel on and along the street.

#### **Concentrated Outflow:**

There is no existing Superfund storm water infrastructure within the UR-01 Site. However, a drainage ditch exists along the southern border of the Site paralleling Alice Street. Storm water and sediment on the southeastern third of the Site is collected by this ditch and appears to flow west to a natural depression just north of the western end of the Site. Sediment deposits along Alice Street indicate active sediment transportation from the south slope of the Site.

#### **Evaluate Metals-Impacted Sediment in Downstream Infrastructure:**

One of 27 locations sampled exceeded human health and storm water criteria. Sediment from this localized area appears to flow west along Alice Street and then north to the natural depression northwest of the Site.

#### **Evaluate Contributing Sediment Loading Above the Site:**

There does not appear to be any sediment loading contributed by sites upslope of the UR-01 Site. North of the Site (just south of Ryan Road), sediment and storm water are collected by the natural depression, where settling occurs.

#### **Direct Linkage to Surface Water Features:**

A potentially complete pathway to surface water exists from Alice Street to Beef Straight Gulch, then Oro Fino Gulch to Browns Gulch, eventually leading to SBC just west of Ramsay, Montana. However, visual observations suggest that most sediment and storm water leaving UR-01 are funneled to the naturally occurring depression just northwest of the Site where infiltration occurs and sediment is contained. If a large enough storm or snow melt event caused overtop of the natural basin, with the length of travel in a well-vegetated drainage leading to SBC, it is implausible that sediment from UR-01 would contribute metals loading to SBC.

#### 4.0 DECLARATION CONCLUSION

One of 27 locations sampled during the 2021 investigation exceeded human health and storm water criteria, along the southeast edge of the UR-01 boundary. From this single location (SS-23), both subsurface samples (2- to 6-inch and 6- to 12-inch intervals), exceeded the human health action level for lead and 1 subsurface sample, collected from the 2-to 6-inch interval, exceeded 3 of the 6 contaminant screening level criteria listed in Table 1, and zinc exceeded the 5,000 mg/kg waste criteria. The surface sample (0-to 2-inch interval) collected at SS-23 did not exceed human health or storm water criteria. The sedimentation analysis (Section 3.4) indicates the following:

- Documentation of rills and minor soil loss from the Site along Alice Street.
- Evidence of localized metals-impacted sediment within the UR Site boundary.
- A natural depression west of the Site captures storm water runoff and retains sediment.

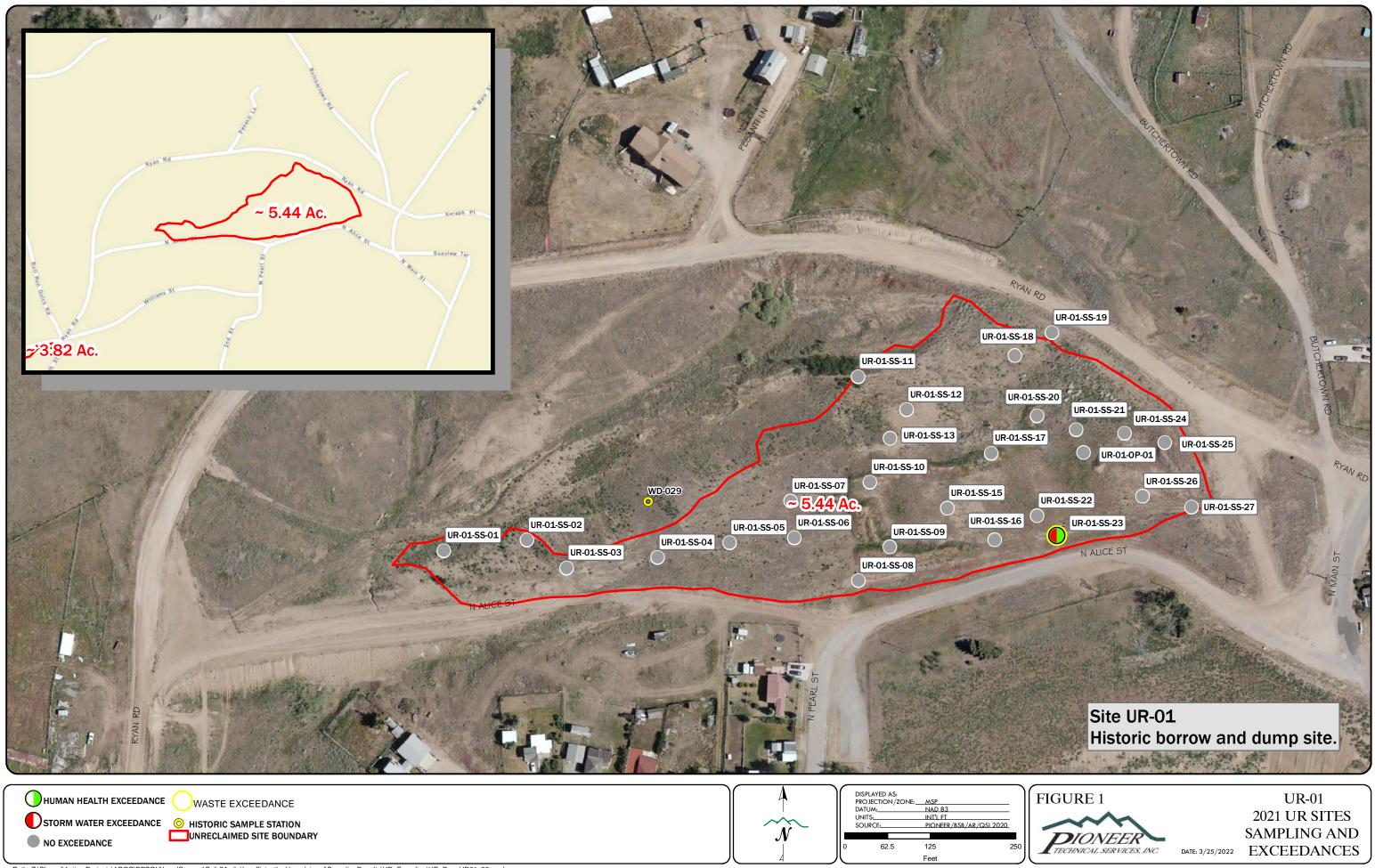
The Site exhibits a potentially complete pathway to SBC through Browns Gulch. However, with most sediment naturally contained and the length of travel in a well-vegetated drainage leading to SBC, it is implausible that sediment from UR-01 would contribute metals loading to SBC. Based on the criteria identified in the QAPP and established qualifying data, further actions may be warranted to address the effect of localized metals-impacted sediment and human health exceedances along the southeastern portion of the Site. Most of the 5.44-acre Site does not appear to contribute to degradation of human health or the environment as sample results were less than action levels.

#### 5.0 **REFERENCES**

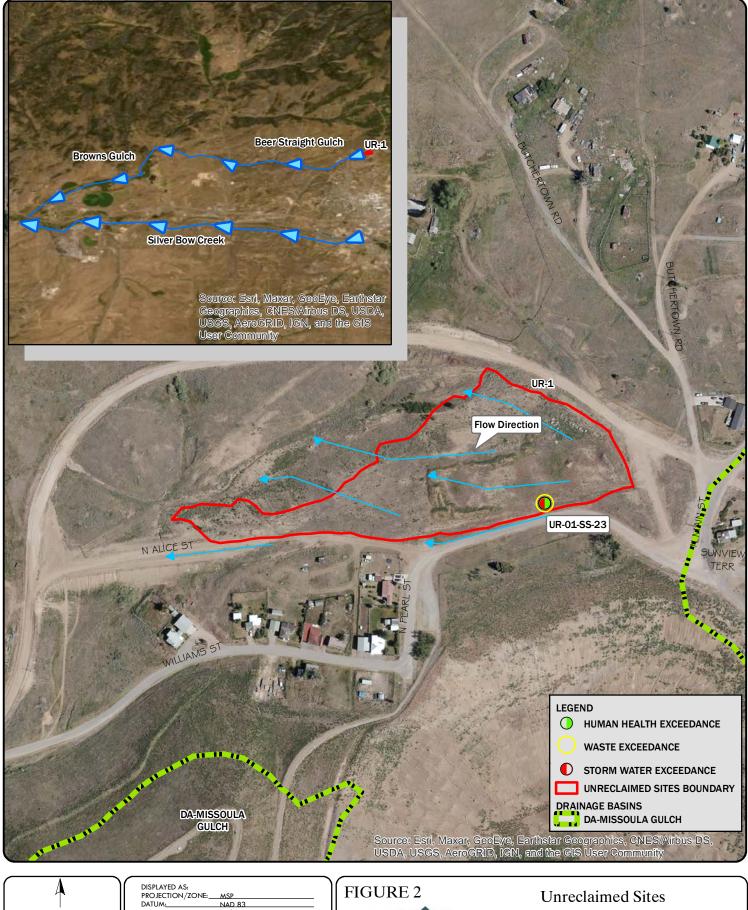
- Atlantic Richfield Company, 2021. Unreclaimed Sites Quality Assurance Project Plan. Atlantic Richfield Company, June 2021.
- CDM, 1988. Butte Soils Screening Study Final Report. April 1988
- EPA, 2020. Consent Decree for the Butte Priority Soils Operable Unit. Partial Remedial Design/Remedial Action and Operation and Maintenance. U.S. Environmental Protection Agency. February 13, 2020. Available at <u>https://www.co.silverbow.mt.us/2161/ButtePriority-Soils-Operable-Unit-Conse</u>. Appendix A of the Consent Decree contains the 2006 Record of Decision.

### **Figures**

Figure 1. Unreclaimed Sites UR-01 2021 Samples and Exceedances Figure 2. Unreclaimed Sites UR-01 Storm Water Features



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### Tables

Table 1. BPSOU Soil Screening CriteriaTable 2. Historical Data SummaryTable 3. New Data SummaryTable 4. Exceedances

Analyte	Solid Media	Action/Screening Levels
Lead <sub>1</sub>	Residential	1,200 mg/kg
Arsenic <sub>1</sub>	Residential	250 mg/kg
Mercury <sub>1</sub>	Residential	147 mg/kg
Cadmium <sup>2</sup>		20 mg/kg
Copper <sup>2</sup>		1,000 mg/kg
Zinc <sup>2</sup>		1,000 mg/kg
Lead <sup>2</sup>		1,000 mg/kg
Arsenic <sup>2</sup>		200 mg/kg
Mercury <sup>2</sup>	10 mg/kg	

1. From EPA Record of Decision (ROD) BPSOU, Table 12-1 (EPA, 2006a).

2. Waste Identification Criteria in Table 1 in Appendix 1 of the BPSOU Consent Decree (EPA, 2020). mg/kg: milligrams per kilogram

### Table 2: Historic Data Summary

COC	Sample WD-029			
Arsenic	25 J			
Cadmium	5.00			
Copper	103.00			
Lead	33.00			
Zinc	152.00			
Storm Water Scree	Storm Water Screening Criteria Exceedance			
Human Health Act	Human Health Action Level Exceedance			

	Table 3: New Data Summary												
Station	FieldSampleID	Result Type	Arsenic (mg/kg)	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Zinc (mg/kg)	1+>HH std	3+>SW std	1+>5000	Exceed SW	Exceed
UR-01-OP-01	BPSOU-UR01OP01-110221-1	XRF	10.69	6.95 U	46.72	12.97	5.87 UJ	74.51					
UR-01-OP-01	BPSOU-UR01OP01-110221-2	XRF	14.27	6.99 U	26.06	11.88	6.18 UJ	73.98					
UR-01-OP-01	BPSOU-UR01OP01-110221-3	XRF	12.69	7.07 U	43.00	19.53	6.12 UJ	77.10					
UR-01-SS-01	BPSOU-UR01SS01-110321-1	XRF	7.40 U	7.40 U	70.86	48.95	6.38 UJ	130.86					
UR-01-SS-01	BPSOU-UR01SS01-110321-2	Lab	4.70	0.19	40.10	22.70	0.008 U	70.30					
UR-01-SS-01	BPSOU-UR01SS01-110321-3	Lab	3.40	0.16	42.10	24.70	0.010 A	75.50					
UR-01-SS-02	BPSOU-UR01SS02-110321-1	XRF	8.09	7.44 U	79.07	14.14	6.47 UJ	102.78					
UR-01-SS-02	BPSOU-UR01SS02-110321-2	Lab	2.40	0.11 A	41.50	6.10 J	0.010 A	46.10					
UR-01-SS-02	BPSOU-UR01SS02-110321-3	XRF	5.50 U	7.62 U	67.44 68.60	17.77	6.45 UJ	123.52					
UR-01-SS-03 UR-01-SS-03	BPSOU-UR01SS03-110321-1 BPSOU-UR01SS03-110321-2	Lab Lab	3.70 9.20	0.23	63.10	13.80	0.010 UJ 0.009 UJ	71.70 J- 92.00					
UR-01-SS-03 UR-01-SS-03	BPSOU-UR01SS03-110321-2 BPSOU-UR01SS03-110321-3	Lab	2.30	0.24	39.50	8.30	0.009 UJ	65.70					+
UR-01-SS-03 UR-01-SS-04	BPSOU-UR01SS03-110321-3 BPSOU-UR01SS04-110321-1	Lab	2.30	0.18	49.70	16.90	0.009 UJ	73.60					
UR-01-SS-04	BPSOU-UR01SS04-110321-2	Lab	3.00	0.13 A	61.40	13.50	0.009 UJ	59.00					
UR-01-SS-04	BPSOU-UR01SS04-110321-3	Lab	1.70	0.065 A	35.90	3.90	0.008 UJ	42.80					
UR-01-SS-05	BPSOU-UR01SS05-110321-1	Lab	5.20	0.56	41.80	56.20	0.24 J-	158.00					
UR-01-SS-05	BPSOU-UR01SS05-110321-2	Lab	4.30	0.40	42.10	58.70	0.24 J 0.35 J-	152.00		1			<u>†</u>
UR-01-SS-05	BPSOU-UR01SS05-110321-3	Lab	4.40	0.52	37.80	40.60	0.84 J-	141.00					1
UR-01-SS-06	BPSOU-UR01SS06-110321-1	Lab	3.20	0.14 A	40.00	22.40	0.016 J-	53.50					
UR-01-SS-06	BPSOU-UR01SS06-110321-2	Lab	3.40	0.18	38.20	9.10	0.022 J-	49.90					
UR-01-SS-06	BPSOU-UR01SS06-110321-3	XRF	5.84	7.74 U	66.72	21.19	6.45 UJ	112.25					
UR-01-SS-07	BPSOU-UR01SS07-110321-1	Lab	2.00	0.17	31.20	9.20	0.013 J-	55.50					
UR-01-SS-07	BPSOU-UR01SS07-110321-2	Lab	1.50	0.18	29.50	5.80	0.008 UJ	46.60					
UR-01-SS-07	BPSOU-UR01SS07-110321-3	Lab	2.30	0.09	25.90	4.30	0.008 UJ	38.60					
UR-01-SS-08	BPSOU-UR01SS08-110221-1	Lab	3.50	0.12 A	41.70	18.90	0.02	58.90					
UR-01-SS-08	BPSOU-UR01SS08-110221-2	Lab	4.20	0.14 A	32.60	11.70	0.03	51.60					
UR-01-SS-08	BPSOU-UR01SS08-110221-3	Lab	4.10	0.40	40.10	12.10	0.012 A	73.90					
UR-01-SS-09	BPSOU-UR01SS09-110221-1	XRF	24.89	6.42 U	52.70	21.03	5.87 UJ	100.42					
UR-01-SS-09	BPSOU-UR01SS09-110221-2	XRF	29.83	6.78 U	48.40	18.79	6.01 UJ	98.24					
UR-01-SS-09	BPSOU-UR01SS09-110221-3	XRF	29.36	6.69 U	55.84	18.03	5.91 UJ	102.58					
UR-01-SS-10	BPSOU-UR01SS10-110221-1	XRF	14.41	7.13 U	86.66	25.39	6.34 UJ	129.66					
UR-01-SS-10	BPSOU-UR01SS10-110221-2	Lab	4.90	0.33	47.40	15.00	0.23	78.50					
UR-01-SS-10	BPSOU-UR01SS10-110221-3	Lab XRF	4.30	0.43	64.80	17.70	0.55	110.00					
UR-01-SS-11	BPSOU-UR01SS11-110221-1		8.99 4.70	7.85	60.55 44.60	25.68 26.70	6.46 UJ 0.02	156.74 83.10					
UR-01-SS-11 UR-01-SS-11	BPSOU-UR01SS11-110221-2 BPSOU-UR01SS11-110221-3	Lab Lab	7.30	0.28	61.80	88.70	0.02	167.00					
UR-01-SS-11 UR-01-SS-12	BPSOU-UR01SS11-110221-3 BPSOU-UR01SS12-110221-1	Lab XRF	10.39	0.38 7.65 U	63.55	58.44	6.44 UJ	157.57					
UR-01-SS-12	BPSOU-UR01SS12-110221-2	Lab	18.00	0.30	35.00	20.60	0.014 A	144.00					
UR-01-SS-12	BPSOU-UR01SS12-110221-3	XRF	6.06	8.09	74.75	18.19	6.25 UJ	193.16					
UR-01-SS-13	BPSOU-UR01SS13-110221-1	Lab	9.40	0.30	59.20	25.50	0.032 J-	113.00					
UR-01-SS-13	BPSOU-UR01SS13-110221-2	Lab	4.90	0.14 A	48.80	12.10	0.010 A	78.30					-
UR-01-SS-13	BPSOU-UR01SS13-110221-3	Lab	2.70	0.24	45.90	7.80	0.012 A	79.30					
UR-01-SS-15	BPSOU-UR01SS15-110221-1	Lab	8.10	0.53	73.20	75.50	0.61	168.00					t
UR-01-SS-15	BPSOU-UR01SS15-110221-2	Lab	12.20	1.70	71.40	200.00	0.23	315.00					1
UR-01-SS-15	BPSOU-UR01SS15-110221-3	Lab	8.10	0.90	82.00	195.00	0.15	243.00					
UR-01-SS-16	BPSOU-UR01SS16-110221-1	XRF	30.77	6.79 U	52.56	25.88	5.90 UJ	107.03					
UR-01-SS-16	BPSOU-UR01SS16-110221-2	Lab	11.80	0.55	46.70	43.50	0.11	134.00					
UR-01-SS-16	BPSOU-UR01SS16-110221-3	Lab	6.00	0.46	58.90	55.40	0.21	138.00					
UR-01-SS-17	BPSOU-UR01SS17-110221-1	XRF	30.07	7.00 U	48.64	23.32	6.10 UJ	103.74					
UR-01-SS-17	BPSOU-UR01SS17-110221-2	XRF	32.63	6.83 U	56.75	23.21	6.14 UJ	97.97					<u> </u>
UR-01-SS-17	BPSOU-UR01SS17-110221-3	XRF	29.55	6.94 U	44.34	24.04	6.27 UJ	94.33					<u> </u>
UR-01-SS-18	BPSOU-UR01SS18-110221-1	Lab	7.20	0.66	54.70	80.70	0.12	200.00					<u> </u>
UR-01-SS-18	BPSOU-UR01SS18-110221-2	Lab	5.10	0.21	39.40	26.50	0.11	79.40					───
UR-01-SS-18	BPSOU-UR01SS18-110221-3	Lab	5.00	0.24	39.40	23.80	0.08	76.30			<u> </u>		<u> </u>
UR-01-SS-19	BPSOU-UR01SS19-110221-1	Lab	5.00	0.33	49.90	39.40 J-	0.051 J	114.00 J-			<u> </u>		───
UR-01-SS-19	BPSOU-UR01SS19-110221-2	Lab	5.00	0.30	50.20	39.10	0.06	97.20			<u> </u>		<b> </b>
UR-01-SS-19	BPSOU-UR01SS19-110221-3	Lab	4.00	0.24	39.90 67.66	37.20	0.07	102.00 94.57			<u> </u>		───
UR-01-SS-20	BPSOU-UR01SS20-110221-1	XRF	42.60	6.68 U 6.98 U	67.66 52.84	31.26	5.83 UJ	94.57			<u> </u>		───
UR-01-SS-20	BPSOU-UR01SS20-110221-2	XRF	38.13	6.98 U	52.84	18.88	6.40 UJ	93.26			1		1

							i i						
UR-01-SS-20	BPSOU-UR01SS20-110221-3	XRF	32.92	7.03 U	45.76	16.03	5.88 UJ						
UR-01-SS-21	BPSOU-UR01SS21-110221-1	Lab	195.00	0.82	398.00	119.00	0.25	271.00					
UR-01-SS-21	BPSOU-UR01SS21-110221-2	Lab	158.00	0.25	224.00	35.60	0.27	96.30					
UR-01-SS-21	BPSOU-UR01SS21-110221-3	Lab	167.00	0.14 A	241.00	18.20	0.06	60.00					
UR-01-SS-22	BPSOU-UR01SS22-110221-1	XRF	33.83	6.87 U	67.40	28.82	5.86 UJ	79.20					
UR-01-SS-22	BPSOU-UR01SS22-110221-2	Lab	22.20	0.49	30.40	12.70	0.03	42.00					
UR-01-SS-22	BPSOU-UR01SS22-110221-3	XRF	31.56	7.04 U	59.88	24.60	6.14 UJ	92.40					
UR-01-SS-23	BPSOU-UR01SS23-110221-1	Lab	31.30	9.40	180.00	656.00	0.61	2,010.00					
UR-01-SS-23	BPSOU-UR01SS23-110221-2	Lab	60.10	79.20	569.00	2,850.00	2.40	22,800.00	TRUE	TRUE	TRUE	TRUE	TRUE
UR-01-SS-23	BPSOU-UR01SS23-110221-3	Lab	51.70	6.00	285.00	1,340.00	1.20	1,310.00	TRUE				TRUE
UR-01-SS-24	BPSOU-UR01SS24-110221-1	Lab	6.40	0.50	49.50	47.30	0.07	147.00					T
UR-01-SS-24	BPSOU-UR01SS24-110221-2	XRF	12.85	7.28 U	63.94	40.46	6.49 UJ	171.49					
UR-01-SS-24	BPSOU-UR01SS24-110221-3	XRF	10.03	7.58 U	52.19	21.07	6.50 UJ	115.90					T
UR-01-SS-25	BPSOU-UR01SS25-110221-1	Lab	7.10 J	0.49	55.40	54.20	0.05	155.00					
UR-01-SS-25	BPSOU-UR01SS25-110221-2	Lab	6.90	0.44	55.50	58.90	0.04	149.00					1
UR-01-SS-25	BPSOU-UR01SS25-110221-3	XRF	7.30	5.60 U	51.22	31.23	5.34 UJ	136.54					
UR-01-SS-26	BPSOU-UR01SS26-110221-1	XRF	27.87	7.16 U	77.70	53.98	6.17 UJ	204.11					
UR-01-SS-26	BPSOU-UR01SS26-110221-2	Lab	14.80	2.80	77.70	148.00	0.09	334.00					T
UR-01-SS-26	BPSOU-UR01SS26-110221-3	Lab	15.50	1.90	92.50	288.00	0.21	405.00			1		1
UR-01-SS-27	BPSOU-UR01SS27-110221-1	XRF	14.91	9.18	63.67	31.96	6.38 UJ	132.88			1		1
UR-01-SS-27	BPSOU-UR01SS27-110221-2	XRF	28.25	8.22	77.56	60.63	6.49 UJ	260.11			1		1
UR-01-SS-27	BPSOU-UR01SS27-110221-3	Lab	6.10	0.35	64.50	25.30 J-	0.034 J-	98.60 S-			1		1

Storm Water Screening Criteria Exceedance

Human Health Action Level Exceedance

	Table 4: Exceedances								
Station	Arsenic (mg/kg)	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Zinc (mg/kg)	1+>HH std	3+>SW std	1+>5000
UR-01-SS-23	60.10	79.20	569.00	2,850.00	2.40	22,800.00	TRUE	TRUE	TRUE
UR-01-SS-23	51.70	6.00	285.00	1,340.00	1.20	1,310.00	TRUE		
	Storm Water Screening Criteria Exceedance								

Human Health Action Level Exceedance

## Appendix A Data Summary Report (includes Data Validation Report)

## SILVER BOW CREEK/BUTTE AREA NPL SITE BUTTE PRIORITY SOILS OPERABLE UNIT

Draft Final

2021 Unreclaimed Sites Sampling UR-01 Data Summary Report (DSR)

Atlantic Richfield Company

May 2022

## SILVER BOW CREEK/BUTTE AREA NPL SITE BUTTE PRIORITY SOILS OPERABLE UNIT

## Draft Final

# 2021 Unreclaimed Sites Sampling UR-01 Data Summary Report (DSR)

Prepared for:

Atlantic Richfield Company 317 Anaconda Road Butte, Montana 59701

Prepared by:

*Pioneer Technical Services, Inc.* 1101 South Montana Street Butte, Montana 59701

May 2022

#### **TABLE OF CONTENTS**

LIST	OF F	IGURES	II
LIST	OF T	ABLES	III
LIST	OF A	TTACHMENTS	IV
ABB	REVIA	ATIONS AND ACRONYMS	V
ABST	ГRAC	Τ	VI
STAT	ГЕМЕ	ENT OF AUTHENTICITY	. VII
EXE	CUTI	VE SUMMARY	VIII
1.0	<b>INT</b> 1.1 1.2 1.3	RODUCTION Investigation Objectives Investigation Site Description Background	3 3
2.0	<b>DA</b> 2.1 2.2 2.3	<ul> <li><b>FA QUALITY OBJECTIVES AND ASSESSMENT</b></li> <li>Project Objectives and Sampling Design Review</li> <li>Preliminary Data Review</li> <li>2.2.1 Data Quality Indicators</li> <li>Data Quality Conclusions</li> </ul>	4 4 5
3.0	<b>SAN</b> 3.1	<b>IPLING AND ANALYSIS SUMMARY</b> Soil Sample Collection         3.1.1       Sample Analysis	5
4.0	DEV	VIATIONS	7
5.0	REF	FERENCES	8

### LIST OF FIGURES

Figure 1. Unreclaimed Sites UR-01 Sample Stations

### LIST OF TABLES

Table 1. Coordinates for Sample Stations and Identification

#### LIST OF ATTACHMENTS

Attachment A Data Validation Report (DVR) Attachment B Field Forms and Related Documents Attachment C Laboratory Data Packages Attachment D Electronic Data Deliverable File

### ABBREVIATIONS AND ACRONYMS

ACRONYM	DEFINITION	ACRONYM	DEFINITION
Atlantic Richfield	Atlantic Richfield Company	FSP	Field Sampling Plan
BPSOU	Butte Priority Soils Operable Unit	Pace	Pace Analytical Services
CD	Consent Decree	Pioneer	Pioneer Technical Services, Inc.
CFRSSI	Clark Fork River Superfund Site Investigation	QA	Quality Assurance
DI	Deionized	QAPP	Quality Assurance Project Plan
DM/DV	Data Management/Data Validation	QC	Quality Control
DQA	Data Quality Assessment	SOP	Standard Operation Procedures
DSR	Data Summary Report	UR	Unreclaimed
DVR	Data Validation Report	XRF	X-ray Fluorescence
EPA	Environmental Protection Agency		

#### ABSTRACT

This Butte Priority Soils Operable Unit (BPSOU) Unreclaimed (UR) Sites Data Summary Report (DSR) presents results of the subsurface soil sampling conducted from November 2, 2021, through November 03, 2021, at the UR source area UR-01 within the BPSOU.

For the event, 27 sample stations were sampled by collecting 3-point composite samples at 3 depth intervals. Each sample was analyzed in the field for pH and by X-ray fluorescence (XRF) for arsenic, cadmium, copper, lead, mercury, and zinc; 52 soil samples of the 81 collected were analyzed by the laboratory for arsenic, cadmium, copper, lead, mercury, zinc, and percent moisture. Four field duplicates were submitted to the laboratory for the sampling event.

This DSR was prepared by Pioneer Technical Services, Inc. (Pioneer), 1101 S. Montana Street, Butte, Montana 59701 for:

Atlantic Richfield Company 317 Anaconda Road Butte, Montana 59701

The information presented in this DSR includes laboratory analytical results from the sampling events.

#### STATEMENT OF AUTHENTICITY

Consistent with the provisions described in the 2020 U.S. Environmental Protection Agency (EPA) BPSOU Consent Decree (CD) (EPA, 2020a), the data sets referenced in this document are considered to be final data generated or evaluated. Data have been designated as enforcement quality and screening quality as described in the *Clark Fork River Superfund Site Investigations* (CFRSSI) *Quality Assurance Project Plan* (QAPP) (ARCO, 1992a) and *CFRSSI Data Management/Data Validation* (DM/DV) *Plan* (ARCO, 1992b), as supplemented by the *CFRSSI Plan Addendum* (AERL, 2000a). Consistent with the aforementioned orders, the signatories below hereby stipulate the authenticity and accuracy of the data and hereby waive any evidentiary or other objection as to the authenticity and accuracy of reference in endangerment assessments, public health evaluations, feasibility studies, and remedial design/remedial action documents.

Approved by:		
	Mike Mc Anulty	Date
	Liability Manager	
	Atlantic Richfield Company	
Approved by:		
nppio vou og.	Nikia Greene	Date
	Remedial Project Manager	
	U.S. Environmental Protection Agency	
	Region VIII	
Approved by:		
	Daryl Reed	Date
	State Project Officer	
	Montana Department of Environmental Quality	
Approved by:		
	Scott Sampson	Date
	Project Manager	
	Pioneer Technical Services, Inc.	

#### **EXECUTIVE SUMMARY**

This BPSOU UR Sites DSR presents the results of the subsurface soil sampling conducted from November 2, 2021, through November 03, 2021, at the UR source area UR-01 within the BPSOU.

Sampling was conducted under the guidelines of the *BPSOU UR Sites Final Field Sampling Plan* (*FSP*) #7: *UR-01*, *UR-02*, *UR-03*, *UR-04*, *UR-15*, and *UR-17* (Atlantic Richfield Company, 2021a) (referred to herein as FSP) and the 2021 *Final UR Sites QAPP* (Atlantic Richfield Company, 2021b) (referred to herein as QAPP). Information and data from the sampling efforts will be used to characterize the potential contamination at the Site and evaluate potential human health and ecological risks.

This DSR includes all field XRF and soil pH data, laboratory analytical data, and data validation packages. This DSR does not include any analysis or interpretation of the data by Atlantic Richfield Company (Atlantic Richfield).

Paste pH and natural soil samples were collected from 27 sample stations (Figure 1). Each sample station was determined based on preliminary Site investigations and Agency approval.

In total, 27 sample stations were sampled by collecting 3-point composite samples at 3 depth intervals. Each sample was analyzed in the field for pH and by XRF for arsenic, cadmium, copper, lead, mercury, and zinc; 52 soil samples of the 81 collected were analyzed by the laboratory for arsenic, cadmium, copper, lead, mercury, zinc, and percent moisture. Four field duplicates were submitted to the laboratory for the sampling event. Pioneer submitted soil samples to Pace Analytical Services, LLC (Pace) in Minneapolis, Minnesota.

Analytical results were reported in a standard data package.

A data validation system was implemented consistent with the procedures described in the CFRSSI DM/DV Plan (ARCO, 1992b) and subsequent addendum (AERL, 2000a). The format for this DSR is consistent with the format established in the *CFRSSI Pilot Data Report Addendum* (AERL, 2000b).

#### **1.0 INTRODUCTION**

This report presents the results of soil sampling and analysis for the UR Sites investigation conducted from November 2, 2021, through November 3, 2021, at the UR source area UR-01 within the Silver Bow Creek/Butte Area National Priorities List Site BPSOU area. Activities were consistent with the provisions described in Appendix D of the BPSOU CD (EPA, 2020a). Historical results from previous investigations are summarized in the FSP. The information contained in this report was gathered according to objectives and procedures documented in the FSP and according to the overall soil sampling, analysis objectives, and requirements outlined in the QAPP.

Information referenced throughout this DSR is included in the appendices below:

- Attachment A Data Validation Report (DVR).
- Attachment B Field Forms and Related Documents.
- Attachment C Laboratory Data Packages.
- Attachment D Electronic Data Deliverable File (included separately).

This investigation's field notebook and datasheets are located at the Atlantic Richfield Contractor (Pioneer) office in Butte, Montana.

All characterization activities and procedures in 2021 followed the QAPP. Sample stations were determined based on preliminary Site investigations and Agency approval. The QAPP describes the quality assurance (QA) and quality control (QC) policies and procedures used during sample collection and analysis. Samples were obtained from the sample stations identified in Table 1 and listed below, following the FSP.

Station Field Identification	Sample Identification
UR-01-SS-01	BPSOU-UR01SS01-110321-X
UR-01-SS-02	BPSOU-UR01SS02-110321-X
UR-01-SS-03	BPSOU-UR01SS03-110321-X
UR-01-SS-04	BPSOU-UR01SS04-110321-X
UR-01-SS-05	BPSOU-UR01SS05-110321-X
UR-01-SS-06	BPSOU-UR01SS06-110321-X
UR-01-SS-07	BPSOU-UR01SS07-110321-X
UR-01-SS-08	BPSOU-UR01SS08-110221-X
UR-01-SS-09	BPSOU-UR01SS09-110221-X
UR-01-SS-10	BPSOU-UR01SS10-110221-X
UR-01-SS-11	BPSOU-UR01SS11-110221-X
UR-01-SS-12	BPSOU-UR01SS12-110221-X
UR-01-SS-13	BPSOU-UR01SS13-110221-X
UR-01-SS-14	BPSOU-UR01SS14-110221-X
UR-01-SS-15	BPSOU-UR01SS15-110221-X
UR-01-SS-16	BPSOU-UR01SS16-110221-X
UR-01-SS-17	BPSOU-UR01SS17-110221-X
UR-01-SS-18	BPSOU-UR01SS18-110221-X
UR-01-SS-19	BPSOU-UR01SS19-110221-X
UR-01-SS-20	BPSOU-UR01SS20-110221-X
UR-01-SS-21	BPSOU-UR01SS21-110221-X
UR-01-SS-22	BPSOU-UR01SS22-110221-X
UR-01-SS-23	BPSOU-UR01SS23-110221-X
UR-01-SS-24	BPSOU-UR01SS24-110221-X
UR-01-SS-25	BPSOU-UR01SS25-110221-X
UR-01-SS-26	BPSOU-UR01SS26-110221-X
UR-01-SS-27	BPSOU-UR01SS27-110221-X
UR-01-OP-01	BPSOU-UR01OP01-110221-X

\*X indicates sample depth interval.

Samples collected were analyzed by XRF. A subset of the samples was sent to Pace in Minneapolis, Minnesota for laboratory analyses as listed in Section 3.1.4, Table 5 of the QAPP. The data verification and validation for the XRF and laboratory results are included in Attachment A. All data included in this report are provided as final.

Personnel from Pioneer completed the soil sampling activities. The soil data collected had to undergo rigorous sampling and analysis procedures and meet QA/QC protocols and documentation requirements to be designated as enforcement quality. All metals data underwent a Stage 2A

verification and validation according to EPA *National Functional Guidelines for Inorganic Superfund Data Review* (EPA, 2020b) and EPA *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use* (EPA, 2009). All metals data presented herein have undergone data validation according to the CFRSSI DM/DV Plan Addendum (AERL, 2000a). Section 3.0 and Attachment A provide information about data quality and validation.

This DSR contains the following information:

- Investigation objectives (Section 1.1).
- Site description and background (Sections 1.2 and 1.3).
- Data quality assessment (DQA) (Section 2.0).
- Project objectives and sampling design review (Section 2.1).
- Preliminary data review (Section 2.2).
- Conclusions on the quality of the data (Section 2.3).
- Sampling and analysis summary (Section 3.0).
- Deviations (Section 4.0).

The Standard Operating Procedures (SOPs) followed were developed by Pioneer according to the *CFRSSI SOPs* (ARCO, 1992c) and are included in the QAPP. The SOPs were followed for sampling, data collection, and field/office protocols.

#### **1.1 Investigation Objectives**

The QAPP listed the following two objectives:

- The Site will be sampled at 3 depth intervals [(1) 0 to 2 inches, (2) 2 to 6 inches, and (3) 6 to 12 inches] at the Site-specific approved sample stations.
- Opportunistic samples may be obtained in the field at the discretion of field sampling personnel or Agency oversight representative(s). The field team leader will be responsible for determining the appropriate sampling protocol as dictated by the location of the opportunistic sample(s).

The results of the investigation will supplement existing data contained within the Atlantic Richfield Geocortex historical database cited in the FSP. This data will be used to make a Site declaration specifying any areas that do not meet the human health or storm water criteria per Table 1 and Table 2 in the QAPP.

#### **1.2** Investigation Site Description

The UR Sites within the BPSOU could pose a threat to human health or surface water quality due to the presence of historical mine waste. Although many source areas have been previously reclaimed, areas still exist in which soil has not yet been evaluated; such Sites may provide a pathway for human exposure or impact surface water quality via storm water runoff. The UR-01 Site was assessed per the QAPP.

This DSR describes the activities conducted for soil sampling and characterization at the UR-01 Site. Supplemental information provided in the FSP (Atlantic Richfield Company, 2021a) described the 2021 investigation. Sample stations were determined based on preliminary Site investigations and Agency approval to quantify the potential of human health impacts and/or storm water impacts at depth intervals of 6 to 12 inches, 2 to 6 inches, and 0 to 2 inches.

The following figure summarizes the 2021 sampling effort:

• Figure 1 displays proposed and sampled stations for the 2021 sampling event.

## 1.3 Background

Site UR-01 is approximately 5.44 acres and is located north of Walkerville, Montana, and just north of the Alice Pit. The Site is bounded on the south by North Alice Street and on the north by Ryan Road (Figure 1). Ownership of Site includes Atlantic Richfield Company and a private third party. Site UR-01 is vacant land with well-established vegetation and several bare areas, including windrows of dumped material. The dumped material is covered with established weeds and grasses. An erosion rill starting from the middle of the Site running northwest into the drainage ditch appears to have iron staining and impacted soil. There are residences within 200 feet of UR-01 in several directions. Site UR-01 is in the Beef Straight Gulch drainage basin.

## 2.0 DATA QUALITY OBJECTIVES AND ASSESSMENT

The objective of the DQA process (EPA, 2000) is to determine whether the project-specific objectives have been satisfied and if the analytical results are acceptable for project decision making. The DQA process consists of five steps that relate the quality of the results to the intended use of the data:

Step 1: Review sampling design (Section 2.1).

- Step 2: Conduct preliminary data review (Section 2.2).
- Step 3: Select statistical test(s) as appropriate to evaluate data quality (not applicable).
- Step 4: Verify assumptions (not applicable).
- Step 5: Draw conclusions about the quality of the data (Section 2.3).

#### 2.1 Project Objectives and Sampling Design Review

Project-specific objectives were defined in the FSP to cover the sampling design requirements outlined in the QAPP.

#### 2.2 Preliminary Data Review

A preliminary data review was conducted to determine if any problems or anomalies were present in the sample collection and analysis procedures. This was completed by evaluating data quality indicators (Section 2.2.1) followed by data verification and validation (Attachment A).

## 2.2.1 Data Quality Indicators

The DQA process evaluates the results against data quality indicators of precision, accuracy, representativeness, comparability, completeness, and sensitivity. An evaluation of each data quality indicator is included in the DVR (Attachment A).

## 2.3 Data Quality Conclusions

The laboratory samples were collected using standard sampling methods and relevant Pioneer SOPs. The sampling design, SOPs, and laboratory analytical methods were based on EPA and other industry-standard practices. The analytical laboratories performed the sample analyses using industry-standard methods. Laboratory analytical methods are provided in Table 5 of the QAPP. Sample collection was completed by professionals properly trained in following SOPs and using the equipment. Proper chain of custody and sample handling activities were observed during sample collection, delivery to the laboratory, and analysis. The validation checklists are included in the DVR (Attachment A), all data met the Level A and Level B criteria.

Data generated from the samples collected were examined to ensure that project objectives were met. The data quality objectives for the investigation are listed in the QAPP Section 2.4. A data QA/QC review was completed for the sampling event.

For the 2021 Site sampling event, a total of 81 natural soil samples were collected. All samples were analyzed by XRF, and 52 samples were sent to Pace for laboratory analysis. This resulted in a total of 486 natural data points generated by the XRF analyses and 364 natural data points generated by the laboratory analysis. Of the points, 85 (17%) XRF natural data points were designated screening quality, and 401 (83%) XRF natural data points were designated screening quality. For the laboratory natural data points, 24 (7%) were designated screening quality, and 340 (93%) laboratory natural data points were designated as enforcement quality. No data were rejected. The DVR (Attachment A) includes a summary of the analysis. Please note that 81 of the 85 (95%) screening quality XRF data points were qualifications made to the mercury results due to the lack of a calibration check sample (Section 2.2.3 of the DVR). Based on the data quality conclusions in the DSR, the data analyzed in the 2021 sampling event were deemed usable.

#### 3.0 SAMPLING AND ANALYSIS SUMMARY

This section summarizes completed tasks that addressed the monitoring objectives described in the QAPP, including sampling methods, field analysis methods, and analytical results for the UR soil sampling.

#### 3.1 Soil Sample Collection

Samples were collected following procedures detailed in the QAPPs referenced in Section 1.0, except where modifications of the sampling design or procedures were required. Any modifications are listed in Section 4.0. Sample station locations were selected in cooperation and agreement with Agency oversight personnel.

The general sampling approach consisted of hand-dug pits. The UR Site sampling proceeded as follows.

Sample stations were determined based on preliminary Site investigations and the Agencyapproved FSP. Field personnel and representatives from the Agencies (when present) made decisions regarding collection of additional "opportunistic" samples to characterize the Site conditions and characteristics accurately. A minimum of 3 combination samples (9 subsamples) were collected in a 3-point (triangular) pattern. At each point, a subsample of predetermined depth was collected. As a rule, the diagonal distance between the points was 10 feet, depending on the area of soil homogeneity. The diagonal distance could be adjusted in the field to account for soil differences and the presence of obstacles. Three discrete aliquots of equal amounts of soil from each designated subsample location were composited into 1 sample. Materials such as plant matter, debris, and large rocks were removed, to a reasonable extent, prior to placing the sample in the sample container for laboratory analysis. A portion of the natural sample was placed into a #10 (2 millimeter) disposable sieve screen prior to running the XRF analysis and a portion was used for pH analysis. After XRF analysis was complete, the sample was archived in the Pioneer Butte, Montana, office. Samples were collected from the 0- to 12-inch depth at 0- to 2-inch, 2- to 6-inch, and 6- to 12-inch intervals.

## 3.1.1 Sample Analysis

## 3.1.1.1 pH

The general UR Site pH analysis proceeded as follows per SOP-SFM-01 in Attachment B of the QAPP:

Composite paste pH samples were collected using disposable trowel scoops, plastic cups, and deionized (DI) water. Roughly 1 inch of fine material was scooped from the sieved material into the bottom of the cup. The DI water was added to the sample, and the cup was swirled until a paste was made. Soil pH are included in Attachment B. The Hanna Instruments HI 99121 meter was used to measure the paste pH sample. The meter was decontaminated with DI water after each use. The collected soil was returned to the area where the sample was collected, and the tools were discarded.

#### 3.1.1.2 XRF

The general XRF analysis proceeded as follows per SOP-SFM-02 in Attachment B of the QAPP:

Field personnel thoroughly homogenized the natural sample in the bag by kneading the soil, split roughly 1 disposable trowel scoop from the natural sample, and placed the split sample into a #10 sieve inside a gallon resealable plastic bag (i.e., Ziploc<sup>TM</sup>). The sieved sample was transferred into an additional 1-quart resealable plastic bag so that it fit in the analyzer measurement stand. The material was compacted so that there was a flat surface on the area to be analyzed and visually inspected to ensure that only fines were present. The sample bag was placed on the XRF stand and analyzed. The results were recorded for the selected metals on the XRF field datasheet. Field

personnel completed duplicate and replicate XRF analyses on at least 5% of the samples analyzed in the XRF unit.

Soil samples for arsenic, cadmium, copper, mercury, lead, zinc, percent moisture, and associated QA/QC samples were packaged and shipped to Pace for analysis. Field forms are in Attachment B, analytical reports are in Attachment C, data deliverable files are in Attachment D, and soil results (including QA/QC samples), applicable laboratory flags, data validation qualifiers, and reason codes are included in the tables in the DVR in Attachment A.

#### **3.1.1.3** Laboratory Samples

The general laboratory sampling proceeded as follows per SOP-S-01 and SOP-SA-01 in Attachment B of the QAPP:

Composite soil samples were collected in a labeled plastic bag and homogenized after each subsample was collected. After the sample was collected from the 3-point composite, a portion of the sample was removed and placed in a #10 sieve within a separate resealable plastic bag (XRF analysis described in Section 3.1.1.2 above). Field personnel then sent every 1 per 10 samples, with additional samples sent to the laboratory for confirmation if the field results were within the COC action/screening levels (Table 1 and Table 2 within the QAPP) at 35% above and 35% below. Laboratory samples were analyzed for arsenic, cadmium, copper, lead, mercury, zinc, and percent moisture.

#### 4.0 **DEVIATIONS**

During the sampling event, there were two deviations to the QAPP or FSP as described below:

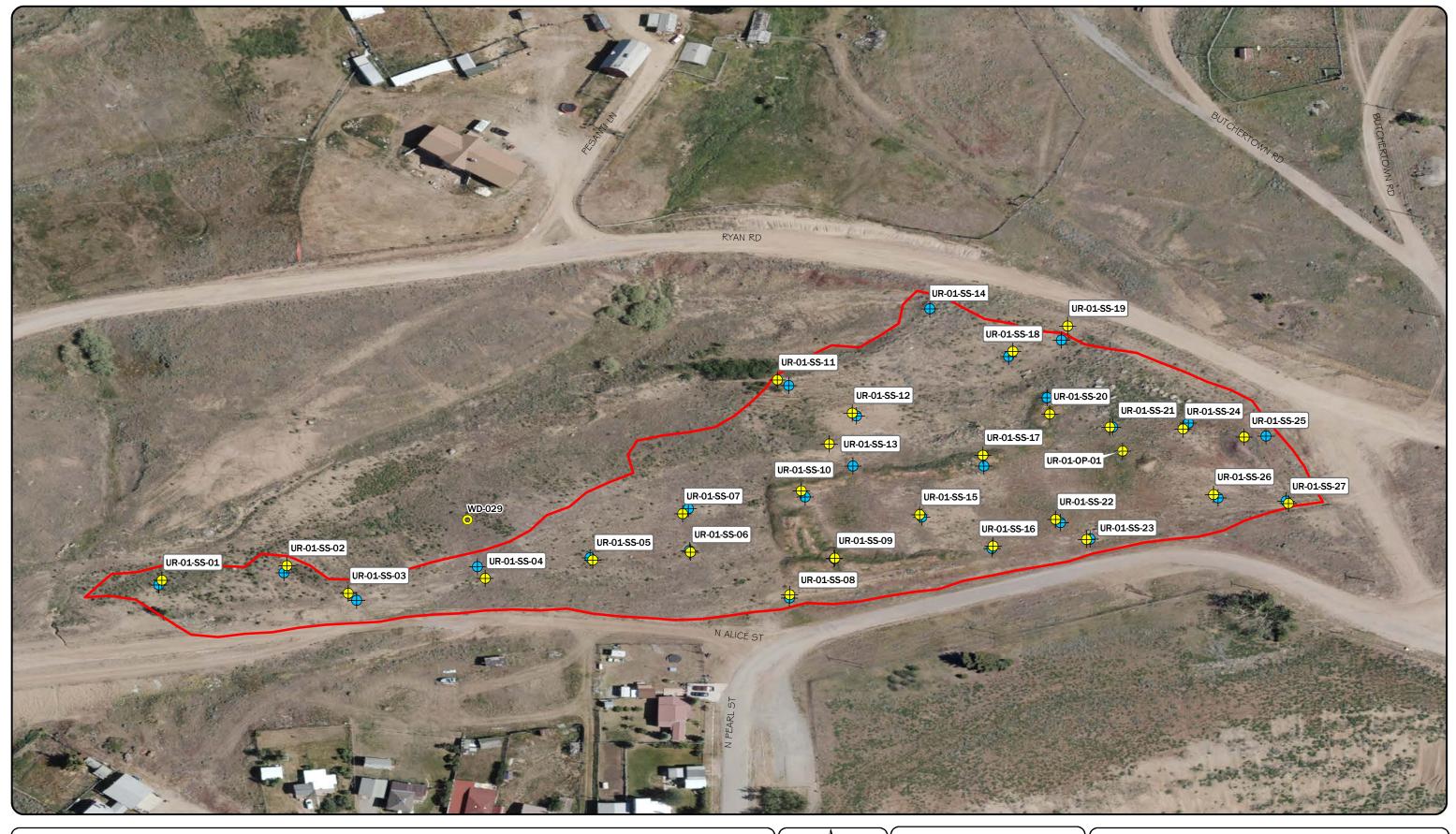
• Sample station UR-01-SS-14 was not sampled due to private third-party ownership. UR-01-OP-01 was collected to meet the sampling frequency. There is an adequate sample density near sample UR-01-SS-14.

#### 5.0 **REFERENCES**

- AERL, 2000a. Clark Fork River Superfund Site Investigations Data Management/Data Validation Plan Addendum. June 2000.
- AERL, 2000b. Clark Fork River Superfund Site Pilot Data Report Addendum. July 2000.
- ARCO, 1992a. Clark Fork River Superfund Site Investigations Quality Assurance Project Plan. May 1992. Prepared by PTI Environmental Services.
- ARCO, 1992b. Clark Fork River Superfund Site Investigations Data Management/Data Validation Plan. May 1992. PTI Environmental Services, Contract C 117-06-64, April 1992.
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- Atlantic Richfield Company, 2021a. BPSOU Unreclaimed Sites Draft Final Field Sampling Plan Package #7. October 2021.
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## Figures

Figure 1. Unreclaimed Sites UR-01 Sample Stations



+ 2021 SAMPLED STATIONS

PROPOSED SAMPLE STATIONS

O HISTORIC SAMPLE STATION

UNRECLAIMED SITES BOUNDARY

Path: Z:\Shared\Active Projects\ARCO\BPSOU\LandSupport\SolidMedia\Insufficiently\_Unreclaimed\UR\_Sampling\Unreclaimed\_Samplelocations\_UR01.mxd



Unreclaimed Sites UR-01 2021 Sample Stations DATE: 4/29/2022

## Tables

Table 1. Coordinates for Sample Stations and Identification

Table 1. Coordinates for Sample Stations and Identification					
Station Field Identification	Sample Identification	Northing	Easting		
UR-01-SS-01	BPSOU-UR01SS01-110321-X	665660.718	1196755.77		
UR-01-SS-02	BPSOU-UR01SS02-110321-X	665675.996	1196877.298		
UR-01-SS-03	BPSOU-UR01SS03-110321-X	665635.371	1196935.283		
UR-01-SS-04	BPSOU-UR01SS04-110321-X	665650.649	1197068.269		
UR-01-SS-05	BPSOU-UR01SS05-110321-X	665672.177	1197173.477		
UR-01-SS-06	BPSOU-UR01SS06-110321-X	665679.468	1197268.269		
UR-01-SS-07	BPSOU-UR01SS07-110321-X	665733.288	1197262.713		
UR-01-SS-08	BPSOU-UR01SS08-110221-X	665616.968	1197362.019		
UR-01-SS-09	BPSOU-UR01SS09-110221-X	665665.927	1197407.678		
UR-01-SS-10	BPSOU-UR01SS10-110221-X	665760.892	1197378.685		
UR-01-SS-11	BPSOU-UR01SS11-110221-X	665915.336	1197361.498		
UR-01-SS-12	BPSOU-UR01SS12-110221-X	665866.898	1197432.331		
UR-01-SS-13	BPSOU-UR01SS13-110221-X	665824.711	1197408.373		
UR-01-SS-15	BPSOU-UR01SS15-110221-X	665722.888	1197491.966		
UR-01-SS-16	BPSOU-UR01SS16-110221-X	665676.534	1197561.237		
UR-01-SS-17	BPSOU-UR01SS17-110221-X	665803.357	1197556.289		
UR-01-SS-18	BPSOU-UR01SS18-110221-X	665946.325	1197590.924		
UR-01-SS-19	BPSOU-UR01SS19-110221-X	665979.398	1197645.091		
UR-01-SS-20	BPSOU-UR01SS20-110221-X	665857.784	1197623.216		
UR-01-SS-21	BPSOU-UR01SS21-110221-X	665837.732	1197680.508		
UR-01-SS-22	BPSOU-UR01SS22-110221-X	665711.43	1197623.216		
UR-01-SS-23	BPSOU-UR01SS23-110221-X	665682.784	1197652.122		
UR-01-SS-24	BPSOU-UR01SS24-110221-X	665832.263	1197751.341		
UR-01-SS-25	BPSOU-UR01SS25-110221-X	665818.461	1197809.934		
UR-01-SS-26	BPSOU-UR01SS26-110221-X	665740.076	1197777.382		
UR-01-SS-27	BPSOU-UR01SS27-110221-X	665724.451	1197849.257		
UR-01-OP-01	BPSOU-UR01OP01-110221-X	665804.138	1197691.445		

\*Datum used is NAD83

# Attachment A Data Validation Report (DVR)

## SILVER BOW CREEK/BUTTE AREA NPL SITE BUTTE PRIORITY SOILS OPERABLE UNIT

Draft Final

2021 Unreclaimed Sites Sampling UR-01 Data Validation Report

Atlantic Richfield Company

May 2022

## SILVER BOW CREEK/BUTTE AREA NPL SITE BUTTE PRIORITY SOILS OPERABLE UNIT

# Draft Final

# 2021 Unreclaimed Sites Sampling UR-01 Data Validation Report

Prepared for:

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May 2022

n	ЛАТ	Page
0	DAI	A VALIDATION REPORT SUMMARY 1
0	QUA	LITY ASSURANCE/QUALITY CONTROL REVIEW OF INORGANIC
	DAT	A
	2.1	Field Quality Control Samples
		2.1.1 Field Duplicate
		2.1.2 Equipment Rinsate Blank
	2.2	XRF Quality Control Samples
		2.2.1 Energy Calibration Check
		2.2.2 Silicon Dioxide Standard
		2.2.3 Calibration Check Samples
		2.2.4 XRF Duplicate and XRF Replicate Samples
	2.3	Laboratory Quality Control Samples
	LEV	EL A/B ASSESSMENT SUMMARY 7
	4.1	Precision
		4.1.1 XRF Precision
		4.1.2 Laboratory Precision
	4.2	Accuracy
		4.2.1 XRF Accuracy
		4.2.2 Laboratory Accuracy
	4.3	Representativeness
	4.4	Comparability
		4.4.1 XRF Comparability
		4.4.2 Laboratory Comparability
	4.5	Completeness
		4.5.1 XRF Completeness
		4.5.2 Laboratory Completeness
	4.6	Sensitivity
		4.6.1 XRF Sensitivity
		4.6.2 Laboratory Sensitivity
	4.7	Overall Data Summary15
	DEE	
	KEF.	ERENCES

#### LIST OF TABLES

- Table A1. Natural Sample Results with Laboratory Qualifiers; Data Validation Qualifiers; Enforcement, Screening, and Rejected Classifications; and Data Validation Reason Codes
- Table A2. Field Duplicate Pair Samples with Results, Laboratory Qualifiers, Data ValidationQualifiers, Data Validation Reason Codes, and QC Criteria Assessment
- Table A3. Sample Identification
- Table A4. Laboratory Qualifiers; Data Validation Qualifiers; Enforcement, Screening, and Rejected Codes; and Reason Codes Definitions
- Table A5. XRF SiO<sub>2</sub> Standard and Calibration Check Sample Results
- Table A6. XRF Duplicate and Replicate Sample Results and QC Criteria Assessment

#### LIST OF ATTACHMENTS

Attachment 1 Data Validation Checklists Attachment 1.1 Data Validation Checklists for XRF Analyses Attachment 1.2 Data Validation Checklists for Laboratory Analyses Attachment 2 Level A/B Assessment Checklist Attachment 3 Data Validation Quality Control Criteria

Acronym	CRONYMS AND ABBREVIATIONS Definition
%R	Percent Recovery
BPSOU	Butte Priority Soils Operable Unit
CCS	Calibration Check Sample
CFRSSI	Clark Fork River Superfund Site Investigation
COC	Contaminants Of Concern
DM/DV	Data Management/Data Validation
DV	Data Validation
DVR	Data Validation Report
EPA	U.S. Environmental Protection Agency
FSP	Field Sampling Plan
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LDS	Laboratory Duplicate Sample
LMS	Laboratory Matrix Spike
LMSD	Laboratory Matrix Spike Duplicate
LOD	Limit of Detection
MB	Method Blank
MDL	Method Detection Limit
mg/kg	milligram per kilogram
NFG	National Functional Guidelines
Pace	Pace Analytical Services, LLC
Pioneer	Pioneer Technical Services, Inc.
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference
SDG	Sample Delivery Group
SiO <sub>2</sub>	Silicon Dioxide
SOP	Standard Operating Procedure
UR	Unreclaimed
XRF	X-Ray Fluorescence

#### **ACRONYMS AND ABBREVIATIONS**

#### **DOCUMENT MODIFICATION SUMMARY**

Revision No.	Author	Version	Description	Date
Rev 0	Sara Ward	Draft	Issued for Internal Review	3/18/2022
Rev 1	Sara Ward	Draft Final	Submitted to Agencies	05/24/2022

## 1.0 DATA VALIDATION REPORT SUMMARY

This Data Validation Report (DVR) summarizes the X-ray fluorescence (XRF) and laboratory analytical results from samples collected from the Unreclaimed (UR) UR-01 Site (referred to as Site). The samples were collected per the *Final Butte Priority Soils Operable Unit (BPSOU) Unreclaimed Sites Field Sampling Plan (FSP) Package #7: UR-01, UR-12, UR-03, UR-04, UR-15, and UR-17* (Atlantic Richfield Company, 2021a) (referred to herein as the FSP). The 2021 UR-01 sampling event included samples collected under the 2021 *Unreclaimed Sites Quality Assurance Project Plan* (QAPP) (Atlantic Richfield Company, 2021b) (referred to herein as the QAPP).

All data have undergone a Stage 2A data validation (DV) as defined in the U.S. Environmental Protection Agency (EPA) *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use* (EPA, 2009). The DV was conducted in accordance with the QAPP, the *Clark Fork River Superfund Site Investigation* (CFRSSI) *Data Management* (DM)/DV *Plan* (ARCO, 1992a) and *CFRSSI DM/DV Plan Addendum* (AERL, 2000), the *CFRSSI QAPP* (ARCO, 1992b), *EPA National Functional Guidelines (NFG) for Inorganic Methods Superfund Data Review* (EPA, 2020), analytical methods, and laboratory standard operating procedures (SOPs). The 2020 EPA NFG for Inorganic Methods Superfund Data Review was followed since it is the most current version. This report details the evaluation of field XRF and laboratory data for the purpose of usability.

This document refers to the tables and attachments below.

- Table A1 contains the natural sample results with laboratory qualifiers; DV qualifiers; enforcement, screening, and rejected classifications; and DV reason codes.
- Table A2 contains the field duplicate pair samples with results, laboratory qualifiers, DV qualifiers, DV reason codes, and quality control (QC) criteria assessment.
- Table A3 contains sample identification information including the field sample name, sample type, sample location, laboratory sample name, sample date, analytical methods, and analytes.
- Table A4 contains the definitions for the laboratory qualifiers; DV qualifiers; enforcement, screening, and rejected classification codes; and DV reason codes.
- Table A5 contains the XRF Silicon Dioxide (SiO<sub>2</sub>) Standard and Calibration Check Sample (CCS) results.
- Table A6 contains the XRF duplicate and replicate sample results and QC criteria assessment.
- Attachment 1 contains DV checklists. Attachment 1.1 and Attachment 1.2 contain the checklists for XRF analysis and laboratory analysis, respectively.
- Attachment 2 contains the Level A/B Assessment Checklist.
- Attachment 3 contains the QC criteria used in the DV process.

The instrument output for XRF data, produced by Pioneer Technical Services, Inc. (Pioneer), was used to perform the DV of the XRF results, and the standard data packages received from Pace Analytical Services, LLC (Pace) were used to perform the DV of the laboratory results.

All data met the Level A and B criteria. Based on the validation process outlined in the CFRSSI DM/DV Plan (ARCO, 1992a), the quality of the data is ranked as enforcement quality, screening quality, or it is rejected. Enforcement quality data are defined in the CFRSSI DM/DV Plan as data that meet the Level A and B criteria (Attachment 2) and are not qualified as estimated or rejected after the DV process. For sample results qualified as estimated "J" by the laboratory because the reported result is between the method detection limit (MDL) and analytical reporting limit (RL), values are considered enforcement data if no other qualifiers were required during validation. Enforcement quality data may be used for all purposes under the Superfund program including the following: site characterization, health and safety, Engineering Evaluation/Cost Analysis, remedial investigation/feasibility studies, evaluation of alternatives, confirmational purposes, risk assessments, and engineering design. As all samples met the Level A and B documentation criteria, the results that were not qualified as estimated (e.g., J, J+, J-, or UJ) or rejected for some exceedance of quality assurance (QA)/QC criteria were considered "enforcement" quality data and were assigned an "E" in Table A1. Screening quality data, as defined in the CFRSSI DM/DV Plan, are those samples that do not meet the Level B criteria and/or were qualified as estimated (e.g., J, J+, J-, or UJ) during the DV process. Potential uses of screening quality data, depending on their quality, include site characterization, determining the presence or absence of contaminants, developing or refining sampling and analysis techniques, determining relative concentrations, scoping and planning for future studies, engineering studies and engineering design, and monitoring during implementation of the response action. Sample results that were qualified as estimated during the validation process were considered "screening" quality data and assigned an "S" in Table A1.

Data rejected during DV cannot be used for any Superfund activities. No results were rejected.

The summary of data points in this DVR includes only the natural samples and does not include the field QC samples (the field duplicate). Note that the field QC samples underwent the same DV procedures as the natural samples and the results are included on the DV checklists in Attachment 1. The qualifications made to field QC samples are listed in Table A2; however, the qualifications made to these samples are not included in the summary of qualifications made to natural data points, and the field QC samples are not included in Table A1.

For the 2021 Site sampling event, a total of 81 natural soil samples were collected. All samples were analyzed in the field by XRF, and 52 samples were sent to Pace for laboratory analysis of metals. This resulted in a total of 486 natural data points generated by the XRF analyses and 364 natural data points generated by the laboratory analysis. Sample station UR-01-SS-14 was not sampled due to third party ownership. An additional sample station, UR-01-OP-01, was sampled to meet the requirements of the FSP.

A summary by analysis type is shown below:

Analysis Type	Natural Samples	Data Points	Enforcement Quality Data Points (% of total)	Screening Quality Data Points (% of total)	Rejected Data Points (% of total)
XRF	81	486	401 (83%)	85 (17%)	0 (0%)
Pace	52	364	340 (93%)	24 (7%)	0 (0%)

Please note that 81 of the 85 (95%) screening quality XRF data points were qualifications made to the mercury results due to the lack of a CCS with a known amount of mercury, as discussed in Section 2.2.3.

Table A1 shows the laboratory qualifiers, DV qualifiers, enforcement or screening designators, and the reason code for the qualification for each natural data point.

#### 2.0 QUALITY ASSURANCE/QUALITY CONTROL REVIEW OF INORGANIC DATA

The QC criteria used during the DV process are listed in Attachment 3.

For XRF data, the QC criteria were derived from the QAPP, the CFRSSI DM/DV Plan (ARCO, 1992a) and DM/DV Plan Addendum (AERL, 2000), the CFRSSI QAPP (ARCO, 1992b), the Niton XL3 Mining QC Sheet (ThermoFisher Scientific, 2014), and the Pioneer SOP for operating the XL3 XRF analyzer (SOP-SFM-02) (included in the QAPP).

For laboratory data, the QC criteria were derived from the QAPP, CFRSSI DM/DV Plan Addendum (AERL, 2000), the NFG for Inorganic Superfund Data Review (EPA, 2020), analytical methods, and method-specific laboratory SOPs.

The DV checklists derived from the CFRSSI DM/DV Addendum (AERL, 2000) were completed for the XRF data and each laboratory report (Attachment 1). Below are the deviations made to the checklists provided in the CFRSSI DM/DV Addendum guidance document:

- The Laboratory DV Checklist for Metals Analysis by Spectrace XRF was revised slightly to more accurately reflect the information provided by the XRF Analyzer (Niton XL3). The checklist is included in Attachment 1.1. The guidelines for XRF QA and QC are listed in Section 3.6 (Quality Assurance/Quality Control) of the QAPP.
- The Laboratory DV Checklist for Metals Analysis by Inductively Coupled Plasma or Graphite Furnace Atomic Absorption Spectrometry was revised slightly to more accurately reflect the information provided in the full data packages provided by Pace and the requirements listed in the NFG (EPA, 2020). The checklist is included in Attachment 1.2.
- The DV Checklist for Field QC was not filled out for each data package. Sections on field duplicates were added to each Laboratory DV Checklist worksheet.

The relevant DV checklists were completed for each sample delivery group (SDG) and included the DV performed for the methods and analytes listed below:

Data Validation Checklist	Method	Analyte(s)
XRF	XRF	Arsenic, cadmium, copper, lead, mercury, and zinc
Lehevetenu	EPA 6010D	Arsenic, cadmium, copper, lead, and zinc
Laboratory: Pace	EPA 7471B	Mercury
Pace	ASTM D2974	Percent Moisture

One Level A/B Assessment was completed for the Site (Attachment 2).

#### 2.1 Field Quality Control Samples

The QAPP requirement for field duplicate collection frequency is 1 field duplicate sample per 20 natural samples or once per sampling event, whichever is more frequent. Disposable sampling equipment was used to collect soil samples; therefore, equipment rinsate blanks were not collected.

Any qualifications required based on the field QC sample results are detailed in the DV checklists (Attachment 1) and are listed in Table A1 and Table A2.

Please note that although the field QC samples (field duplicate samples) may receive a qualifier during the DV process, the enforcement and screening quality summaries and the precision and accuracy assessment summaries do not include the field QC sample results. Only the results of the natural samples are included in the data quality assessment summaries.

#### 2.1.1 Field Duplicate

During the sampling event, 4 field duplicate samples were collected for the 52 natural samples submitted to Pace for analysis (7.7%); therefore, the collection frequency requirement for field duplicates (5%) was met.

The analytical RLs presented in the laboratory reports were used to evaluate the field duplicates. The field duplicate QC criteria assessments are listed in Table A2.

For the 81 natural XRF samples collected at the Site, 5 field duplicate samples (6.2%) were analyzed; therefore, the collection frequency requirement for field duplicates (5%) was met.

The QC criteria used to assess field duplicate pair results during DV are listed in Attachment 3. The field duplicate sample pairs and QC criteria assessments are listed in Table A2. If a field duplicate result was outside the control limit, the parent sample and any samples considered sufficiently similar were qualified as specified in Attachment 3. Any qualifications made to natural samples based on the field duplicate sample results are detailed in the DV checklists (Attachment 1) and are listed in Table A1 and Section 4.1.

#### 2.1.2 Equipment Rinsate Blank

Disposable sampling equipment was used to collect soil samples; therefore, equipment rinsate blanks were not collected.

#### 2.2 XRF Quality Control Samples

This section summarizes the XRF QC samples evaluated during the DV of the XRF results.

#### 2.2.1 Energy Calibration Check

The energy calibration check determines whether the characteristic X-ray lines are shifting, which would indicate drift within the instrument. The requirement set forth in the QAPP was the performance of the preprogrammed energy calibration check on the equipment at the beginning of each working day. During the sampling event, the energy calibration check was performed at the beginning of each working day.

#### 2.2.2 Silicon Dioxide Standard

The SiO<sub>2</sub> standard, as provided by Niton, is a "clean" quartz or SiO<sub>2</sub> matrix that contains concentrations of selected analytes near or below the machine's lower limit of detection. Analysis results with the XRF instrument of this SiO<sub>2</sub> standard are used to monitor for cross contamination. The frequency requirement for SiO<sub>2</sub> standard sample analysis set forth in the QAPP is to complete analysis of this sample at the beginning of each day, once per every 20 samples, and at the end of each day's run sequence.

During the sampling event, the frequency requirement for  $SiO_2$  standard samples was met. Results are listed on Table A5.

The SiO<sub>2</sub> standard sample results were within the control limits.

#### 2.2.3 Calibration Check Samples

The CCSs helps check the accuracy of the XRF instrument and assess the stability and consistency of the analysis for the analytes of interest. The CCSs used were the Niton-provided Standard Reference Materials: NIST 2709a- Joaquin Soil (NIST 2709a) sample and a Resource Conservation and Recovery Act sample.

The frequency requirement for CCS analysis set forth in the QAPP is to complete analysis of at least 1 CCS at the start of each day, once per every 20 samples, and as the last analysis each day. The frequency requirement for CCS analyses was met. Results are listed on Table A5.

The CCS results were within the control limits. However, there was no CCS that had a known amount of mercury greater than the limit of detection (LOD) for mercury. Therefore, all detected mercury results have been qualified "J" and all non-detected

mercury results have been qualified "UJ." This resulted in 81 mercury results qualified "UJ" due to the lack of an appropriate CCS.

Qualification due to lack of an appropriate CCS standard are listed in Table A1.

#### 2.2.4 XRF Duplicate and XRF Replicate Samples

The XRF duplicate and XRF replicate samples help check the precision of the XRF sampling method and instrument. The XRF duplicate sample was analyzed by removing the sample bag from the analytical stand, kneading it once or twice, and analyzing a second time. The XRF replicate sample was analyzed immediately following the primary sample analysis by restarting the XRF to analyze the same sample a second time with the same soil in the XRF aperture.

The frequency requirement for XRF duplicate and XRF replicate samples set forth in the QAPP is the analysis of each sample once per every 20 samples (5%).

For the 81 natural XRF samples collected at the Site, 5 duplicate sample (6.2%) and 5 replicate sample (6.2%) were analyzed. Therefore, the frequency requirement for XRF duplicate and XRF replicate samples (5%) was met for the Site.

Table A6 contains the XRF duplicate and XRF replicate sample pair results with the parent sample results and the QC criteria assessment. If the results were outside the control limit, the parent sample and any sample considered sufficiently similar were qualified "J" if the result was detected and "UJ" if the result was not detected.

Qualifications due to XRF duplicate and XRF replicate sample results outside the control limit are listed in Table A1 and discussed in Section 4.1.1.

#### 2.3 Laboratory Quality Control Samples

The laboratory QC sample types vary depending on analytical method. The QC criteria used during DV to evaluate the applicable laboratory QC samples are listed in Attachment 3 and Section 3.6 of the QAPP.

The Stage 2A DV includes the evaluation of the following laboratory QC items as applicable per analytical method:

Holding Times. Preservation. Method Blanks (MB). Laboratory Control Sample (LCS) and LCS Duplicates (LCSD). Laboratory Duplicate Samples. Laboratory Matrix Spike (LMS) and LMS Duplicates (LMSD).

The analytical RLs produced by each laboratory were used to evaluate the laboratory duplicates. The laboratory MDLs were used for the data review and validation of laboratory MB samples.

The appropriate laboratory QC samples were analyzed with each sample group. Any qualifications required based on the laboratory QC sample results are detailed in the DV checklists (Attachment 1) and are listed in Table A1. Also refer to Section 4.1 and Section 4.2.

#### 3.0 LEVEL A/B ASSESSMENT SUMMARY

Data that meet the Level A and Level B criteria and are not qualified as estimated or rejected are assessed as enforcement quality data and can be used for all Superfund purposes and activities. Data that meet only the Level A criteria and are not rejected can be assessed as screening quality data.

Screening quality data can be used only for certain activities, which include engineering studies and design. Data that do not meet both the Level A and B criteria are designated as unusable. The Level A/B Assessment Checklist for all samples collected for the Site are included as Attachment 2. Sample collection information was recorded in the field logbook, including sample collection date, location, and collection method. This information was reviewed for the Level A/B criteria.

As shown in Attachment 2, all the samples met both Level A and Level B criteria. No data were designated screening quality or rejected based on the results of Level A/B assessment.

#### 4.0 PRECISION, ACCURACY, REPRESENTATIVENESS, COMPARABILITY, COMPLETENESS, AND SENSITIVITY DATA SUMMARY

This section provides the precision, accuracy, representativeness, comparability, completeness, and sensitivity assessment for the XRF and laboratory data generated from samples collected during the 2021 Site sampling event.

#### 4.1 Precision

Precision is the amount of scatter or variance that occurs in repeated measurements of a particular analyte.

#### 4.1.1 XRF Precision

The precision control limit used for XRF soil samples was a relative percent difference (RPD) less than 35% when both sample results were detections. For XRF data, the precision assessment is based on the RPD of XRF duplicate, XRF replicate, and field duplicate sample pairs. If an RPD was outside the control limit, the parent sample and samples considered sufficiently similar to the parent sample were qualified. No natural samples were considered sufficiently similar enough to each other to require additional qualifications based on the variability of soil matrices. If the parent sample was a duplicate sample, the duplicate sample's parent sample was considered sufficiently similar and was qualified when applicable.

There were 3 instances where the XRF duplicate pair results did not meet the control limit, 2 instances where the XRF replicate pair results did not meet the control limit, and 1 instance where the field duplicate pair results did not meet the control limit. This resulted in qualification of 4 natural data points due to XRF precision.

The natural samples qualified for poor XRF duplicate precision (DV Reason Code = D%), poor XRF replicate precision (DV Reason Code = R%), and poor field duplicate precision (DV Reason Code = FD) are listed below:

Field Sample ID	Method	Analyte	<b>DV Qualifier</b>	DV Reason Code
BPSOU-UR01SS15-110221-2	XRF	Lead	J	D%
BPSOU-UR01SS13-110221-3	XRF	Arsenic	J	D%, R%
BPSOU-UR01SS05-110321-2	XRF	Lead	J	D%, R%
BPSOU-UR01SS07-110321-1	XRF	Lead	J	FD

This resulted in 4 (1%) of the 486 natural XRF data points that did not meet the precision requirements, and 482 (99%) of the 486 natural XRF data points that did meet the precision requirements.

## 4.1.2 Laboratory Precision

Acceptance or rejection of precision measurements is based on the RPD of the laboratory and field duplicates. For example, perfect precision would be a 0% RPD between duplicate samples (both samples have the same analytical result) for results that are greater than 5 times the laboratory RL. For total metals analysis, when both results are greater than 5 times the RL, acceptable precision is an RPD of plus or minus 35% in soil samples. For samples with 1 or both results less than 5 times the RL (including non-detect), acceptable precision is met if the absolute difference between the 2 sample results is less than 2 times the RL. This precision requirement is from Section 2.4.1 of the CFRSSI QAPP (ARCO, 1992b).

There were two instances where the field duplicate pair results from Pace did not meet the control limit and one instance where the laboratory duplicate pair results did not meet the control limit. This resulted in the qualification of three natural data points due to field duplicate and laboratory duplicate precision.

The natural samples qualified for poor field duplicate precision (DV Reason Code = FD) and poor laboratory duplicate precision (DV Reason Code = D%) are listed below:

Field Sample ID	Method	Analyte	DV Qualifier	DV Reason Code
BPSOU-UR01SS02-110321-2	SW-846 6010D	Lead	J	FD
BPSOU-UR01SS25-110221-1	SW-846 6010D	Arsenic	J	FD
BPSOU-UR01SS19-110221-1	SW-846 7471B	Mercury	J	S%, D%

This resulted in 3 (1%) of the 364 natural laboratory data points that did not meet the precision requirements, and 361 (99%) of the 364 natural laboratory data points that did meet the precision requirements.

#### 4.2 Accuracy

Accuracy is the ability of the analytical procedure to determine the actual or known quantity of a particular substance in a sample.

#### 4.2.1 XRF Accuracy

For the XRF data, the  $SiO_2$  standard and CCS are used to assess accuracy. The control limit for these samples is summarized in Attachment 3. If a  $SiO_2$  standard or CCS result was outside the control limit, the natural sample results analyzed in the same run sequence were qualified.

If a  $SiO_2$  standard had a detected result greater than the control limit, the natural sample results analyzed in the same analytical run were qualified "J+" if the natural sample result was a detected result less than 10 times the  $SiO_2$  standard result.

All SiO<sub>2</sub> standard results were within control limits.

If the CCS result was outside the control limits summarized in Attachment 3, the natural sample results in the same analytical run as these CCS results were qualified as "J" for detected results or "UJ" for non-detected results.

All CCS analysis results were within the control limit.

For the XRF results, 486 (100%) of the 486 natural XRF data points did meet the accuracy requirements.

#### 4.2.2 Laboratory Accuracy

For the laboratory data, MB, LCS, LCSD, LMS, and LMSD were used to assess accuracy. The QC criteria used during DV for each QC sample are summarized in Attachment 3.

Laboratory blanks were analyzed to assess artifacts introduced during analyses that may affect the accuracy of the data. In accordance with the CFRSSI QAPP (ARCO, 1992b), a data point is qualified as "U" if it is less than 5 times an associated blank result (MB) that does not meet the control limit.

The percent recoveries (%R) of the LCS, LCSD, LMS, and LMSD are used to measure accuracy. The LCS and LCSD measure sample preparation and analysis accuracy. The LMS and LMSD measure the effect that the sample matrix has on accuracy. Perfect %R would be 100% (the analysis result is exactly the known concentration of the spike amount in the LMS, LMSD, LCS or LCSD).

For the 2021 Site sampling event, qualifications were made to natural samples due to LMS and/or LMSD results from Pace exceeding control limits. These qualifications are detailed in the DV checklists for each SDG in Attachment 1.2. There were no qualifications made due to the remaining indicators of accuracy.

There were 9 natural data points qualified due to an exceedance of the %R for the LMS and/or LMSD (DV Reason Code = S%) as listed below:

Field Sample ID	Method	Analyte	<b>DV Qualifier</b>	DV Reason Code
BPSOU-UR01SS13-110221-1	SW-846 7471B	Mercury	J-	S%
BPSOU-UR01SS27-110221-3	SW-846 6010D	Lead	J-	S%
BPSOU-UR01SS27-110221-3	SW-846 6010D	Zinc	J-	S%
BPSOU-UR01SS27-110221-3	SW-846 7471B	Mercury	J-	S%
BPSOU-UR01SS19-110221-1	SW-846 6010D	Lead	J-	S%
BPSOU-UR01SS19-110221-1	SW-846 6010D	Zinc	J-	S%
BPSOU-UR01SS19-110221-1	SW-846 7471B	Mercury	J	S%, D%
BPSOU-UR01SS03-110321-1	SW-846 6010D	Zinc	J-	S%
BPSOU-UR01SS03-110321-1	SW-846 7471B	Mercury	UJ	Pres, S%

This resulted in 9 (2%) of the 364 natural laboratory data points that did not meet the accuracy requirements, and 355 (98%) of the 364 natural laboratory data points that did meet the accuracy requirements.

#### 4.3 Representativeness

Representativeness is a qualitative parameter that is addressed through proper design of the sampling program. Samples for XRF analysis and laboratory analysis were collected in accordance with the QAPP and FSP.

The XRF and laboratory results were reviewed, and a Stage 2A DV completed. Based on information provided by Pace, the chain of custody requirements were met for the sample event. All samples were analyzed within the appropriate holding times. Fourteen natural laboratory data points were qualified due to not meeting the preservation requirement ( $<6^{\circ}$ C) for mercury (DV Reason Code = Pres) as listed below:

Field Sample ID	Method	Analyte	<b>DV Qualifier</b>	DV Reason Code
BPSOU-UR01SS03-110321-1	SW-846 7471B	Mercury	UJ	Pres, S%
BPSOU-UR01SS03-110321-2	SW-846 7471B	Mercury	UJ	Pres
BPSOU-UR01SS03-110321-3	SW-846 7471B	Mercury	UJ	Pres
BPSOU-UR01SS04-110321-1	SW-846 7471B	Mercury	UJ	Pres
BPSOU-UR01SS04-110321-2	SW-846 7471B	Mercury	UJ	Pres
BPSOU-UR01SS04-110321-3	SW-846 7471B	Mercury	UJ	Pres
BPSOU-UR01SS05-110321-1	SW-846 7471B	Mercury	J-	Pres
BPSOU-UR01SS05-110321-2	SW-846 7471B	Mercury	J-	Pres
BPSOU-UR01SS05-110321-3	SW-846 7471B	Mercury	J-	Pres
BPSOU-UR01SS06-110321-1	SW-846 7471B	Mercury	J-	Pres, <rl< td=""></rl<>
BPSOU-UR01SS06-110321-2	SW-846 7471B	Mercury	J-	Pres
BPSOU-UR01SS07-110321-1	SW-846 7471B	Mercury	J-	Pres, <rl< td=""></rl<>
BPSOU-UR01SS07-110321-2	SW-846 7471B	Mercury	UJ	Pres
BPSOU-UR01SS07-110321-3	SW-846 7471B	Mercury	UJ	Pres

These data points are considered usable with the recognition that the preservation requirement for mercury was not met. The representativeness goals were met.

## 4.4 Comparability

Comparability is assessed to determine if one set of data can be compared to another set of data. Comparisons are made by examining and comparing the laboratory and field methods used to acquire sample data for different distinct data sets. The data summarized in this report includes soil samples collected and analyzed by Pioneer and Pace.

## 4.4.1 XRF Comparability

The soil samples were collected using standard sampling methods and Pioneer SOPs. The sampling design, SOPs, and XRF methods are based on EPA and other industry standard practices and were documented in the field logbook. Sample collection was completed by professionals who were properly trained in using the SOPs and equipment. Proper sample handling was observed during sample collection and analysis.

Consequently, data from past and future soil sampling events at the Site using comparable sampling and XRF analysis may be used in concert with this data set.

## 4.4.2 Laboratory Comparability

The samples were collected using standard sampling methods and Pioneer SOPs. The sampling design, SOPs, and laboratory analytical methods are based on EPA and other industry standard practices and were documented in the field logbook. Sample collection was completed by professionals who were properly trained in using the SOPs and equipment. Proper chain of custody and sample handling were observed during sample collection, delivery to the laboratory, and analysis. The analytical laboratories performed the sample analysis using industry standard methods.

Consequently, data from past and future sampling events at the Site using comparable sampling and analytical methods may be used in concert with this data set.

#### 4.5 Completeness

Completeness is assessed to determine if enough valid data have been collected to meet the investigation needs. Completeness is assessed by comparing the number of valid sample results to the number of sample results planned for the investigation. The completeness target for this investigation was 95% or greater as designated in the CFRSSI QAPP (ARCO, 1992b).

The completeness for XRF and laboratory samples and results are summarized below:

Analysis Type	Collected Samples vs Planned Samples	Valid Data Points vs Total Data Points
XRF	100%	100%
Laboratory	100%	100%

#### 4.5.1 XRF Completeness

The QAPP and FSP include the planned soil sample locations and list the planned analytical techniques including XRF analysis.

Samples were collected at 27 sample locations during the 2021 Site sampling event. Sample station UR-01-SS-14 was not sampled due to third party ownership. An additional sample station, UR-01-OP-01, was sampled. The completeness for XRF data based on sample collection was 100%, and the completeness goal was met.

In total, 486 XRF data points were generated. All data points are considered usable because no results were rejected. The 81 XRF samples collected were analyzed by XRF for arsenic, cadmium, copper, lead, mercury, and zinc. Therefore, the completeness for XRF data based on sample analysis was 100% and the completeness goal was met.

#### 4.5.2 Laboratory Completeness

The requirement for confirmation samples sent to the laboratory per the QAPP is at a rate of 1 per 10 natural XRF samples (10%), with additional samples sent to the laboratory for confirmation if the field results show the contaminant of concern (COC) levels at 35% above or 35% below established action/screening levels to limit decision errors.

For the 2021 Site sampling event, 52 of the 81 natural samples collected and analyzed by XRF were sent to Pace for analysis (64%). All natural samples collected with XRF results requiring confirmation were sent to Pace for analysis. The frequency requirement for the confirmation samples sent to the laboratory for analysis were met. Therefore, the completeness for laboratory samples based on sample collection was 100% and the completeness goal was met.

In total, 364 natural laboratory data points were generated by the sampling event. The 52 laboratory samples collected were analyzed for arsenic, cadmium, copper, lead, mercury, zinc, and percent moisture. All the natural data points were usable as no sample results were rejected. Therefore, the completeness for laboratory data based on sample analysis was 100%, and the completeness goal was met.

#### 4.6 Sensitivity

Sensitivity is a quantitative measure and is evaluated by comparing the detection limit to the project-specific sensitivity requirements.

#### 4.6.1 XRF Sensitivity

The non-detected XRF results were reported as less than the LOD associated with each result.

The QAPP does not specify sensitivity requirements for XRF analyses; therefore, the action/screening levels in the QAPP were used to evaluate sensitivity for each analyte. The QAPP specified that samples must be sent to the laboratory for confirmation if the field results show the COC levels at 35% above or 35% below established action/screening levels to limit decision errors. Therefore, a value of 35% below the BPSOU Soil Screening Criteria for Storm Water COCs listed on Table 2 of the QAPP were used to evaluate sensitivity because they are less than the BPSOU Soil Action Level for Human Health listed in Table 1 of the QAPP. The required detection limit for XRF results is summarized below:

Analyte	Criteria	Units	Action/Screening Level	35% below
Arsenic	Storm Water	mg/kg	200	130
Cadmium	Storm Water	mg/kg	20	13
Copper	Storm Water	mg/kg	1,000	650
Lead	Storm Water	mg/kg	1,000	650
Mercury	Storm Water	mg/kg	10	6.5
Zinc	Storm Water	mg/kg	1,000	650

mg/kg: milligrams per kilogram.

The detection limit for the non-detected XRF results was less than 35% below the minimum action/screening level for each analyte except for the following results:

Laboratory Sample ID	Field Sample ID	Method	Analyte	Units	Result ( <lod)< th=""></lod)<>
P_20211102_98052_151	BPSOU-UR01SS25-110221-2	XRF	Mercury	mg/kg	<6.58
P_20211102_98052_155	BPSOU-UR01SS27-110221-3	XRF	Mercury	mg/kg	<6.61
P_20211102_98052_156	BPSOU-UR01SS23-110221-1	XRF	Mercury	mg/kg	<7.28
P_20211102_98052_157	BPSOU-UR01SS23-110221-2	XRF	Mercury	mg/kg	<8.15
P_20211102_98052_158	BPSOU-UR01SS23-110221-3	XRF	Mercury	mg/kg	<7.77
P_20211102_98052_160	BPSOU-UR01SS26-110221-2	XRF	Mercury	mg/kg	<6.83
P_20211102_98052_161	BPSOU-UR01SS26-110221-3	XRF	Mercury	mg/kg	<6.81
P_20211102_98052_165	BPSOU-UR01SS21-110221-1	XRF	Mercury	mg/kg	<7.2
P_20211102_98052_166	BPSOU-UR01SS21-110221-2	XRF	Mercury	mg/kg	<6.67
P_20211102_98052_167	BPSOU-UR01SS21-110221-3	XRF	Mercury	mg/kg	<7.08
P_20211103_98052_188	BPSOU-UR01SS22-110221-2	XRF	Mercury	mg/kg	<6.79
P_20211103_98052_193	BPSOU-UR01SS19-110221-1	XRF	Mercury	mg/kg	<7.01
P_20211103_98052_194	BPSOU-UR01SS19-110221-2	XRF	Mercury	mg/kg	<7.8
P_20211103_98052_195	BPSOU-UR01SS19-110221-3	XRF	Mercury	mg/kg	<8.57
P_20211103_98052_196	BPSOU-UR01SS18-110221-1	XRF	Mercury	mg/kg	<6.63
P_20211103_98052_197	BPSOU-UR01SS18-110221-2	XRF	Mercury	mg/kg	<6.78
P_20211103_98052_198	BPSOU-UR01SS18-110221-3	XRF	Mercury	mg/kg	<7.06
P_20211103_98052_203	BPSOU-UR01SS16-110221-2	XRF	Mercury	mg/kg	<6.9
P_20211103_98052_204	BPSOU-UR01SS16-110221-3	XRF	Mercury	mg/kg	<6.96
P_20211103_98052_205	BPSOU-UR01SS15-110221-1	XRF	Mercury	mg/kg	<6.67
P_20211103_98052_206	BPSOU-UR01SS15-110221-2	XRF	Mercury	mg/kg	<6.95
P_20211103_98052_214	BPSOU-UR01SS15-110221-3	XRF	Mercury	mg/kg	<6.88
P_20211103_98052_218	BPSOU-UR01SS08-110221-1	XRF	Mercury	mg/kg	<6.81

Laboratory Sample ID	Field Sample ID	Method	Analyte	Units	Result ( <lod)< th=""></lod)<>
P_20211103_98052_219	BPSOU-UR01SS08-110221-2	XRF	Mercury	mg/kg	<6.93
P_20211103_98052_220	BPSOU-UR01SS08-110221-3	XRF	Mercury	mg/kg	<8.86
P_20211103_98052_225	BPSOU-UR01SS11-110221-2	XRF	Mercury	mg/kg	<7.11
P_20211103_98052_226	BPSOU-UR01SS11-110221-3	XRF	Mercury	mg/kg	<7.11
P_20211103_98052_228	BPSOU-UR01SS10-110221-2	XRF	Mercury	mg/kg	<6.61
P_20211103_98052_229	BPSOU-UR01SS10-110221-3	XRF	Mercury	mg/kg	<6.57
P_20211103_98052_230	BPSOU-UR01SS13-110221-1	XRF	Mercury	mg/kg	<7.93
P_20211103_98052_231	BPSOU-UR01SS13-110221-2	XRF	Mercury	mg/kg	<7.23
P_20211103_98052_232	BPSOU-UR01SS13-110221-3	XRF	Mercury	mg/kg	<6.51
P_20211103_98052_241	BPSOU-UR01SS12-110221-2	XRF	Mercury	mg/kg	<6.81
P_20211103_98052_244	BPSOU-UR01SS01-110321-2	XRF	Mercury	mg/kg	<6.78
P_20211103_98052_245	BPSOU-UR01SS01-110321-3	XRF	Mercury	mg/kg	<7.09
P_20211103_98052_248	BPSOU-UR01SS02-110321-2	XRF	Mercury	mg/kg	<7.26
P_20211103_98052_251	BPSOU-UR01SS03-110321-1	XRF	Mercury	mg/kg	<6.91
P_20211103_98052_252	BPSOU-UR01SS03-110321-2	XRF	Mercury	mg/kg	<6.89
P_20211103_98052_253	BPSOU-UR01SS03-110321-3	XRF	Mercury	mg/kg	<6.81
P_20211103_98052_254	BPSOU-UR01SS04-110321-1	XRF	Mercury	mg/kg	<7.48
P_20211103_98052_255	BPSOU-UR01SS04-110321-2	XRF	Mercury	mg/kg	<6.73
P_20211103_98052_256	BPSOU-UR01SS04-110321-3	XRF	Mercury	mg/kg	<6.96
P_20211103_98052_257	BPSOU-UR01SS05-110321-1	XRF	Mercury	mg/kg	<6.69
P_20211103_98052_258	BPSOU-UR01SS05-110321-2	XRF	Mercury	mg/kg	<7.21
P_20211103_98052_266	BPSOU-UR01SS05-110321-3	XRF	Mercury	mg/kg	<7.21
P_20211103_98052_267	BPSOU-UR01SS07-110321-1	XRF	Mercury	mg/kg	<6.55
P_20211103_98052_269	BPSOU-UR01SS07-110321-2	XRF	Mercury	mg/kg	<7.24
P_20211103_98052_270	BPSOU-UR01SS07-110321-3	XRF	Mercury	mg/kg	<6.87
P_20211103_98052_271	BPSOU-UR01SS06-110321-1	XRF	Mercury	mg/kg	<6.64
P_20211103_98052_273	BPSOU-UR01SS06-110321-2	XRF	Mercury	mg/kg	<7.69

mg/kg: milligrams per kilogram. LOD: limit of detection.

These data points are considered usable with the recognition that the LOD for the non-detected results is higher than 35% below the lowest action/screening level.

#### 4.6.2 Laboratory Sensitivity

The non-detected laboratory results from Pace were reported as less than the adjusted MDLs for each sample.

To evaluate sensitivity, the proposed MDLs and RLs listed in Table 3 of the QAPP for arsenic, cadmium, copper, lead, zinc, and mercury were compared to the adjusted MDL for non-detected results.

The adjusted MDL for the non-detected laboratory results were less than proposed MDLs in the QAPP except for the following results:

Laborator Sample ID	Field Sample	ID Method	Analyte	Dilution Factor	Units	Result ( <mdl)< th=""><th>QAPP MDL</th><th>QAPP RL</th></mdl)<>	QAPP MDL	QAPP RL
105872720	1 BPSOU-UR015 110321-1	503- SW-846 7471B	Mercury	1	mg/kg	<0.01	0.00931	0.02

The adjusted MDL for this non-detect mercury result was greater than the proposed MDL; however, it was less than the proposed RL. The usability of the data is not affected by this instance of the laboratory MDL not meeting the QAPP MDLs.

#### 4.7 Overall Data Summary

The following list shows an overall summary of the validation performed on the data generated by Pioneer for the samples collected during the 2021 Site sampling event.

Analysis –	Total I	Natural	Level A/B	DV Qual J, J+, J-, or UJ	DV Qual R	DV Qual U or A	Enforcement Quality	Screening Quality	Rejected
Туре	Total Natura Samples Data Points 81 486 52 364	Data Points	A/B	Data Points	Data Points	Data Points	Data Points (% of total)	Data Points (% of Total)	Data Points (% of Total)
XRF	81	486	В	85	0	0	401 (83%)	85 (17%)	0 (0%)
Pace	52	364	В	24	0	14	340 (93%)	24 (7%)	0 (0%)

#### **5.0 REFERENCES**

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- ARCO, 1992a. Clark Fork River Superfund Site Investigations Data Management/Data Validation Plan, Atlantic Richfield Company, 1992.
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- EPA, 2009. Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use. U.S. Environmental Protection Agency, January 2009.
- EPA, 2020. U.S. Environmental Protection Agency National Functional Guidelines for Inorganic Superfund Data Review, November 2020.
- ThermoFisher Scientific, 2014. Niton XL3 Mining QC Sheet, Document: 140-00072, March 2014.

#### **TABLES**

- Table A1. Natural Sample Results with Laboratory Qualifiers; Data Validation Qualifiers; Enforcement, Screening, and Rejected Classifications; and Data Validation Reason Codes
- Table A2. Field Duplicate Pair Samples with Results, Laboratory Qualifiers, Data Validation Qualifiers, Data Validation Reason Codes, and QC Criteria Assessment

Table A3. Sample Identification

 Table A4. Laboratory Qualifiers; Data Validation Qualifiers; Enforcement, Screening, and Rejected Codes; and Reason Codes Definitions

Table A5. XRF SiO<sub>2</sub> Standard and Calibration Check Sample Results

Table A6. XRF Duplicate and Replicate Sample Results and QC Criteria Assessment

#### Table A1. Natural Sample Results with Laboratory Qualifiers; Data Validation Qualifiers; Enforcement, Screening, and Rejected Classifications; and Data Validation Reason Codes

	Station (Depth	Interval)		UR-01-	-OP-01(0-2	2)		UR-01-	-OP-01	(2-6)			UR-01-0	OP-01(6	5-12)			UR-01-8	SS-01(	0-2)			UR-01-	SS-01(2	6)			UR-01-5	SS-01(6	5-12)		l	UR-01-S	SS-02(0	)-2)	
	Field Sa	mple ID	BPS	OU-UR(	)1OP01-11	0221-1	BPS	OU-UR0	10P01	-1102	21-2	BPSC	OU-UR0	10P01-	-1102	21-3	BPSO	DU-UR01	SS01-	1103	321-1	BPSOU-UR01SS01-110321-2				-2	BPSOU-UR01SS01-110321-3					BPSC	OU-UR01	SS02-1	11032	1-1
	Lab Sa	mple ID			N/A				N/A				I	N/A				Ν	J/A			10586277012				10586277013					N/A					
	Sam	ple Date		11.	/2/2021			11/	/2/2021	l		11/2/2021					11/3/2021						11/	3/2021				11/	3/2021			11/3/2021				
	Samj	ple Type		N	Vatural			N	latural			Natural					Na	ıtural				N	ıtural				N	atural				Na	tural			
Method	Analyte	Units	Result	Lab Qual	DV Qual S/	E Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/F	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code
XRF	Arsenic	mg/kg	10.69		F		14.27			Е		12.69			Е		<7.4	<lod< td=""><td></td><td>Е</td><td></td><td>10.58</td><td></td><td></td><td>Е</td><td></td><td>9.86</td><td></td><td></td><td>Е</td><td></td><td>8.09</td><td></td><td></td><td>Е</td><td></td></lod<>		Е		10.58			Е		9.86			Е		8.09			Е	
XRF	Cadmium	mg/kg	<6.95	<lod< td=""><td>F</td><td></td><td>&lt;6.99</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.07</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.4</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.59</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.88</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.44</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	F		<6.99	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.07</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.4</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.59</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.88</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.44</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<7.07	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.4</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.59</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.88</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.44</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<7.4	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.59</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.88</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.44</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<7.59	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.88</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.44</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<>		Е		<7.88	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.44</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<>		Е		<7.44	<lod< td=""><td></td><td>Е</td><td></td></lod<>		Е	
XRF	Copper	mg/kg	46.72		E		26.06			Е		43.00			Е		70.86			Е		50.41			Е		79.01			Е		79.07			Е	
XRF	Lead	mg/kg	12.97		E		11.88			Е		19.53			Е		48.95			Е		30.97			Е		26.26			Е		14.14			Е	
XRF	Mercury	mg/kg	<5.87	<lod< td=""><td>UJ S</td><td>CX</td><td>&lt;6.18</td><td><lod< td=""><td>UJ</td><td>S</td><td>СХ</td><td>&lt; 6.12</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.38</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.78</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.09</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.47</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ S	CX	<6.18	<lod< td=""><td>UJ</td><td>S</td><td>СХ</td><td>&lt; 6.12</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.38</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.78</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.09</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.47</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	СХ	< 6.12	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.38</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.78</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.09</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.47</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.38	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.78</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.09</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.47</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.78	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.09</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.47</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<>	UJ	S	CX	<7.09	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.47</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<>	UJ	S	CX	<6.47	<lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<>	UJ	S	CX
XRF	Zinc	mg/kg	74.51		E		73.98			Е		77.1			Е		130.86			Е		138.68			Е		187.34			Е		102.78			Е	
ASTM D2974	Moisture, Percent	%																				5.0	N2		Е		3.7	N2		Е						
SW-846 6010D	Arsenic	mg/kg																				4.7			Е		3.4			Е						
SW-846 6010D	Cadmium	mg/kg																				0.19			Е		0.16			Е						
SW-846 6010D	Copper	mg/kg																				40.1			Е		42.1			Е						
SW-846 6010D	Lead	mg/kg																				22.7			Е		24.7			Е						
SW-846 6010D	Zinc	mg/kg																				70.3			Е		75.5			Е						
SW-846 7471B	Mercury	mg/kg																				< 0.0081	U		Е		0.0098	J	А	Е	<rl< td=""><td></td><td></td><td></td><td></td><td></td></rl<>					

Notes:

Depth intervals are inches below ground surface.

Qualification (Qual) and Reason Codes are defined in Table A4.

< - Not detected at the detection limit.

#### Abbreviations:

mg/kg - milligram per kilogram

#### Table A1. Natural Sample Results with Laboratory Qualifiers; Data Validation Qualifiers; Enforcement, Screening, and Rejected Classifications; and Data Validation Reason Codes

	Station (Depth	Interval)		UR-01-	SS-02(	(2-6)			UR-01-5	SS-02(6	5-12)			UR-01	-SS-03(	(0-2)			UR-01-5	S-03(2-6	)		UR-01-5	S-03(6-	12)			UR-01-5	S-04(0-2	)		UR-01-SS-04(2-6)				
	Field Sa	mple ID	BPSC	OU-UR0	1SS02-	-11032	21-2	BPS	OU-UR0	1SS02-	-11032	1-3	BPS	OU-UR	018803	-1103	321-1	BPSC	U-UR01	SS03-11	)321-2	BPS	BPSOU-UR01SS03-110321-3					BPSOU-UR01SS04-110321-1					1SS04-	-11032	1-2	
	Lab Sa	mple ID		1058	639601	12			]	N/A				105	872720	)1			10587	272002			10587272003					10587272004					727200	)5		
	Sam	ple Date		11/.	3/2021				11/	3/2021			11/3/2021					11/3/2021					11/.	3/2021				11/3	/2021			11/3/2021				
	Sam	ple Type		Na	atural				N	atural			Natural					Na	tural			Na	atural				Na	tural			Ν	atural				
Method	Analyte	Units	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result		DV Qual S	E Reaso	Recult	Lab Qual	DV Qual	S/H	eason Code	Result	Lab Qual	DV Qual S	E Reason Code	Recult	Lab Qual	DV Qual	S/F	Reason Code	
XRF	Arsenic	mg/kg	<5.5	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;5.5</td><td><lod< td=""><td></td><td>Е</td><td></td><td>10.51</td><td></td><td></td><td>Е</td><td></td><td>6.62</td><td></td><td></td><td>Ξ</td><td>7.66</td><td></td><td></td><td>Е</td><td></td><td>&lt;6.35</td><td><lod< td=""><td>]</td><td>Ξ</td><td>10.43</td><td></td><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<>		Е		<5.5	<lod< td=""><td></td><td>Е</td><td></td><td>10.51</td><td></td><td></td><td>Е</td><td></td><td>6.62</td><td></td><td></td><td>Ξ</td><td>7.66</td><td></td><td></td><td>Е</td><td></td><td>&lt;6.35</td><td><lod< td=""><td>]</td><td>Ξ</td><td>10.43</td><td></td><td></td><td>Е</td><td></td></lod<></td></lod<>		Е		10.51			Е		6.62			Ξ	7.66			Е		<6.35	<lod< td=""><td>]</td><td>Ξ</td><td>10.43</td><td></td><td></td><td>Е</td><td></td></lod<>	]	Ξ	10.43			Е		
XRF	Cadmium	mg/kg	10.89			Е		<7.62	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.71</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.73</td><td><lod< td=""><td></td><td>Ξ</td><td>&lt;7.83</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.58</td><td><lod< td=""><td>]</td><td>Ξ</td><td>&lt;7.89</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<7.71	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.73</td><td><lod< td=""><td></td><td>Ξ</td><td>&lt;7.83</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.58</td><td><lod< td=""><td>]</td><td>Ξ</td><td>&lt;7.89</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<7.73	<lod< td=""><td></td><td>Ξ</td><td>&lt;7.83</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.58</td><td><lod< td=""><td>]</td><td>Ξ</td><td>&lt;7.89</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<>		Ξ	<7.83	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.58</td><td><lod< td=""><td>]</td><td>Ξ</td><td>&lt;7.89</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<>		Е		<7.58	<lod< td=""><td>]</td><td>Ξ</td><td>&lt;7.89</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<>	]	Ξ	<7.89	<lod< td=""><td></td><td>Е</td><td></td></lod<>		Е		
XRF	Copper	mg/kg	55.18			Е		67.44			Е		107.65			Е		73.47		]	Ξ	81.10			Е		77.83		]	Ξ	85.53			Е		
XRF	Lead	mg/kg	13.06			Е		17.77			Е		13.88			Е		21.28		]	Ξ	26.12			Е		22.86		]	Ξ	16.84			Е		
XRF	Mercury	mg/kg	<7.26	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt; 6.45</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.91</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.89</td><td><lod< td=""><td>UJ</td><td>S CX</td><td>&lt; 6.81</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.48</td><td><lod< td=""><td>UJ</td><td>S CX</td><td>&lt;6.73</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	< 6.45	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.91</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.89</td><td><lod< td=""><td>UJ</td><td>S CX</td><td>&lt; 6.81</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.48</td><td><lod< td=""><td>UJ</td><td>S CX</td><td>&lt;6.73</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.91	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.89</td><td><lod< td=""><td>UJ</td><td>S CX</td><td>&lt; 6.81</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.48</td><td><lod< td=""><td>UJ</td><td>S CX</td><td>&lt;6.73</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.89	<lod< td=""><td>UJ</td><td>S CX</td><td>&lt; 6.81</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.48</td><td><lod< td=""><td>UJ</td><td>S CX</td><td>&lt;6.73</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S CX	< 6.81	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.48</td><td><lod< td=""><td>UJ</td><td>S CX</td><td>&lt;6.73</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<>	UJ	S	CX	<7.48	<lod< td=""><td>UJ</td><td>S CX</td><td>&lt;6.73</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<>	UJ	S CX	<6.73	<lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<>	UJ	S	CX	
XRF	Zinc	mg/kg	101.97			Е		123.52			Е		135.54			Е		165.35		]	Ξ	153.01			Е	1	182.68		]	Ξ	120.67			Е		
ASTM D2974	Moisture, Percent	%	4.6	N2		Е							26.2	N2		Е		15.4	N2	1	Ξ	15.2	N2		Е		7.9	N2	]	Ξ	6.5	N2		Е		
SW-846 6010D	Arsenic	mg/kg	2.4			Е							3.7			Е		9.2		1	Ξ	2.3			Е		2.8		]	Ξ	3.0			Е		
SW-846 6010D	Cadmium	mg/kg	0.11	J	А	Е	<rl< td=""><td></td><td></td><td></td><td></td><td></td><td>0.23</td><td></td><td></td><td>Е</td><td></td><td>0.24</td><td></td><td>J</td><td>Ξ</td><td>0.18</td><td></td><td></td><td>Е</td><td></td><td>0.18</td><td></td><td>J</td><td>Ξ</td><td>0.13</td><td>J</td><td>Α</td><td>Е</td><td><rl< td=""></rl<></td></rl<>						0.23			Е		0.24		J	Ξ	0.18			Е		0.18		J	Ξ	0.13	J	Α	Е	<rl< td=""></rl<>	
SW-846 6010D	Copper	mg/kg	41.5			Е							68.6			Е		63.1			Ξ	39.5			Е		49.7		J	Ξ	61.4			Е		
SW-846 6010D	Lead	mg/kg	6.1		J	S	FD						13.8			Е		10.7			Ξ	8.3			Е		16.9		J	Ξ	13.5			Е		
SW-846 6010D	Zinc	mg/kg	46.1			Е							71.7	M1	J-	S	S%	92.0			Ξ	65.7			Е		73.6		j	Ξ	59.0			Е		
SW-846 7471B	Mercury	mg/kg	0.010	J	А	Е	<rl< td=""><td></td><td></td><td></td><td></td><td></td><td>&lt; 0.01</td><td>U,M1</td><td>UJ</td><td>S</td><td>Pres, S%</td><td>&lt; 0.0088</td><td>U</td><td>UJ</td><td>S Pres</td><td>&lt; 0.0088</td><td>U</td><td>UJ</td><td>S</td><td>Pres &lt;</td><td>&lt;0.0088</td><td>U</td><td>UJ</td><td>S Pres</td><td>&lt; 0.0084</td><td>U</td><td>UJ</td><td>S</td><td>Pres</td></rl<>						< 0.01	U,M1	UJ	S	Pres, S%	< 0.0088	U	UJ	S Pres	< 0.0088	U	UJ	S	Pres <	<0.0088	U	UJ	S Pres	< 0.0084	U	UJ	S	Pres	

Notes:

Depth intervals are inches below ground surface.

Qualification (Qual) and Reason Codes are defined in Table A4.

< - Not detected at the detection limit.

Abbreviations:

mg/kg - milligram per kilogram

	Station (Depth	Interval)		UR-01-S	S-04(6-	-12)			UR-01-	-SS-05	(0-2)			UR-01	-SS-05	(2-6)			UR-01-5	S-05(6-	12)			UR-01	-SS-06	(0-2)			UR-01-	SS-06(2	2-6)			UR-01-S	S-06(6	j-12)	
	Field Sa	mple ID	BPSC	OU-UR01	SS04-1	1032	1-3	BPS	OU-UR	01SS05	5-11032	21-1	BPS	OU-UR	018805	-1103	321-2	BPS	OU-UR0	ISS05-1	10321	-3	BPS	OU-UR	)1SS06	-1103	21-1	BPSC	OU-UR0	1SS06-1	11032	1-2	BPSO	OU-UR01	SS06-	110321	-3
	Lab Sa	mple ID		10587	272006	5			1058	72720	07			1058	872720	)8			1058	272009				1058	372720	10			1058	7272012	2			١	J/A		
	Sam	ple Date		11/3	8/2021				11/	/3/2021	1			11	/3/2021				11/.	8/2021				11	/3/2021				11/.	3/2021				11/3	3/2021		
	Sam	ple Type		Na	tural				Ν	atural				Ν	Jatural				Na	itural				N	latural				Na	atural				Na	tural		
Method	Analyte	Units	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	-S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	2/61	leason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code
XRF	Arsenic	mg/kg	6.06			Е		15.77			Е		<14.42	<lod< td=""><td></td><td>Е</td><td></td><td>13.15</td><td></td><td></td><td>Е</td><td></td><td>8.01</td><td></td><td></td><td>Е</td><td></td><td>7.51</td><td></td><td></td><td>Е</td><td></td><td>&lt;5.84</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<>		Е		13.15			Е		8.01			Е		7.51			Е		<5.84	<lod< td=""><td></td><td>Е</td><td></td></lod<>		Е	
XRF	Cadmium	mg/kg	8.48			Е		<7.52	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.84</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.64</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.31</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;8.13</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.74</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<7.84	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.64</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.31</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;8.13</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.74</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<7.64	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.31</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;8.13</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.74</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<7.31	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;8.13</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.74</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<>		Е		<8.13	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.74</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<>		Е		<7.74	<lod< td=""><td></td><td>Е</td><td></td></lod<>		Е	
XRF	Copper	mg/kg	62.84			Е		74.76			Е		78.79			Е		82.37			Е		65.65			Е		50.27			Е		66.72			Е	
XRF	Lead	mg/kg	11.53			Е		44.23			Е		211.17		J	S	D%, R%	60.60			Е		15.37			Е		13.98			Е		21.19			Е	
XRF	Mercury	mg/kg	<6.96	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.69</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.21</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.21</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.64</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.69</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.45</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.69	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.21</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.21</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.64</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.69</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.45</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<7.21	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.21</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.64</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.69</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.45</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<7.21	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.64</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.69</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.45</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.64	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.69</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.45</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<>	UJ	S	CX	<7.69	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.45</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<>	UJ	S	CX	<6.45	<lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<>	UJ	S	CX
XRF	Zinc	mg/kg	114.34			Е		225.69			Е		287.40			Е		276.32			E		108.76			Е		110.24			Е		112.25			Е	
ASTM D2974	Moisture, Percent	%	6.9	N2		Е		8.8	N2		Е		5.1	N2		Е		18.4	N2		Е		7.1	N2		Е		5.4	N2		Е						
SW-846 6010D	Arsenic	mg/kg	1.7			Е		5.2			Е		4.3			Е		4.4			Е		3.2			Е		3.4			Е						
SW-846 6010D	Cadmium	mg/kg	0.065	J	Α	Е	<rl< td=""><td>0.56</td><td></td><td></td><td>Е</td><td></td><td>0.40</td><td></td><td></td><td>Е</td><td></td><td>0.52</td><td></td><td></td><td>E</td><td></td><td>0.14</td><td>J</td><td>Α</td><td>Е</td><td><rl< td=""><td>0.18</td><td></td><td></td><td>Е</td><td></td><td></td><td></td><td></td><td></td><td></td></rl<></td></rl<>	0.56			Е		0.40			Е		0.52			E		0.14	J	Α	Е	<rl< td=""><td>0.18</td><td></td><td></td><td>Е</td><td></td><td></td><td></td><td></td><td></td><td></td></rl<>	0.18			Е						
SW-846 6010D	Copper	mg/kg	35.9			Е		41.8			Е		42.1			Е		37.8			E		40.0			Е		38.2			Е						
SW-846 6010D	Lead	mg/kg	3.9			Е		56.2			Е		58.7			Е		40.6			E		22.4			Е		9.1			Е						
SW-846 6010D	Zinc	mg/kg	42.8			Е		158			Е		152			Е		141			E		53.5			Е		49.9			Е						
SW-846 7471B	Mercury	mg/kg	< 0.009	U	UJ	S	Pres	0.24		J-	S	Pres	0.35		J-	S	Pres	0.84		J-	S	Pres	0.016	J	J-	S	Pres, <rl< td=""><td>0.022</td><td></td><td>J-</td><td>S</td><td>Pres</td><td></td><td></td><td></td><td></td><td></td></rl<>	0.022		J-	S	Pres					

Notes:

Depth intervals are inches below ground surface.

Qualification (Qual) and Reason Codes are defined in Table A4.

< - Not detected at the detection limit.

#### Abbreviations:

	Station (Depth	Interval)		UR-01	-SS-07	7(0-2)			UR-01-3	SS-07(	2-6)			UR-01-S	S-07(6	-12)			UR-01-5	S-08(0	-2)			UR-01-5	SS-08(2	2-6)			UR-01-S	S-08(6	-12)	
	Field Sa	ample ID	BPS	SOU-UR	01SS0	7-1103	321-1	BPSC	U-UR0	1SS07-	11032	21-2	BPSC	U-UR0	ISS07-	11032	21-3	BPSC	U-UR01	SS08-	1022	21-1	BPSC	OU-UR0	ISS08-	11022	21-2	BPSC	OU-UR0	1SS08-1	11022	1-3
	Lab Sa	ample ID		105	872720	)13			1058	727201	4			10587	727301	4			10586	39600	Ð			10586	539601	0			10586	6396011	1	
	Sam	ple Date		11	/3/202	1			11/3	3/2021				11/3	3/2021				11/2	/2021				11/2	2/2021				11/2	2/2021		
	Sam	ple Type		Ν	Natural				Na	atural				Na	ıtural				Na	tural				Na	ıtural				Na	atural		
Method	Analyte	Units	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code
XRF	Arsenic	mg/kg	7.57			Е		6.36			Е		7.30			Е		10.37			Е		9.96			Е		<7.41	<lod< td=""><td></td><td>Е</td><td></td></lod<>		Е	
XRF	Cadmium	mg/kg	<7.5	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.85</td><td><lod< td=""><td></td><td>Е</td><td></td><td>9.19</td><td></td><td></td><td>Е</td><td></td><td>&lt;7.46</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.76</td><td><lod< td=""><td></td><td>Е</td><td></td><td>9.53</td><td></td><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<7.85	<lod< td=""><td></td><td>Е</td><td></td><td>9.19</td><td></td><td></td><td>Е</td><td></td><td>&lt;7.46</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.76</td><td><lod< td=""><td></td><td>Е</td><td></td><td>9.53</td><td></td><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<>		Е		9.19			Е		<7.46	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.76</td><td><lod< td=""><td></td><td>Е</td><td></td><td>9.53</td><td></td><td></td><td>Е</td><td></td></lod<></td></lod<>		Е		<7.76	<lod< td=""><td></td><td>Е</td><td></td><td>9.53</td><td></td><td></td><td>Е</td><td></td></lod<>		Е		9.53			Е	
XRF	Copper	mg/kg	63.66			Е		55.93			Е		58.12			Е		76.26			Е		63.45			Е		31.49			Е	
XRF	Lead	mg/kg	17.71		J	S	FD	9.67			Е		17.27			Е		19.95			Е		24.03			Е		28.02			Е	
XRF	Mercury	mg/kg	< 6.55	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.24</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.87</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.81</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.93</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;8.86</td><td><lod< td=""><td>UJ</td><td>S</td><td>СХ</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<7.24	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.87</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.81</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.93</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;8.86</td><td><lod< td=""><td>UJ</td><td>S</td><td>СХ</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.87	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.81</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.93</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;8.86</td><td><lod< td=""><td>UJ</td><td>S</td><td>СХ</td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.81	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.93</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;8.86</td><td><lod< td=""><td>UJ</td><td>S</td><td>СХ</td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.93	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;8.86</td><td><lod< td=""><td>UJ</td><td>S</td><td>СХ</td></lod<></td></lod<>	UJ	S	CX	<8.86	<lod< td=""><td>UJ</td><td>S</td><td>СХ</td></lod<>	UJ	S	СХ
XRF	Zinc	mg/kg	123.77			Е		100.93			Е		112.12			Е		120.96			Е		113.87			Е		101.85			Е	
ASTM D2974	Moisture, Percent	%	5.1	N2		Е		3.7	N2		Е		7.6	N2		Е		12.0	N2		Е		4.6	N2		Е		10.7	N2		Е	
SW-846 6010D	Arsenic	mg/kg	2.0			Е		1.5			Е		2.3			Е		3.5			Е		4.2			Е		4.1			Е	
SW-846 6010D	Cadmium	mg/kg	0.17			Е		0.18			Е		0.093	J		Е		0.12	J	А	Е	<rl< td=""><td>0.14</td><td>J</td><td>А</td><td>Е</td><td><rl< td=""><td>0.40</td><td></td><td></td><td>Е</td><td></td></rl<></td></rl<>	0.14	J	А	Е	<rl< td=""><td>0.40</td><td></td><td></td><td>Е</td><td></td></rl<>	0.40			Е	
SW-846 6010D	Copper	mg/kg	31.2			Е		29.5			Е		25.9			Е		41.7			Е		32.6			Е		40.1			Е	
SW-846 6010D	Lead	mg/kg	9.2			Е		5.8			Е		4.3			Е		18.9			Е		11.7			Е		12.1			Е	
SW-846 6010D	Zinc	mg/kg	55.5			Е		46.6			Е		38.6			Е		58.9			Е		51.6			Е		73.9			Е	
SW-846 7471B	Mercury	mg/kg	0.013	J	J-	S	Pres, <rl< td=""><td>&lt; 0.0084</td><td>U</td><td>UJ</td><td>S</td><td>Pres</td><td>&lt; 0.0083</td><td>U</td><td>UJ</td><td>S</td><td>Pres</td><td>0.019</td><td></td><td></td><td>Е</td><td></td><td>0.025</td><td></td><td></td><td>Е</td><td></td><td>0.012</td><td>J</td><td>А</td><td>Е</td><td><rl< td=""></rl<></td></rl<>	< 0.0084	U	UJ	S	Pres	< 0.0083	U	UJ	S	Pres	0.019			Е		0.025			Е		0.012	J	А	Е	<rl< td=""></rl<>

Notes:

Depth intervals are inches below ground surface.

Qualification (Qual) and Reason Codes are defined in Table A4.

< - Not detected at the detection limit.

Abbreviations:

	Station (Depth	Interval)		UR-01-	SS-09(	(0-2)			UR-01-	SS-09(	2-6)			UR-01-5	SS-09(6	i-12)			UR-01	-SS-10	0(0-2	)		UR-01-	SS-10(2-	j)		UR-01-	SS-10(6	5-12)			UR-01-5	3S-11((	0-2)	
	Field Sa	mple ID	BPSC	OU-UR0	1SS09	-11022	21-1	BPS	OU-UR0	1SS09-	11022	21-2	BPS	OU-UR0	1SS09-	11022	21-3	BPS	OU-UR	01SS1	0-11	0221-1	BPS	OU-UR0	1SS10-11	0221-2	BPS	OU-UR	1SS10-	-1102	21-3	BPSC	OU-UR01	ISS11-	11022	.1-1
	Lab Sa	mple ID		1	N/A					N/A				I	N/A					N/A				1058	5396007			1058	639600	18			Ν	N/A		
	Sam	ple Date		11/2	2/2021				11/	2/2021				11/	2/2021				11	/2/202	21			11/2	2/2021			11/	2/2021				11/2	2/2021		
	Sam	ple Type		Na	atural				N	atural				Ν	atural				1	Natural	l			N	atural			N	atural				Na	atural		
Method	Analyte	Units	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qua	5/1	E Reason Code	Result	Lab Qual	DV Qual S	E Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code
XRF	Arsenic	mg/kg	24.89			Е		29.83			Е		29.36			Е		14.41			Е		13.61			E	11.09			Е		8.99			Е	
XRF	Cadmium	mg/kg	<6.42	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;6.78</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;6.69</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.13</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.12</td><td><lod< td=""><td></td><td>Ξ</td><td>&lt;6.78</td><td><lod< td=""><td></td><td>Е</td><td></td><td>7.85</td><td></td><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<6.78	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;6.69</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.13</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.12</td><td><lod< td=""><td></td><td>Ξ</td><td>&lt;6.78</td><td><lod< td=""><td></td><td>Е</td><td></td><td>7.85</td><td></td><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<6.69	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.13</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.12</td><td><lod< td=""><td></td><td>Ξ</td><td>&lt;6.78</td><td><lod< td=""><td></td><td>Е</td><td></td><td>7.85</td><td></td><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<7.13	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.12</td><td><lod< td=""><td></td><td>Ξ</td><td>&lt;6.78</td><td><lod< td=""><td></td><td>Е</td><td></td><td>7.85</td><td></td><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<>		Е		<7.12	<lod< td=""><td></td><td>Ξ</td><td>&lt;6.78</td><td><lod< td=""><td></td><td>Е</td><td></td><td>7.85</td><td></td><td></td><td>Е</td><td></td></lod<></td></lod<>		Ξ	<6.78	<lod< td=""><td></td><td>Е</td><td></td><td>7.85</td><td></td><td></td><td>Е</td><td></td></lod<>		Е		7.85			Е	
XRF	Copper	mg/kg	52.70			Е		48.40			Е		55.84			Е		86.66			Е		131.60			Ξ	205.84			Е		60.55		1	Е	
XRF	Lead	mg/kg	21.03			Е		18.79			Е		18.03			Е		25.39			Е		28.89			Ξ	46.71			Е		25.68		1	Е	
XRF	Mercury	mg/kg	<5.87	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt; 6.01</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;5.91</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.34</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.61</td><td><lod< td=""><td>UJ</td><td>S CX</td><td>&lt;6.57</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.46</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	< 6.01	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;5.91</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.34</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.61</td><td><lod< td=""><td>UJ</td><td>S CX</td><td>&lt;6.57</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.46</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<5.91	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.34</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.61</td><td><lod< td=""><td>UJ</td><td>S CX</td><td>&lt;6.57</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.46</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.34	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.61</td><td><lod< td=""><td>UJ</td><td>S CX</td><td>&lt;6.57</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.46</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.61	<lod< td=""><td>UJ</td><td>S CX</td><td>&lt;6.57</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.46</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<>	UJ	S CX	<6.57	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.46</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<>	UJ	S	CX	<6.46	<lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<>	UJ	S	CX
XRF	Zinc	mg/kg	100.42			Е		98.24			Е		102.58			Е		129.66			Е		172.46				301.58			Е		156.74			Е	
ASTM D2974	Moisture, Percent	%																					3.8	N2		TT]	16.1	N2		Е						
SW-846 6010D	Arsenic	mg/kg																					4.9				4.3			Е						
SW-846 6010D	Cadmium	mg/kg																					0.33				0.43			Е						
SW-846 6010D	Copper	mg/kg																					47.4				64.8			Е						
SW-846 6010D	Lead	mg/kg																					15.0				17.7			Е						
SW-846 6010D	Zinc	mg/kg																					78.5			Ξ	110			Е						
SW-846 7471B	Mercury	mg/kg																					0.23				0.55			Е						

Notes:

Depth intervals are inches below ground surface.

Qualification (Qual) and Reason Codes are defined in Table A4.

< - Not detected at the detection limit.

#### Abbreviations:

	Station (Depth	Interval)		UR-01-S	S-11(2-6			UR-01-5	SS-11(6	-12)			UR-01-	SS-12(0	)-2)			UR-01-5	SS-12(2	2-6)			UR-01-S	S-12(6-12)			UR-01-SS	8-13(0-	-2)		UR-01-	SS-13(	2-6)	
	Field Sa	mple ID	BPSC	U-UR01	SS11-110	221-2	BPSO	OU-UR0	1SS11-	110221	-3	BPSC	OU-UR0	1SS12-	11022	1-1	BPSC	U-UR01	ISS12-1	11022	21-2	BPS	OU-UR01	SS12-1102	21-3	BPSC	OU-UR018	SS13-1	10221-1	BPSC	OU-UR0	1SS13-	-11022	1-2
	Lab Sa	mple ID		10586	396005			10580	639600	6			1	N/A				10586	5396004	4			Ν	J/A			105863	896001			1058	639600	)2	
	Sam	ple Date		11/2	/2021			11/2	2/2021				11/2	2/2021				11/2	2/2021				11/2	/2021			11/2/	2021			11/	2/2021		
	Sam	ple Type		Na	tural			Na	atural				Na	atural				Na	tural				Na	tural			Nati	ural			N	atural		
Method	Analyte	Units	Result		DV Qual S	E Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual S/E	Reason Code	Result	Lab Qual	DV Qual	S/E Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code
XRF	Arsenic	mg/kg	10.55		1	3	18.42			Е		10.39			Е		18.87			Е		6.06		Е		11.47			Е	<7.23	<lod< td=""><td></td><td>Е</td><td></td></lod<>		Е	
XRF	Cadmium	mg/kg	10.45		I	2	<7.76	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.65</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.68</td><td><lod< td=""><td></td><td>Е</td><td></td><td>8.09</td><td></td><td>Е</td><td></td><td>11.00</td><td></td><td></td><td>Е</td><td>12.70</td><td></td><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<>		Е		<7.65	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.68</td><td><lod< td=""><td></td><td>Е</td><td></td><td>8.09</td><td></td><td>Е</td><td></td><td>11.00</td><td></td><td></td><td>Е</td><td>12.70</td><td></td><td></td><td>Е</td><td></td></lod<></td></lod<>		Е		<7.68	<lod< td=""><td></td><td>Е</td><td></td><td>8.09</td><td></td><td>Е</td><td></td><td>11.00</td><td></td><td></td><td>Е</td><td>12.70</td><td></td><td></td><td>Е</td><td></td></lod<>		Е		8.09		Е		11.00			Е	12.70			Е	
XRF	Copper	mg/kg	49.91		I	2	100.03			Е		63.55			Е		37.83			Е		74.75		Е		49.11			Е	57.81			Е	
XRF	Lead	mg/kg	17.07		I	2	95.70			Е		58.44			Е		18.30			Е		18.19		Е		22.52			Е	36.74			Е	
XRF	Mercury	mg/kg	<7.11	<lod< td=""><td>UJ S</td><td>CX</td><td>&lt;7.11</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.44</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.81</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.25</td><td><lod< td=""><td>UJ S</td><td>CX</td><td>&lt;7.93</td><td><lod< td=""><td>UJ</td><td>S CX</td><td>&lt;7.23</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ S	CX	<7.11	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.44</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.81</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.25</td><td><lod< td=""><td>UJ S</td><td>CX</td><td>&lt;7.93</td><td><lod< td=""><td>UJ</td><td>S CX</td><td>&lt;7.23</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.44	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.81</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.25</td><td><lod< td=""><td>UJ S</td><td>CX</td><td>&lt;7.93</td><td><lod< td=""><td>UJ</td><td>S CX</td><td>&lt;7.23</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.81	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.25</td><td><lod< td=""><td>UJ S</td><td>CX</td><td>&lt;7.93</td><td><lod< td=""><td>UJ</td><td>S CX</td><td>&lt;7.23</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.25	<lod< td=""><td>UJ S</td><td>CX</td><td>&lt;7.93</td><td><lod< td=""><td>UJ</td><td>S CX</td><td>&lt;7.23</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<>	UJ S	CX	<7.93	<lod< td=""><td>UJ</td><td>S CX</td><td>&lt;7.23</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<>	UJ	S CX	<7.23	<lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<>	UJ	S	CX
XRF	Zinc	mg/kg	161.57		I	2	274.76			Е		157.57			Е		145.94			Е		193.16		Е		128.92			Е	129.28			Е	
ASTM D2974	Moisture, Percent	%	3.5	N2	I	2	3.3	N2		Е							19.8	N2		Е						7.4	N2		Е	6.2	N2		Е	
SW-846 6010D	Arsenic	mg/kg	4.7		I	8	7.3			Е							18.0			Е						9.4			Е	4.9			Е	
SW-846 6010D	Cadmium	mg/kg	0.26		I	8	0.58			Е							0.30			Е						0.30			Е	0.14	J	А	Е	<rl< td=""></rl<>
SW-846 6010D	Copper	mg/kg	44.6		I	E	61.8			Е							35.0			Е						59.2			Е	48.8			Е	
SW-846 6010D	Lead	mg/kg	26.7		l	6	88.7			Е							20.6			Е						25.5			Е	12.1			Е	
SW-846 6010D	Zinc	mg/kg	83.1		I	E	167			Е							144			Е						113			Е	78.3			Е	
SW-846 7471B	Mercury	mg/kg	0.020		I	E	0.097			Е							0.014	J	Α	Е	<rl< td=""><td></td><td></td><td></td><td></td><td>0.032</td><td>M1</td><td>J-</td><td>S S%</td><td>0.010</td><td>J</td><td>Α</td><td>Е</td><td><rl< td=""></rl<></td></rl<>					0.032	M1	J-	S S%	0.010	J	Α	Е	<rl< td=""></rl<>

Notes:

Depth intervals are inches below ground surface.

Qualification (Qual) and Reason Codes are defined in Table A4.

< - Not detected at the detection limit.

Abbreviations:

	Station (Depth	Interval)		UR-01-	SS-13	(6-12)	)		UR-01-5	SS-15(0-2)			UR-01-	-SS-15(	(2-6)			UR-01-S	S-15(6	-12)			UR-01-	-SS-16(	(0-2)			UR-01-	-SS-16(2	2-6)			UR-01-5	SS-16(	6-12)	
	Field Sa	mple ID	BPSO	OU-UR0	01SS13	3-110	221-3	BPSC	OU-UR01	SS15-1102	21-1	BPS	OU-UR	)1SS15	-11022	21-2	BPSC	U-UR0	SS15-	11022	21-3	BPS	OU-UR(	)1SS16	-1102	21-1	BPS	OU-UR(	1SS16-	11022	21-2	BPS	OU-UR0	1SS16	-11022	21-3
	Lab Sa	mple ID		1058	63960	03			10586	5277009			1058	862770	10			10586	527701	1				N/A				1058	627700	7			1058	627700	08	
	Sam	ple Date		11/	2/202	1			11/2	2/2021			11/	/2/2021				11/2	2/2021				11/	/2/2021				11/	/2/2021				11/	2/2021	l	
	Samj	ole Type		N	atural				Na	tural			Ν	latural				Na	tural				Ν	atural				Ν	atural				N	atural		
Method	Analyte	Units	Result		DV Qua	S/E	Reason Code	Result	Lab Qual	DV Qual S/E	Reason Code	Result	Lab Qual	DV Qual	S/F	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result		DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual		Reason Code
XRF	Arsenic	mg/kg	12.29		J	S	D%, R%	23.97		Е		17.05			Е		10.20			Е		30.77			Е		23.77			Е		20.82			Е	
XRF	Cadmium	mg/kg	9.41			Е		7.58		Е		10.24			Е		12.87			Е		<6.79	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.19</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.3</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<>		Е		<7.19	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.3</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<>		Е		<7.3	<lod< td=""><td></td><td>Е</td><td></td></lod<>		Е	
XRF	Copper	mg/kg	74.15			Е		101.97		Е		103.46			Е		91.28			Е		52.56			Е		84.12			Е		106.88			Е	
XRF	Lead	mg/kg	17.39			Е		361.91		Е		157.75		J	S	D%	47.54			Е		25.88			Е		71.65			Е		86.25			Е	
XRF	Mercury	mg/kg	<6.51	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.67</td><td><lod< td=""><td>UJ S</td><td>CX</td><td>&lt;6.95</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.88</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;5.9</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.9</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.96</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.67	<lod< td=""><td>UJ S</td><td>CX</td><td>&lt;6.95</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.88</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;5.9</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.9</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.96</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ S	CX	<6.95	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.88</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;5.9</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.9</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.96</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.88	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;5.9</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.9</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.96</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<5.9	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.9</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.96</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.9	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.96</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<>	UJ	S	CX	<6.96	<lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<>	UJ	S	CX
XRF	Zinc	mg/kg	132.37			Е		502.20		Е		360.53			Е		297.98			Е		107.03			Е		253.47			Е		295.75			Е	
ASTM D2974	Moisture, Percent	%	6.3	N2		Е		6.2	N2	Е		5.0	N2		Е		4.2	N2		Е							4.2	N2		Е		3.5	N2		Е	
SW-846 6010D	Arsenic	mg/kg	2.7			Е		8.1		Е		12.2			Е		8.1			Е							11.8			Е		6			Е	
SW-846 6010D	Cadmium	mg/kg	0.24			Е		0.53		Е		1.7			Е		0.90			Е							0.55			Е		0.46			Е	
SW-846 6010D	Copper	mg/kg	45.9			Е		73.2		Е		71.4			Е		82.0			Е							46.7			Е		58.9			Е	
SW-846 6010D	Lead	mg/kg	7.8			Е		75.5		Е		200			Е		195			Е							43.5			Е		55.4			Е	
SW-846 6010D	Zinc	mg/kg	79.3			Е		168		Е		315			Е		243			Е							134			Е		138			Е	
SW-846 7471B	Mercury	mg/kg	0.012	J	Α	Е	<rl< td=""><td>0.61</td><td></td><td>Е</td><td></td><td>0.23</td><td></td><td></td><td>Е</td><td></td><td>0.15</td><td></td><td></td><td>Е</td><td></td><td></td><td></td><td></td><td></td><td></td><td>0.11</td><td></td><td></td><td>Е</td><td></td><td>0.21</td><td></td><td></td><td>Е</td><td></td></rl<>	0.61		Е		0.23			Е		0.15			Е							0.11			Е		0.21			Е	

Notes:

Depth intervals are inches below ground surface.

Qualification (Qual) and Reason Codes are defined in Table A4.

< - Not detected at the detection limit.

#### Abbreviations:

	Station (Depth	Interval)		UR-01-	SS-17(0	)-2)			UR-01-5	SS-17(2	2-6)			UR-01-S	S-17(6	-12)			UR-01-5	SS-18(	0-2)			UR-01-S	S-18(2	2-6)			UR-01-	SS-18(6	j <b>-</b> 12)			UR-01-	SS-19(	(0-2)	
	Field Sa	mple ID	BPSO	OU-UR0	1SS17-	11022	21-1	BPSC	OU-UR01	ISS17-	11022	1-2	BPSC	OU-UR0	ISS17-	1102	21-3	BPSC	OU-UR0	1SS18-	11022	21-1	BPSC	U-UR01	SS18-1	11022	1-2	BPS	OU-UR0	1SS18-	11022	21-3	BPS	OU-UR0	1SS19-	-11022	1-1
	Lab Sa	mple ID		ľ	N/A				Ν	N/A				١	N/A				10586	627700	4			10586	27700	5			1058	627700	6			1058	627700	01	
	Sam	ple Date		11/2	2/2021				11/2	2/2021				11/2	2/2021				11/2	2/2021				11/2	/2021				11/	2/2021				11/	2/2021		
	Sam	ple Type		Na	atural				Na	tural				Na	tural				Na	atural				Nat	ural				N	atural				N	atural		
Method	Analyte	Units	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code
XRF	Arsenic	mg/kg	30.07			Е		32.63			Е		29.55			Е		11.80			Е		12.29			Е		8.71			Е		8.80			Е	
XRF	Cadmium	mg/kg	<7	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;6.83</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;6.94</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.24</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.63</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.69</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.6</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<6.83	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;6.94</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.24</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.63</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.69</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.6</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<6.94	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.24</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.63</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.69</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.6</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<7.24	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.63</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.69</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.6</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<7.63	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.69</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.6</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<>		Е		<7.69	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.6</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<>		Е		<7.6	<lod< td=""><td></td><td>Е</td><td></td></lod<>		Е	
XRF	Copper	mg/kg	48.64			Е		56.75			Е		44.34			Е		58.96			Е		69.63			Е		62.46			Е		71.01			Е	
XRF	Lead	mg/kg	23.32			Е		23.21			Е		24.04			Е		63.03			Е		34.61			Е		39.53			Е		60.56			Е	
XRF	Mercury	mg/kg	<6.1	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.14</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.27</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.63</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.78</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.06</td><td><lod< td=""><td>UJ</td><td>S</td><td>СХ</td><td>&lt;7.01</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.14	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.27</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.63</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.78</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.06</td><td><lod< td=""><td>UJ</td><td>S</td><td>СХ</td><td>&lt;7.01</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.27	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.63</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.78</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.06</td><td><lod< td=""><td>UJ</td><td>S</td><td>СХ</td><td>&lt;7.01</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.63	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.78</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.06</td><td><lod< td=""><td>UJ</td><td>S</td><td>СХ</td><td>&lt;7.01</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.78	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.06</td><td><lod< td=""><td>UJ</td><td>S</td><td>СХ</td><td>&lt;7.01</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<>	UJ	S	CX	<7.06	<lod< td=""><td>UJ</td><td>S</td><td>СХ</td><td>&lt;7.01</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<>	UJ	S	СХ	<7.01	<lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<>	UJ	S	CX
XRF	Zinc	mg/kg	103.74			Е		97.97			Е		94.33			Е		227.03			Е		162.58			Е		138.98			Е		195.93			Е	
ASTM D2974	Moisture, Percent	%																6.5	N2		Е		4.3	N2		Е		4.0	N2		Е		5.2	N2		Е	
SW-846 6010D	Arsenic	mg/kg																7.2			Е		5.1			Е		5.0			Е		5.0			Е	
SW-846 6010D	Cadmium	mg/kg																0.66			Е		0.21			Е		0.24			Е		0.33			Е	
SW-846 6010D	Copper	mg/kg																54.7			Е		39.4			Е		39.4			Е		49.9			Е	
SW-846 6010D	Lead	mg/kg																80.7			Е		26.5			Е		23.8			Е		39.4	M1	J-	S	S%
SW-846 6010D	Zinc	mg/kg																200			Е		79.4			Е		76.3			Е		114	M1	J-	S	S%
SW-846 7471B	Mercury	mg/kg																0.12			Е		0.11			Е		0.082			Е		0.051	R1,M1	J	S	S%, D%

Notes:

Depth intervals are inches below ground surface.

Qualification (Qual) and Reason Codes are defined in Table A4.

< - Not detected at the detection limit.

Abbreviations:

	Station (Depth	Interval)		UR-01-5	SS-19(	2-6)			UR-01-8	SS-19(6	5-12)			UR-01-	SS-20(	0-2)			UR-01-	-SS-20(	(2-6)			UR-01-S	S-20(6	-12)			UR-01	-SS-21	(0-2)			UR-01-	SS-21(	(2-6)	
	Field Sa	imple ID	BPSC	OU-UR01	ISS19-	11022	21-2	BPSC	OU-UR0	1SS19-	-11022	21-3	BPS	OU-UR0	1SS20-	11022	1-1	BPS	OU-UR0	1SS20-	-1102	221-2	BPSC	OU-UR0	1SS20-	11022	1-3	BPS	OU-UR	01SS21	1-1102	21-1	BPS	OU-UR0	1SS21-	-11022	21-2
	Lab Sa	imple ID		10586	527700	)2			1058	627700	)3			1	N/A					N/A				١	N/A				105	862670	12			1058	626701	13	
	Sam	ple Date		11/2	2/2021				11/2	2/2021				11/	2/2021				11/	2/2021				11/2	2/2021				11	/2/202	1			11/	2/2021		
	Sam	ple Type		Na	ıtural				Na	atural				Ν	atural				N	atural				Na	atural				1	Natural				N	atural		
Method	Analyte	Units	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code
XRF	Arsenic	mg/kg	12.81			Е		<9.07	<lod< td=""><td></td><td>Е</td><td></td><td>42.60</td><td></td><td></td><td>Е</td><td></td><td>38.13</td><td></td><td></td><td>Е</td><td></td><td>32.92</td><td></td><td></td><td>Е</td><td></td><td>377.35</td><td></td><td></td><td>Е</td><td></td><td>201.24</td><td></td><td></td><td>Е</td><td></td></lod<>		Е		42.60			Е		38.13			Е		32.92			Е		377.35			Е		201.24			Е	
XRF	Cadmium	mg/kg	<8.64	<lod< td=""><td></td><td>Е</td><td></td><td>10.38</td><td></td><td></td><td>Е</td><td></td><td>&lt;6.68</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;6.98</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.03</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.59</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.57</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>		Е		10.38			Е		<6.68	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;6.98</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.03</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.59</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.57</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<6.98	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.03</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.59</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.57</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<7.03	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.59</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.57</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<>		Е		<7.59	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.57</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<>		Е		<7.57	<lod< td=""><td></td><td>Е</td><td></td></lod<>		Е	
XRF	Copper	mg/kg	53.90			Е		48.57			Е		67.66			Е		52.84			Е		45.76			Е		783.88			Е		248.50			Е	
XRF	Lead	mg/kg	50.53			Е		49.16			Е		31.26			Е		18.88			Е		16.03			Е		111.01			Е		44.26			Е	
XRF	Mercury	mg/kg	<7.8	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;8.57</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;5.83</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.4</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;5.88</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.2</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt; 6.67</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<8.57	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;5.83</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.4</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;5.88</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.2</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt; 6.67</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<5.83	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.4</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;5.88</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.2</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt; 6.67</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.4	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;5.88</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.2</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt; 6.67</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<5.88	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.2</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt; 6.67</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<>	UJ	S	CX	<7.2	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt; 6.67</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<>	UJ	S	CX	< 6.67	<lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<>	UJ	S	CX
XRF	Zinc	mg/kg	149.59			Е		179.44			Е		94.57			Е		93.26			Е		91.03			Е		319.24			Е		203.76			Е	
ASTM D2974	Moisture, Percent	%	5.2	N2		Е		4.1	N2		Е																	10.5	N2		Е		9.6	N2		Е	
SW-846 6010D	Arsenic	mg/kg	5.0			Е		4.0			Е																	195			Е		158			Е	
SW-846 6010D	Cadmium	mg/kg	0.30			Е		0.24			Е																	0.82			Е		0.25			Е	
SW-846 6010D	Copper	mg/kg	50.2			Е		39.9			Е																	398			Е		224			Е	
SW-846 6010D	Lead	mg/kg	39.1			Е		37.2			Е																	119			Е		35.6			Е	
SW-846 6010D	Zinc	mg/kg	97.2			Е		102			Е																	271			Е		96.3			Е	
SW-846 7471B	Mercury	mg/kg	0.057			Е		0.065			Е																	0.25			Е		0.27			Е	

Notes:

Depth intervals are inches below ground surface.

Qualification (Qual) and Reason Codes are defined in Table A4.

< - Not detected at the detection limit.

Abbreviations:

	Station (Depth	Interval)		UR-01-	SS-21(	6-12)			UR-01-	SS-22(	(0-2)			UR-01-	SS-22(2	2-6)		1	JR-01-S	S-22(0	5-12)			UR-01-S	S-23(0	-2)			UR-01-	SS-23(2	2-6)			UR-01-	SS-23(	6-12)	
	Field Sa	mple ID	BPSO	OU-UR	1SS21	-11022	21-3	BPS	OU-UR0	1SS22	-11022	21-1	BPSO	OU-UR0	ISS22-	1102	21-2	BPSC	U-UR0	SS22	1102	21-3	BPSO	OU-UR01	SS23-1	10221	-1	BPSC	OU-UR0	1SS23-	11022	21-2	BPSC	OU-UR0	1SS23	-1102	21-3
	Lab Sa	mple ID		1058	62670	14			l	N/A				10586	526701	1			١	J/A				10586	267008	3			1058	626700	19			1058	626701	10	
	Sam	ple Date		11/	/2/2021	l			11/	2/2021				11/2	2/2021				11/2	2/2021				11/2	/2021				11/	2/2021				11/	2/2021	l	
	Samj	ple Type		Ν	atural				N	atural				Na	ıtural				Na	ıtural				Na	tural				N	atural				N	atural		
Method	Analyte	Units	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/F	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	I S/E	Reason Code
XRF	Arsenic	mg/kg	184.97			Е		33.83			Е		34.80			Е		31.56			Е		<21.81	<lod< td=""><td></td><td>Е</td><td></td><td>97.64</td><td></td><td></td><td>Е</td><td></td><td>82.46</td><td></td><td></td><td>Е</td><td></td></lod<>		Е		97.64			Е		82.46			Е	
XRF	Cadmium	mg/kg	<7.71	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;6.87</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.81</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.04</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.37</td><td><lod< td=""><td></td><td>Е</td><td></td><td>10.27</td><td></td><td></td><td>Е</td><td></td><td>&lt;7.46</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<6.87	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.81</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.04</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.37</td><td><lod< td=""><td></td><td>Е</td><td></td><td>10.27</td><td></td><td></td><td>Е</td><td></td><td>&lt;7.46</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<7.81	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.04</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.37</td><td><lod< td=""><td></td><td>Е</td><td></td><td>10.27</td><td></td><td></td><td>Е</td><td></td><td>&lt;7.46</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<7.04	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.37</td><td><lod< td=""><td></td><td>Е</td><td></td><td>10.27</td><td></td><td></td><td>Е</td><td></td><td>&lt;7.46</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<>		Е		<7.37	<lod< td=""><td></td><td>Е</td><td></td><td>10.27</td><td></td><td></td><td>Е</td><td></td><td>&lt;7.46</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<>		Е		10.27			Е		<7.46	<lod< td=""><td></td><td>Е</td><td></td></lod<>		Е	
XRF	Copper	mg/kg	273.34			Е		67.40			Е		42.46			Е		59.88			Е		218.46			Е		688.30			Е		381.88			Е	
XRF	Lead	mg/kg	25.09			Е		28.82			Е		21.66			Е		24.60			Е		590.29			Е		1,579.49			Е		967.11			Е	
XRF	Mercury	mg/kg	<7.08	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;5.86</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.79</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.14</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.28</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;8.15</td><td><lod< td=""><td>UJ</td><td>S</td><td>СХ</td><td>&lt;7.77</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<5.86	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.79</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.14</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.28</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;8.15</td><td><lod< td=""><td>UJ</td><td>S</td><td>СХ</td><td>&lt;7.77</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.79	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.14</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.28</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;8.15</td><td><lod< td=""><td>UJ</td><td>S</td><td>СХ</td><td>&lt;7.77</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.14	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;7.28</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;8.15</td><td><lod< td=""><td>UJ</td><td>S</td><td>СХ</td><td>&lt;7.77</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<7.28	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;8.15</td><td><lod< td=""><td>UJ</td><td>S</td><td>СХ</td><td>&lt;7.77</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<>	UJ	S	CX	<8.15	<lod< td=""><td>UJ</td><td>S</td><td>СХ</td><td>&lt;7.77</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<>	UJ	S	СХ	<7.77	<lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<>	UJ	S	CX
XRF	Zinc	mg/kg	103.75			Е		79.20			Е		90.44			Е		92.40			Е		1,515.18			Е		1,458.42			Е		1,425.47			Е	
ASTM D2974	Moisture, Percent	%	10.0	N2		Е							7.4	N2		Е							6.7	N2		Е		9.4	N2		Е		12.1	N2		Е	
SW-846 6010D	Arsenic	mg/kg	167			Е							22.2			Е							31.3			Е		60.1			Е		51.7			Е	
SW-846 6010D	Cadmium	mg/kg	0.14	J	Α	Е	<rl< td=""><td></td><td></td><td></td><td></td><td></td><td>0.49</td><td></td><td></td><td>Е</td><td></td><td></td><td></td><td></td><td></td><td></td><td>9.4</td><td></td><td></td><td>Е</td><td></td><td>79.2</td><td></td><td></td><td>Е</td><td></td><td>6.0</td><td></td><td></td><td>Е</td><td></td></rl<>						0.49			Е							9.4			Е		79.2			Е		6.0			Е	
SW-846 6010D	Copper	mg/kg	241			Е							30.4			Е							180			Е		569			Е		285			Е	
SW-846 6010D	Lead	mg/kg	18.2			Е							12.7			Е							656			Е		2,850			Е		1,340			Е	
SW-846 6010D	Zinc	mg/kg	60.0			Е							42.0			Е							2,010			Е		22,800			Е		1,310			Е	
SW-846 7471B	Mercury	mg/kg	0.062			Е							0.029			Е							0.61			Е		2.4			Е		1.2			Е	

Notes:

Depth intervals are inches below ground surface.

Qualification (Qual) and Reason Codes are defined in Table A4.

< - Not detected at the detection limit.

Abbreviations:

	Station (Depth	Interval)		UR-01-5	SS-24(0	0-2)			UR-01-5	SS-24(2	-6)			UR-01-5	SS-24(6	-12)			UR-01-	SS-25(0	0-2)			UR-01-5	SS-25(2	2-6)			UR-01-8	SS-25(6	5-12)			UR-01	-SS-26	(0-2)	
	Field Sa	mple ID	BPSC	U-UR01	ISS24-	11022	21-1	BPSC	OU-UR0	ISS24-1	10221	1-2	BPSC	OU-UR0	1SS24-	11022	1-3	BPSC	U-UR0	1SS25-	1102	21-1	BPS	OU-UR0	SS25-	11022	1-2	BPSO	OU-UR0	1SS25-	110221	1-3	BPS	OU-UR	01SS26	-11022	21-1
	Lab Sa	mple ID		10586	526700	17			١	√A				]	N/A				1058	526700	4			10586	526700	5			]	N/A					N/A		
	Sam	ple Date		11/2	2/2021				11/2	2/2021				11/	2/2021				11/2	2/2021				11/2	2/2021				11/	2/2021				11	/2/2021	l	
	Samj	ole Type		Na	ıtural				Na	ıtural				N	atural				Na	atural				Na	itural				N	atural				Ν	latural		
Method	Analyte	Units	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual		Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/F	Reason Code	Result	Lab Qual	DV Qual	C/L	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code
XRF	Arsenic	mg/kg	10.09			Е		12.85			Е		10.03			Е		12.45			Е		17.74			Е		7.30			Е		27.87			Е	
XRF	Cadmium	mg/kg	<6.8	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.28</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.58</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;6.93</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.08</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;5.6</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.16</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<7.28	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.58</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;6.93</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.08</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;5.6</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.16</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<7.58	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;6.93</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.08</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;5.6</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.16</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<6.93	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.08</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;5.6</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.16</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<></td></lod<>		Е		<7.08	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;5.6</td><td><lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.16</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<></td></lod<>		Е		<5.6	<lod< td=""><td></td><td>Е</td><td></td><td>&lt;7.16</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<>		Е		<7.16	<lod< td=""><td></td><td>Е</td><td></td></lod<>		Е	
XRF	Copper	mg/kg	90.55			Е		63.94			Е		52.19			Е		76.37			Е		98.84			Е		51.22			Е		77.70			Е	
XRF	Lead	mg/kg	55.76			Е		40.46			Е		21.07			Е		63.10			Е		72.18			Е		31.23			Е		53.98			Е	
XRF	Mercury	mg/kg	< 6.03	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.49</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.5</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt; 6.35</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.58</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;5.34</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.17</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.49	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.5</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt; 6.35</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.58</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;5.34</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.17</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.5	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt; 6.35</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.58</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;5.34</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.17</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	< 6.35	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.58</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;5.34</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.17</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.58	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;5.34</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.17</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<>	UJ	S	CX	<5.34	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.17</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<>	UJ	S	CX	<6.17	<lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<>	UJ	S	CX
XRF	Zinc	mg/kg	217.63			Е		171.49			Е		115.90			Е		199.71			Е		233.38			Е		136.54			Е		204.11			Е	
ASTM D2974	Moisture, Percent	%	8.8	N2		Е												8.0	N2		Е		19.6	N2		Е											
SW-846 6010D	Arsenic	mg/kg	6.4			Е												7.1		J	S	FD	6.9			Е											
SW-846 6010D	Cadmium	mg/kg	0.50			Е												0.49			Е		0.44			Е											
SW-846 6010D	Copper	mg/kg	49.5			Е												55.4			Е		55.5			Е											
SW-846 6010D	Lead	mg/kg	47.3			Е												54.2			Е		58.9			Е											
SW-846 6010D	Zinc	mg/kg	147			Е												155			Е		149			Е											
SW-846 7471B	Mercury	mg/kg	0.069			Е												0.052			Е		0.042			Е											

Notes:

Depth intervals are inches below ground surface.

Qualification (Qual) and Reason Codes are defined in Table A4.

< - Not detected at the detection limit.

Abbreviations:

	Station (Depth	Interval)		UR-01-	SS-26(	2-6)			UR-01-8	SS-26(6	5-12)			UR-01-8	SS-27(	0-2)			UR-01-5	SS-27(2	2-6)		1	UR-01-S	S-27(6	j-12)	
	Field Sa	mple ID	BPSO	OU-UR0	1SS26	-1102	21-2	BPSO	OU-UR0	1SS26-	-1102	21-3	BPSC	OU-UR01	SS27-	11022	21-1	BPSC	U-UR01	SS27-	11022	21-2	BPSC	OU-UR0	1SS27-	11022	21-3
	Lab Sa	mple ID		1058	626700	)2			1058	626700	)3			Ν	J/A				Ν	I∕A				10586	626700	1	
	Sam	ple Date		11/2	2/2021				11/2	2/2021				11/2	2/2021				11/2	2/2021				11/2	2/2021		
	Sam	ple Type		N	atural				N	atural				Na	tural				Na	tural				Na	atural		
Method	Analyte	Units	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code	Result	Lab Qual	DV Qual	S/E	Reason Code
XRF	Arsenic	mg/kg	23.00			Е		19.56			Е		14.91			Е		28.25			Е		9.93			Е	
XRF	Cadmium	mg/kg	9.14			Е		<7.59	<lod< td=""><td></td><td>Е</td><td></td><td>9.18</td><td></td><td></td><td>Е</td><td></td><td>8.22</td><td></td><td></td><td>Е</td><td></td><td>&lt;7.66</td><td><lod< td=""><td></td><td>Е</td><td></td></lod<></td></lod<>		Е		9.18			Е		8.22			Е		<7.66	<lod< td=""><td></td><td>Е</td><td></td></lod<>		Е	
XRF	Copper	mg/kg	84.51			Е		105.37			Е		63.67			Е		77.56			Е		93.76			Е	
XRF	Lead	mg/kg	116.97			Е		159.78			Е		31.96			Е		60.63			Е		37.26			Е	
XRF	Mercury	mg/kg	<6.83	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt; 6.81</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.38</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.49</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.61</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	< 6.81	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.38</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.49</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.61</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.38	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.49</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.61</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<></td></lod<>	UJ	S	CX	<6.49	<lod< td=""><td>UJ</td><td>S</td><td>CX</td><td>&lt;6.61</td><td><lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<></td></lod<>	UJ	S	CX	<6.61	<lod< td=""><td>UJ</td><td>S</td><td>CX</td></lod<>	UJ	S	CX
XRF	Zinc	mg/kg	337.29			Е		341.91			Е		132.88			Е		260.11			Е		148.24			Е	
ASTM D2974	Moisture, Percent	%	7.7	N2		Е		5.8	N2		Е												4.6	N2		Е	
SW-846 6010D	Arsenic	mg/kg	14.8			Е		15.5			Е												6.1			Е	
SW-846 6010D	Cadmium	mg/kg	2.8			Е		1.9			Е												0.35			Е	
SW-846 6010D	Copper	mg/kg	77.7			Е		92.5			Е												64.5			Е	
SW-846 6010D	Lead	mg/kg	148			Е		288			Е												25.3	M1	J-	S	S%
SW-846 6010D	Zinc	mg/kg	334			Е		405			Е												98.6	M1	J-	S	S%
SW-846 7471B	Mercury	mg/kg	0.092			Е		0.21			Е												0.034	M1	J-	S	S%

Notes:

Depth intervals are inches below ground surface.

Qualification (Qual) and Reason Codes are defined in Table A4.

< - Not detected at the detection limit.

Abbreviations:

#### Table A2. Field Duplicate Pair Samples with Results, Laboratory Qualifiers, Data Validation Qualifiers, Data Validation Reason Codes, and QC Criteria Assessment

	Station (Depth	n Interval)		U	R-01-SS-(	01(6-12)				UR-0	1-SS-01	(6-12)-FD						
	Field S	ample ID		BPSOU	J-UR01SS	501-110321-2	3		E	BPSOU-U	R01SS0	1-110321-3-	FD					
	Lab S	ample ID			1058627	7013				1	1058627	7014						
	Sar	nple Date			11/3/2	021					11/3/20	021						
	San	nple Type		]	Natural S	ample				F	ield Dup	olicate						
Method	Analyte	Units	Result	Lab Qual	DV Qual	Reason Code	DF	RL	Result	Lab Qual	DV Qual	Reason Code	DF	RL	Control Limit <sup>1</sup>	ABS DIF	RPD	Meets Control Limit?
XRF	Arsenic	mg/kg	9.86				1	N/A	7.94				1	N/A	RPD≤35%		22%	Yes
XRF	Cadmium	mg/kg	<7.88	<lod< td=""><td></td><td></td><td>1</td><td>N/A</td><td>&lt;7.63</td><td><lod< td=""><td></td><td></td><td>1</td><td>N/A</td><td>N/A</td><td></td><td>-</td><td>-</td></lod<></td></lod<>			1	N/A	<7.63	<lod< td=""><td></td><td></td><td>1</td><td>N/A</td><td>N/A</td><td></td><td>-</td><td>-</td></lod<>			1	N/A	N/A		-	-
XRF	Copper	mg/kg	79.01				1	N/A	73.98				1	N/A	RPD≤35%		7%	Yes
XRF	Lead	mg/kg	26.26				1	N/A	21.84				1	N/A	RPD≤35%		18%	Yes
XRF	Mercury	mg/kg	<7.09	<lod< td=""><td>UJ</td><td>CX</td><td>1</td><td>N/A</td><td>&lt;6.79</td><td><lod< td=""><td>UJ</td><td>CX</td><td>1</td><td>N/A</td><td>N/A</td><td></td><td>-</td><td>-</td></lod<></td></lod<>	UJ	CX	1	N/A	<6.79	<lod< td=""><td>UJ</td><td>CX</td><td>1</td><td>N/A</td><td>N/A</td><td></td><td>-</td><td>-</td></lod<>	UJ	CX	1	N/A	N/A		-	-
XRF	Zinc	mg/kg	187.34				1	N/A	138.27				1	N/A	RPD≤35%		30%	Yes
ASTM D2974	Moisture, Percent	%	3.7	N2			1	0.1	3.6	N2			1	0.1	RPD≤35%		4%	Yes
SW-846 6010D	Arsenic	mg/kg	3.4				1	1.0	3.1				1	1.0	ABS DIF≤2xRL	0.30		Yes
SW-846 6010D	Cadmium	mg/kg	0.16				1	0.15	0.18				1	0.15	ABS DIF≤2xRL	0.020		Yes
SW-846 6010D	Copper	mg/kg	42.1				1	0.51	45.4				1	0.48	RPD≤35%		8%	Yes
SW-846 6010D	Lead	mg/kg	24.7				2	1.00	20.2				2	0.97	RPD≤35%		20%	Yes
SW-846 6010D	Zinc	mg/kg	75.5				1	2.1	76.9				1	1.9	RPD≤35%		2%	Yes
SW-846 7471B	Mercury	mg/kg	0.0098	J	А	<rl< td=""><td>1</td><td>0.018</td><td>0.018</td><td>J</td><td>А</td><td><rl< td=""><td>1</td><td>0.021</td><td>ABS DIF≤2xRL</td><td>0.0082</td><td></td><td>Yes</td></rl<></td></rl<>	1	0.018	0.018	J	А	<rl< td=""><td>1</td><td>0.021</td><td>ABS DIF≤2xRL</td><td>0.0082</td><td></td><td>Yes</td></rl<>	1	0.021	ABS DIF≤2xRL	0.0082		Yes

	Station (Depth	n Interval)		U	R-01-SS-	02(2-6)				UR-0	01-SS-02	2(2-6)-FD			Ī			
	Field S	Sample ID		BPSOU	UR01SS	502-110321-2	2		E	BPSOU-U	R01SS02	2-110321-2-	FD					
	Lab S	Sample ID			1058639	6012					1058639	6013						
	Sar	nple Date			11/3/2	021					11/3/20	)21						
	San	nple Type		]	Natural Sa	ample				F	ield Dup	licate						
Method	Analyte	Units	Result	Lab Qual	DV Qual	Reason Code	DF	RL	Result	Lab Qual	DV Qual	Reason Code	DF	RL	Control Limit <sup>1</sup>	ABS DIF	RPD	Meets Control Limit?
XRF	Arsenic	mg/kg	<5.5	<lod< td=""><td></td><td></td><td>1</td><td>N/A</td><td>6.64</td><td></td><td></td><td></td><td>1</td><td>N/A</td><td>N/A</td><td></td><td>-</td><td>-</td></lod<>			1	N/A	6.64				1	N/A	N/A		-	-
XRF	Cadmium	mg/kg	10.89				1	N/A	9.14				1	N/A	RPD≤35%		17%	Yes
XRF	Copper	mg/kg	55.18				1	N/A	65.49				1	N/A	RPD≤35%		17%	Yes
XRF	Lead	mg/kg	13.06				1	N/A	14.51				1	N/A	RPD≤35%		11%	Yes
XRF	Mercury	mg/kg	<7.26	<lod< td=""><td>UJ</td><td>СХ</td><td>1</td><td>N/A</td><td>&lt;6.87</td><td><lod< td=""><td>UJ</td><td>CX</td><td>1</td><td>N/A</td><td>N/A</td><td></td><td>-</td><td>-</td></lod<></td></lod<>	UJ	СХ	1	N/A	<6.87	<lod< td=""><td>UJ</td><td>CX</td><td>1</td><td>N/A</td><td>N/A</td><td></td><td>-</td><td>-</td></lod<>	UJ	CX	1	N/A	N/A		-	-
XRF	Zinc	mg/kg	101.97				1	N/A	100.34				1	N/A	RPD≤35%		2%	Yes
ASTM D2974	Moisture, Percent	%	4.6	N2			1	0.1	4.7	N2			1	0.1	RPD≤35%		2%	Yes
SW-846 6010D	Arsenic	mg/kg	2.4				1	1.0	2.3				1	1.0	ABS DIF≤2xRL	0.10		Yes
SW-846 6010D	Cadmium	mg/kg	0.11	J	А	<rl< td=""><td>1</td><td>0.15</td><td>0.14</td><td>J</td><td>А</td><td><rl< td=""><td>1</td><td>0.15</td><td>ABS DIF≤2xRL</td><td>0.030</td><td></td><td>Yes</td></rl<></td></rl<>	1	0.15	0.14	J	А	<rl< td=""><td>1</td><td>0.15</td><td>ABS DIF≤2xRL</td><td>0.030</td><td></td><td>Yes</td></rl<>	1	0.15	ABS DIF≤2xRL	0.030		Yes
SW-846 6010D	Copper	mg/kg	41.5				1	0.50	42.2				1	0.51	RPD≤35%		2%	Yes
SW-846 6010D	Lead	mg/kg	6.1		J	FD	2	1.0	31.0		J	FD	2	1.00	RPD≤35%		134%	RPD>35%
SW-846 6010D	Zinc	mg/kg	46.1				1	2.00	53.1				1	2.1	RPD≤35%		14%	Yes
SW-846 7471B	Mercury	mg/kg	0.010	J	А	<rl< td=""><td>1</td><td>0.020</td><td>&lt; 0.008</td><td>U</td><td></td><td></td><td>1</td><td>0.019</td><td>ABS DIF≤2xRL</td><td>0.002</td><td></td><td>Yes</td></rl<>	1	0.020	< 0.008	U			1	0.019	ABS DIF≤2xRL	0.002		Yes

Notes:

Qualification (Qual) and Reason Codes are defined in Table A4.

< - Not detected at the detection limit.

The qualifications made to the field duplicate samples (DV Qual/Reason Code) are not included in the summary of qualifications made to natural samples discussed in the Data Validation Report.

Depth intervals are inches below ground surface.

Abbreviations:

DF - dilution factor RL - reporting limit

ABS DIF - absolute difference

RPD - relative percent difference mg/kg - milligram per kilogram

Footnotes:

1. If the control limit is an absolute difference less than 2 times the reporting limit, the minimum adjusted reporting limit will be used.

#### Table A2. Field Duplicate Pair Samples with Results, Laboratory Qualifiers, Data Validation Qualifiers, Data Validation Reason Codes, and QC Criteria Assessment

	Station (Depth	n Interval)		U	R-01-SS	-06(0-2)				UR-(	01-SS-06	6(0-2)-FD			[			
	Field S	ample ID		BPSOU	J-UR01S	S06-110321-1			Η	BPSOU-U	R01SS0	6-110321-1-1	FD					
	Lab S	ample ID			1058727	72010					1058727	2011						
	Sar	nple Date			11/3/2	021					11/3/20	021						
	San	nple Type		1	Natural S	ample				F	ield Dup	olicate						
Method	Analyte	Units	Result	Lab Qual	DV Qual	Reason Code	DF	RL	Result	Lab Qual	DV Qual	Reason Code	DF	RL	Control Limit <sup>1</sup>	ABS DIF	RPD	Meets Control Limit?
XRF	Arsenic	mg/kg	8.01				1	N/A	6.61				1	N/A	RPD≤35%		19%	Yes
XRF	Cadmium	mg/kg	<7.31	<lod< td=""><td></td><td></td><td>1</td><td>N/A</td><td>9.23</td><td></td><td></td><td></td><td>1</td><td>N/A</td><td>N/A</td><td></td><td>-</td><td>-</td></lod<>			1	N/A	9.23				1	N/A	N/A		-	-
XRF	Copper	mg/kg	65.65				1	N/A	66.37				1	N/A	RPD≤35%		1%	Yes
XRF	Lead	mg/kg	15.37				1	N/A	19.58				1	N/A	RPD≤35%		24%	Yes
XRF	Mercury	mg/kg	<6.64	<lod< td=""><td>UJ</td><td>CX</td><td>1</td><td>N/A</td><td>&lt;7.03</td><td><lod< td=""><td>UJ</td><td>CX</td><td>1</td><td>N/A</td><td>N/A</td><td></td><td>-</td><td>-</td></lod<></td></lod<>	UJ	CX	1	N/A	<7.03	<lod< td=""><td>UJ</td><td>CX</td><td>1</td><td>N/A</td><td>N/A</td><td></td><td>-</td><td>-</td></lod<>	UJ	CX	1	N/A	N/A		-	-
XRF	Zinc	mg/kg	108.76				1	N/A	112.30				1	N/A	RPD≤35%		3%	Yes
ASTM D2974	Moisture, Percent	%	7.1	N2			1	0.1	6.8	N2			1	0.1	RPD≤35%		4%	Yes
SW-846 6010D	Arsenic	mg/kg	3.2				1	1.0	3.2				1	1.0	ABS DIF≤2xRL	0.00		Yes
SW-846 6010D	Cadmium	mg/kg	0.14	J	А	<rl< td=""><td>1</td><td>0.16</td><td>0.13</td><td>J</td><td>А</td><td><rl< td=""><td>1</td><td>0.15</td><td>ABS DIF≤2xRL</td><td>0.010</td><td></td><td>Yes</td></rl<></td></rl<>	1	0.16	0.13	J	А	<rl< td=""><td>1</td><td>0.15</td><td>ABS DIF≤2xRL</td><td>0.010</td><td></td><td>Yes</td></rl<>	1	0.15	ABS DIF≤2xRL	0.010		Yes
SW-846 6010D	Copper	mg/kg	40.0				1	0.52	42.8				1	0.51	RPD≤35%		7%	Yes
SW-846 6010D	Lead	mg/kg	22.4				2	1.0	18.6				2	1.0	RPD≤35%		19%	Yes
SW-846 6010D	Zinc	mg/kg	53.5				1	2.1	55.5				1	2.0	RPD≤35%		4%	Yes
SW-846 7471B	Mercury	mg/kg	0.016	J	J-	Pres, <rl< td=""><td>1</td><td>0.018</td><td>0.017</td><td>J</td><td>J-</td><td>Pres, <rl< td=""><td>1</td><td>0.018</td><td>ABS DIF≤2xRL</td><td>0.001</td><td></td><td>Yes</td></rl<></td></rl<>	1	0.018	0.017	J	J-	Pres, <rl< td=""><td>1</td><td>0.018</td><td>ABS DIF≤2xRL</td><td>0.001</td><td></td><td>Yes</td></rl<>	1	0.018	ABS DIF≤2xRL	0.001		Yes

	Station (Depth	n Interval)		U	R-01-SS-	-07(0-2)				UR-(	)1-SS-07	(0-2)-FD						
	Field S	Sample ID		BPSOU	UR01SS	507-110321-1	-		E	BPSOU-U	R01SS07	7-110321-1-	FD					
	Lab S	Sample ID			1058727	2013					N/A							
	Sar	nple Date			11/3/2	021					11/3/20	)21						
	San	nple Type		l	Natural S	ample				F	ield Dup	licate						
Method	Analyte	Units	Result	Lab Qual	DV Qual	Reason Code	DF	RL	Result <sup>2</sup>	Lab Qual	DV Qual	Reason Code	DF	RL	Control Limit <sup>1</sup>	ABS DIF	RPD	Meets Control Limit?
XRF	Arsenic	mg/kg	7.57				1	N/A	9.21				1	N/A	RPD≤35%		20%	Yes
XRF	Cadmium	mg/kg	<7.5	<lod< td=""><td></td><td></td><td>1</td><td>N/A</td><td>&lt;7.29</td><td><lod< td=""><td></td><td></td><td>1</td><td>N/A</td><td>N/A</td><td></td><td>-</td><td>-</td></lod<></td></lod<>			1	N/A	<7.29	<lod< td=""><td></td><td></td><td>1</td><td>N/A</td><td>N/A</td><td></td><td>-</td><td>-</td></lod<>			1	N/A	N/A		-	-
XRF	Copper	mg/kg	63.66				1	N/A	54.07				1	N/A	RPD≤35%		16%	Yes
XRF	Lead	mg/kg	17.71		J	FD	1	N/A	29.48		J	FD	1	N/A	RPD≤35%		50%	RPD>35%
XRF	Mercury	mg/kg	<6.55	<lod< td=""><td>UJ</td><td>СХ</td><td>1</td><td>N/A</td><td>&lt;6.38</td><td><lod< td=""><td>UJ</td><td>CX</td><td>1</td><td>N/A</td><td>N/A</td><td></td><td>-</td><td>-</td></lod<></td></lod<>	UJ	СХ	1	N/A	<6.38	<lod< td=""><td>UJ</td><td>CX</td><td>1</td><td>N/A</td><td>N/A</td><td></td><td>-</td><td>-</td></lod<>	UJ	CX	1	N/A	N/A		-	-
XRF	Zinc	mg/kg	123.77				1	N/A	108.02				1	N/A	RPD≤35%		14%	Yes
ASTM D2974	Moisture, Percent	%	5.1	N2			1	0.1							N/A		-	-
SW-846 6010D	Arsenic	mg/kg	2.0				1	1.0							N/A		-	-
SW-846 6010D	Cadmium	mg/kg	0.17				1	0.15							N/A		-	-
SW-846 6010D	Copper	mg/kg	31.2				1	0.51							N/A		-	-
SW-846 6010D	Lead	mg/kg	9.2				2	1.0							N/A		-	-
SW-846 6010D	Zinc	mg/kg	55.5				1	2.0							N/A		-	-
SW-846 7471B	Mercury	mg/kg	0.013	J	J-	Pres, <rl< td=""><td>1</td><td>0.020</td><td></td><td></td><td></td><td></td><td></td><td></td><td>N/A</td><td></td><td>-</td><td>-</td></rl<>	1	0.020							N/A		-	-

#### Notes:

Qualification (Qual) and Reason Codes are defined in Table A4.

< - Not detected at the detection limit.

The qualifications made to the field duplicate samples (DV Qual/Reason Code) are not included in the summary of qualifications made to natural samples discussed in the Data Validation Report. Depth intervals are inches below ground surface.

#### Abbreviations:

DF - dilution factor

RL - reporting limit

ABS DIF - absolute difference

RPD - relative percent difference mg/kg - milligram per kilogram

#### Footnotes:

1. If the control limit is an absolute difference less than 2 times the reporting limit, the minimum adjusted reporting limit will be used.

2. Field duplicate sample was not sent to the lab for analysis.

#### Table A2. Field Duplicate Pair Samples with Results, Laboratory Qualifiers, Data Validation Qualifiers, Data Validation Reason Codes, and QC Criteria Assessment

	Station (Depth	n Interval)		U	R-01-SS-	25(0-2)				UR-	01-SS-25	5(0-2)-FD			Ι			
	Field S	Sample ID		BPSOU	J-UR01SS	525-110221-	1		I	BPSOU-U	R01SS2:	5-110221-1-	FD					
	Lab S	Sample ID			1058626	7004					1058626	7006						
	Sar	nple Date			11/2/2	021					11/2/20	)21						
	San	nple Type		]	Natural S	ample				F	ield Dup	olicate						
Method	Analyte	Units	Result	Lab Qual	DV Qual	Reason Code	DF	RL	Result	Lab Qual	DV Qual	Reason Code	DF	RL	Control Limit <sup>1</sup>	ABS DIF	RPD	Meets Control Limit?
XRF	Arsenic	mg/kg	12.45				1	N/A	12.85				1	N/A	RPD≤35%		3%	Yes
XRF	Cadmium	mg/kg	<6.93	<lod< td=""><td></td><td></td><td>1</td><td>N/A</td><td>&lt;6.5</td><td><lod< td=""><td></td><td></td><td>1</td><td>N/A</td><td>N/A</td><td></td><td>-</td><td>-</td></lod<></td></lod<>			1	N/A	<6.5	<lod< td=""><td></td><td></td><td>1</td><td>N/A</td><td>N/A</td><td></td><td>-</td><td>-</td></lod<>			1	N/A	N/A		-	-
XRF	Copper	mg/kg	76.37				1	N/A	87.31				1	N/A	RPD≤35%		13%	Yes
XRF	Lead	mg/kg	63.10				1	N/A	51.22				1	N/A	RPD≤35%		21%	Yes
XRF	Mercury	mg/kg	<6.35	<lod< td=""><td>UJ</td><td>CX</td><td>1</td><td>N/A</td><td>&lt;5.88</td><td><lod< td=""><td>UJ</td><td>CX</td><td>1</td><td>N/A</td><td>N/A</td><td></td><td>-</td><td>-</td></lod<></td></lod<>	UJ	CX	1	N/A	<5.88	<lod< td=""><td>UJ</td><td>CX</td><td>1</td><td>N/A</td><td>N/A</td><td></td><td>-</td><td>-</td></lod<>	UJ	CX	1	N/A	N/A		-	-
XRF	Zinc	mg/kg	199.71				1	N/A	213.02				1	N/A	RPD≤35%		6%	Yes
ASTM D2974	Moisture, Percent	%	8.0	N2			1	0.1	8.4	N2			1	0.1	RPD≤35%		6%	Yes
SW-846 6010D	Arsenic	mg/kg	7.1		J	FD	2	2.0	4.8		J	FD	1	1.0	ABS DIF≤2xRL	2.3		ABS DIFF>2xRL
SW-846 6010D	Cadmium	mg/kg	0.49				2	0.30	0.33				1	0.16	ABS DIF≤2xRL	0.16		Yes
SW-846 6010D	Copper	mg/kg	55.4				2	1.0	42.3				1	0.52	RPD≤35%		27%	Yes
SW-846 6010D	Lead	mg/kg	54.2				2	1.0	54.7				1	0.52	RPD≤35%		1%	Yes
SW-846 6010D	Zinc	mg/kg	155				2	4.1	113				1	2.1	RPD≤35%		31%	Yes
SW-846 7471B	Mercury	mg/kg	0.052				1	0.020	0.033				1	0.020	ABS DIF≤2xRL	0.019		Yes

#### Notes:

Qualification (Qual) and Reason Codes are defined in Table A4.

< - Not detected at the detection limit.

The qualifications made to the field duplicate samples (DV Qual/Reason Code) are not included in the summary of qualifications made to natural samples discussed in the Data Validation Report.

Depth intervals are inches below ground surface.

#### Abbreviations:

DF - dilution factor

RL - reporting limit

ABS DIF - absolute difference

RPD - relative percent difference mg/kg - milligram per kilogram

#### Footnotes:

1. If the control limit is an absolute difference less than 2 times the reporting limit, the minimum adjusted reporting limit will be used.

Station ID	Field Sample ID	Sample Type	Depth Interval (in bgs)	Sample Date	XRF	Lab ID	ASTM D2974	SW-846 6010D	SW-846 7471B
UR-01-OP-01	BPSOU-UR01OP01-110221-1	Natural	0 - 2	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-OP-01	BPSOU-UR01OP01-110221-2	Natural	2 - 6	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-OP-01	BPSOU-UR01OP01-110221-3	Natural	6 - 12	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-01	BPSOU-UR01SS01-110321-1	Natural	0 - 2	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-01	BPSOU-UR01SS01-110321-2	Natural	2 - 6	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	10586277012	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-01	BPSOU-UR01SS01-110321-3	Natural	6 - 12	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	10586277013	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-01	BPSOU-UR01SS01-110321-3-FD	Field Duplicate	6 - 12	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	10586277014	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-02	BPSOU-UR01SS02-110321-1	Natural	0 - 2	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-02	BPSOU-UR01SS02-110321-2	Natural	2 - 6	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	10586396012	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-02	BPSOU-UR01SS02-110321-2-FD	Field Duplicate	2 - 6	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	10586396013	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-02	BPSOU-UR01SS02-110321-3	Natural	6 - 12	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-03	BPSOU-UR01SS03-110321-1	Natural	0 - 2	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	10587272001	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-03	BPSOU-UR01SS03-110321-2	Natural	2 - 6	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	10587272002	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-03	BPSOU-UR01SS03-110321-3	Natural	6 - 12	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	10587272003	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-04	BPSOU-UR01SS04-110321-1	Natural	0 - 2	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	10587272004	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-04	BPSOU-UR01SS04-110321-2	Natural	2 - 6	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	10587272005	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-04	BPSOU-UR01SS04-110321-3	Natural	6 - 12	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	10587272006	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-05	BPSOU-UR01SS05-110321-1	Natural	0 - 2	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	10587272007	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-05	BPSOU-UR01SS05-110321-2	Natural	2 - 6	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	10587272008	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-05	BPSOU-UR01SS05-110321-3	Natural	6 - 12	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	10587272009	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-06	BPSOU-UR01SS06-110321-1	Natural	0 - 2	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	10587272010	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-06	BPSOU-UR01SS06-110321-1-FD	Field Duplicate	0 - 2	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	10587272011	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-06	BPSOU-UR01SS06-110321-2	Natural	2 - 6	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	10587272012	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-06	BPSOU-UR01SS06-110321-3	Natural	6 - 12	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-07	BPSOU-UR01SS07-110321-1	Natural	0 - 2	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	10587272013	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-07	BPSOU-UR01SS07-110321-1-FD	Field Duplicate	0 - 2	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-07	BPSOU-UR01SS07-110321-2	Natural	2 - 6	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	10587272014	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-07	BPSOU-UR01SS07-110321-3	Natural	6 - 12	11/3/2021	As, Cd, Cu, Pb, Hg, Zn	10587273014	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-08	BPSOU-UR01SS08-110221-1	Natural	0 - 2	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586396009	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-08	BPSOU-UR01SS08-110221-2	Natural	2 - 6	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586396010	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-08	BPSOU-UR01SS08-110221-3	Natural	6 - 12	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586396011	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-09	BPSOU-UR01SS09-110221-1	Natural	0 - 2	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-09	BPSOU-UR01SS09-110221-2	Natural	2 - 6	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			

Station ID	Field Sample ID	Sample Type	Depth Interval (in bgs)	Sample Date	XRF	Lab ID	ASTM D2974	SW-846 6010D	SW-846 7471B
UR-01-SS-09	BPSOU-UR01SS09-110221-3	Natural	6 - 12	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-10	BPSOU-UR01SS10-110221-1	Natural	0 - 2	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-10	BPSOU-UR01SS10-110221-2	Natural	2 - 6	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586396007	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-10	BPSOU-UR01SS10-110221-3	Natural	6 - 12	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586396008	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-11	BPSOU-UR01SS11-110221-1	Natural	0 - 2	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-11	BPSOU-UR01SS11-110221-2	Natural	2 - 6	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586396005	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-11	BPSOU-UR01SS11-110221-3	Natural	6 - 12	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586396006	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-12	BPSOU-UR01SS12-110221-1	Natural	0 - 2	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-12	BPSOU-UR01SS12-110221-2	Natural	2 - 6	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586396004	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-12	BPSOU-UR01SS12-110221-3	Natural	6 - 12	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-13	BPSOU-UR01SS13-110221-1	Natural	0 - 2	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586396001	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-13	BPSOU-UR01SS13-110221-2	Natural	2 - 6	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586396002	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-13	BPSOU-UR01SS13-110221-3	Natural	6 - 12	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586396003	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-15	BPSOU-UR01SS15-110221-1	Natural	0 - 2	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586277009	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-15	BPSOU-UR01SS15-110221-2	Natural	2 - 6	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586277010	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-15	BPSOU-UR01SS15-110221-3	Natural	6 - 12	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586277011	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-16	BPSOU-UR01SS16-110221-1	Natural	0 - 2	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-16	BPSOU-UR01SS16-110221-2	Natural	2 - 6	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586277007	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-16	BPSOU-UR01SS16-110221-3	Natural	6 - 12	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586277008	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-17	BPSOU-UR01SS17-110221-1	Natural	0 - 2	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-17	BPSOU-UR01SS17-110221-2	Natural	2 - 6	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-17	BPSOU-UR01SS17-110221-3	Natural	6 - 12	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-18	BPSOU-UR01SS18-110221-1	Natural	0 - 2	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586277004	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-18	BPSOU-UR01SS18-110221-2	Natural	2 - 6	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586277005	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-18	BPSOU-UR01SS18-110221-3	Natural	6 - 12	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586277006	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-19	BPSOU-UR01SS19-110221-1	Natural	0 - 2	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586277001	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-19	BPSOU-UR01SS19-110221-2	Natural	2 - 6	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586277002	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-19	BPSOU-UR01SS19-110221-3	Natural	6 - 12	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586277003	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-20	BPSOU-UR01SS20-110221-1	Natural	0 - 2	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-20	BPSOU-UR01SS20-110221-2	Natural	2 - 6	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-20	BPSOU-UR01SS20-110221-3	Natural	6 - 12	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-21	BPSOU-UR01SS21-110221-1	Natural	0 - 2	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586267012	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-21	BPSOU-UR01SS21-110221-2	Natural	2 - 6	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586267013	moisture	As, Cd, Cu, Pb, Zn	Hg

Station ID	Field Sample ID	Sample Type	Depth Interval (in bgs)	Sample Date	XRF	Lab ID	ASTM D2974	SW-846 6010D	SW-846 7471B
UR-01-SS-21	BPSOU-UR01SS21-110221-3	Natural	6 - 12	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586267014	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-22	BPSOU-UR01SS22-110221-1	Natural	0 - 2	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-22	BPSOU-UR01SS22-110221-2	Natural	2 - 6	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586267011	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-22	BPSOU-UR01SS22-110221-3	Natural	6 - 12	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-23	BPSOU-UR01SS23-110221-1	Natural	0 - 2	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586267008	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-23	BPSOU-UR01SS23-110221-2	Natural	2 - 6	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586267009	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-23	BPSOU-UR01SS23-110221-3	Natural	6 - 12	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586267010	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-24	BPSOU-UR01SS24-110221-1	Natural	0 - 2	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586267007	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-24	BPSOU-UR01SS24-110221-2	Natural	2 - 6	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-24	BPSOU-UR01SS24-110221-3	Natural	6 - 12	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-25	BPSOU-UR01SS25-110221-1	Natural	0 - 2	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586267004	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-25	BPSOU-UR01SS25-110221-1-FD	Field Duplicate	0 - 2	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586267006	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-25	BPSOU-UR01SS25-110221-2	Natural	2 - 6	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586267005	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-25	BPSOU-UR01SS25-110221-3	Natural	6 - 12	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-26	BPSOU-UR01SS26-110221-1	Natural	0 - 2	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-26	BPSOU-UR01SS26-110221-2	Natural	2 - 6	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586267002	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-26	BPSOU-UR01SS26-110221-3	Natural	6 - 12	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586267003	moisture	As, Cd, Cu, Pb, Zn	Hg
UR-01-SS-27	BPSOU-UR01SS27-110221-1	Natural	0 - 2	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-27	BPSOU-UR01SS27-110221-2	Natural	2 - 6	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	N/A			
UR-01-SS-27	BPSOU-UR01SS27-110221-3	Natural	6 - 12	11/2/2021	As, Cd, Cu, Pb, Hg, Zn	10586267001	moisture	As, Cd, Cu, Pb, Zn	Hg

#### Abbreviations:

in bgs - inches below ground surface As - arsenic Cd - cadmium Cu - copper Pb - lead Hg - mercury Zn - zinc

## Table A4. Laboratory Qualifiers; Data Validation Qualifiers; Enforcement, Screening, and Rejected Codes; and Reason Codes Definitions

#### Lab Qual (Pace Analytical Services [Pace] Qualifiers)

J = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

M1 = Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 = RPD value was outside control limits.

U = Indicates the compound was analyzed for, but not detected.

N2 = The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply.

#### XRF Qual (XRF Qualifiers)

<LOD = Not detected at the reporting limit.

#### **DV Qual (Data Validation Qualifiers)**

A = results between the MDL and RL with no other qualifiers required are considered enforcement quality data.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

J- = The result is an estimated quantity, but the result may be biased low

UJ = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

#### S/E (Screening/Enforcement Quality Designation)

E = Enforcement quality.

S = Screening quality.

R = Unusable (Rejected) quality.

#### Reason Code (Data Validation Reason Codes )

<RL = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

D% = Qualified due to laboratory or XRF duplicate results outside control limits.

R% = Qualified due to XRF replicate results outside control limits.

FD = Qualified due to field duplicate results outside of control limits.

Pres = Qualified because preservation requirement was not met.

S% = Qualified due to percent recovery of the matrix spike outside of control limits.

CX = Qualified because frequency of check samples was not satisfied.

		Analyte		Arsenic	(	Cadmium		Copper		Lead		Mercury		Zinc
Standard Type	Sample ID	Analysis Date	Result (mg/kg)	Meets Control Limit (<10 mg/kg)	Result (mg/kg)	Meets Control Limit (<50 mg/kg)	Result (mg/kg)	Meets Control Limit (<20 mg/kg)	Result (mg/kg)	Meets Control Limit (<10 mg/kg)	Result (mg/kg)	Meets Control Limit (<10 mg/kg)	Result (mg/kg)	Meets Control Limit (<10 mg/kg)
SiO2	P_20211102_98052_142	11/2/2021	<2.95	Yes	9.99	Yes	<11.74	Yes	<3.85	Yes	<4.94	Yes	<5.85	Yes
SiO2	P_20211102_98052_179	11/2/2021	<2.61	Yes	9.47	Yes	<11.97	Yes	<3.36	Yes	<4.67	Yes	<5.47	Yes
SiO2	P_20211103_98052_184	11/3/2021	<2.58	Yes	12.49	Yes	<11.51	Yes	<3.31	Yes	<4.79	Yes	<5.78	Yes
SiO2	P_20211103_98052_210	11/3/2021	<2.65	Yes	8.48	Yes	<11.42	Yes	<3.47	Yes	<4.81	Yes	<5.67	Yes
SiO2	P_20211103_98052_236	11/3/2021	<2.5	Yes	14.97	Yes	<11.46	Yes	<3.2	Yes	<4.67	Yes	<5.6	Yes
SiO2	P_20211103_98052_262	11/3/2021	<2.78	Yes	9.54	Yes	<11.4	Yes	<3.51	Yes	<4.68	Yes	<5.48	Yes
SiO2	P_20211103_98052_278	11/3/2021	<2.59	Yes	8.71	Yes	<11.96	Yes	<3.38	Yes	<4.78	Yes	<5.17	Yes

		Analyte		Arsenic	(	Cadmium		Copper		Lead		Mercury		Zinc
Standard Type	Sample ID	Analysis Date	Result (mg/kg)	Meets Control Limit (0-35 mg/kg)	Result (mg/kg)	Meets Control Limit (0-60 mg/kg)	Result (mg/kg)	Meets Control Limit (0-60 mg/kg)	Result (mg/kg)	Meets Control Limit (0-35 mg/kg)	Result (mg/kg)	Meets Control Limit (0-12 mg/kg)	Result (mg/kg)	Meets Control Limit (50-160 mg/kg)
NIST 2709a	P_20211102_98052_143	11/2/2021	11.10	Yes	15.03	Yes	30.45	Yes	19.15	Yes	<6.52	Yes	85.61	Yes
NIST 2709a	P_20211102_98052_180	11/2/2021	16.99	Yes	<7.63	Yes	35.29	Yes	18.87	Yes	<6.41	Yes	87.29	Yes
NIST 2709a	P_20211103_98052_185	11/3/2021	13.66	Yes	10.15	Yes	34.37	Yes	14.80	Yes	<6.31	Yes	88.69	Yes
NIST 2709a	P_20211103_98052_211	11/3/2021	16.03	Yes	12.59	Yes	22.93	Yes	10.63	Yes	<6.33	Yes	89.77	Yes
NIST 2709a	P_20211103_98052_237	11/3/2021	15.57	Yes	12.53	Yes	29.04	Yes	17.33	Yes	<6.27	Yes	89.82	Yes
NIST 2709a	P_20211103_98052_263	11/3/2021	15.58	Yes	<7.63	Yes	34.58	Yes	12.82	Yes	<6.58	Yes	94.92	Yes
NIST 2709a	P_20211103_98052_279	11/3/2021	11.10	Yes	10.36	Yes	27.43	Yes	15.84	Yes	<6.21	Yes	95.40	Yes

		Analyte		Arsenic	(	Cadmium		Copper		Lead		Mercury		Zinc
Standard Type	Sample ID	Analysis Date	Result (mg/kg)	Meets Control Limit (400-600 mg/kg)	Result (mg/kg)	Meets Control Limit (400-600 mg/kg)	Result (mg/kg)	Meets Control Limit (N/A)	Result (mg/kg)	Meets Control Limit (400-600 mg/kg)	Result (mg/kg)	Meets Control Limit (N/A)	Result (mg/kg)	Meets Control Limit (N/A)
RCRA	P_20211102_98052_144	11/2/2021	481.05	Yes	491.23	Yes	27.05	N/A	475.35	Yes	<7.09	N/A	43.63	N/A
RCRA	P_20211102_98052_181	11/2/2021	487.28	Yes	526.02	Yes	<15.58	N/A	480.72	Yes	<6.8	N/A	53.67	N/A
RCRA	P_20211103_98052_186	11/3/2021	491.76	Yes	508.38	Yes	21.82	N/A	468.85	Yes	<6.79	N/A	44.86	N/A
RCRA	P_20211103_98052_212	11/3/2021	514.58	Yes	527.54	Yes	27.13	N/A	490.14	Yes	<7.18	N/A	44.44	N/A
RCRA	P_20211103_98052_238	11/3/2021	495.94	Yes	517.56	Yes	29.61	N/A	480.15	Yes	<6.92	N/A	47.68	N/A
RCRA	P_20211103_98052_264	11/3/2021	488.94	Yes	528.01	Yes	28.25	N/A	480.94	Yes	<7.02	N/A	46.89	N/A
RCRA	P_20211103_98052_281	11/3/2021	494.77	Yes	515.81	Yes	20.93	N/A	476.34	Yes	<6.89	N/A	50.07	N/A

Notes:

< - Not detected value is the XRF error for analysis.

Abbreviations:

mg/kg - milligram per kilogram

SiO2 - Silicon Dioxide standard

NIST 2709a - NIST 2709a- Joaquin Soil sample

RCRA - Resource Conservation and Recovery Act Sample

				Analyte	Arse	nic	Cadmi	ium	Copp	ber	Lea	d	Merc	ury	Zin	c
Standard Type	Sample ID	Sample Name	Parent Sample	Analysis Date	Result (mg/kg)	RPD	Result (mg/kg)	RPD	Result (mg/kg)	RPD	Result (mg/kg)	RPD	Result (mg/kg)	RPD	Result (mg/kg)	RPD
Natural	P_20211102_98052_169	BPSOU-UR01SS22-110221-1		11/2/2021	33.83		<6.87		67.40		28.82		<5.86		79.20	
XRF Replicate	P_20211102_98052_177	BPSOU-UR01SS22-110221-1-R	BPSOU-UR01SS22-110221-1	11/2/2021	31.11	8.4%	<7.1	ND	50.55	28.6%	25.39	12.7%	<5.81	ND	85.52	7.7%
XRF Duplicate	P_20211102_98052_170	BPSOU-UR01SS22-110221-1-D	BPSOU-UR01SS22-110221-1	11/2/2021	30.87	9.2%	<7.05	ND	67.28	0.2%	25.82	11.0%	<5.89	ND	86.15	8.4%
Natural	P_20211103_98052_206	BPSOU-UR01SS15-110221-2		11/3/2021	17.05		10.24		103.46		157.75		<6.95		360.53	
XRF Replicate	P_20211103_98052_207	BPSOU-UR01SS15-110221-2-R	BPSOU-UR01SS15-110221-2	11/3/2021	13.55	22.9%	<7.54	ND	102.98	0.5%	161.64	2.4%	<6.92	ND	354.50	1.7%
XRF Duplicate	P_20211103_98052_208	BPSOU-UR01SS15-110221-2-D	BPSOU-UR01SS15-110221-2	11/3/2021	22.38	27.0%	<7.59	ND	120.73	15.4%	361.21	78.4%	<7.12	ND	442.50	20.4%
Natural	P_20211103_98052_232	BPSOU-UR01SS13-110221-3		11/3/2021	12.29		9.41		74.15		17.39		<6.51		132.37	
XRF Replicate	P_20211103_98052_233	BPSOU-UR01SS13-110221-3-R	BPSOU-UR01SS13-110221-3	11/3/2021	7.82	44.5%	<7.38	ND	65.58	12.3%	13.41	25.8%	<6.34	ND	134.00	1.2%
XRF Duplicate	P_20211103_98052_234	BPSOU-UR01SS13-110221-3-D	BPSOU-UR01SS13-110221-3	11/3/2021	6.11	67.2%	<7.49	ND	58.63	23.4%	14.20	20.2%	<6.83	ND	134.40	1.5%
Natural	P_20211103_98052_258	BPSOU-UR01SS05-110321-2		11/3/2021	<14.42		<7.84		78.79		211.17		<7.21		287.40	
XRF Replicate	P_20211103_98052_259	BPSOU-UR01SS05-110321-2-R	BPSOU-UR01SS05-110321-2	11/3/2021	24.55	ND	<7.98	ND	69.50	12.5%	306.17	36.7%	<7.43	ND	269.02	6.6%
XRF Duplicate	P_20211103_98052_260	BPSOU-UR01SS05-110321-2-D	BPSOU-UR01SS05-110321-2	11/3/2021	8.86	ND	<7.63	ND	69.82	12.1%	52.88	119.9%	<6.99	ND	262.45	9.1%
Natural	P_20211103_98052_274	BPSOU-UR01SS06-110321-3		11/3/2021	<5.84		<7.74		66.72		21.19		<6.45		112.25	
XRF Replicate	P_20211103_98052_275	BPSOU-UR01SS06-110321-3-R	BPSOU-UR01SS06-110321-3	11/3/2021	9.33	ND	<7.63	ND	61.34	8.4%	18.57	13.2%	<6.57	ND	119.85	6.6%
XRF Duplicate	P_20211103_98052_276	BPSOU-UR01SS06-110321-3-D	BPSOU-UR01SS06-110321-3	11/3/2021	<5.82	ND	<7.55	ND	68.65	2.9%	23.30	9.5%	<6.58	ND	134.45	18.0%

Notes:

< - Not detected value is the XRF error for analysis.

Abbreviations:

mg/kg - milligram per kilogram

ND = non-detected

RPD = relative percent differnce

## Attachment 1 Data Validation Checklists

Attachment 1.1 Data Validation Checklists for XRF Analyses Site:Butte Priority Soils Operable UnitProject:Unreclaimed Sites 2021Sample Date:11/2/2021Data Validator:Josie McElroy

 Case No:
 P\_20211102

 Sample Matrix:
 Soil

 Analysis Dates:
 11/2/2021

 Validation Dates:
 12/13/2021

Laboratory: Pioneer Technical Services, Inc. Analyses: Arsenic; Cadmium; Copper; Lead; Mercury; Zinc

#### 1. Holding Times

Analyte	Laboratory	Matrix	Method	Holding Times	Collection Date	Analysis Date(s)	Holding Time Met (Y/N)	Affected Data Flagged (Y/N)
As, Cd, Cu, Pb, Hg, Zn	Pioneer	Soil	XRF	N/A	11/2/2021	11/2/2021	N/A	N/A
What sample p sieving etc.)?	flagged because preparation steps	were perfor	med (i.e. dryii	• Dry	ing and sieving		N X	
	bles prepped acco	•	-			Y X	N	
Describe Any . Comments:	Actions Taken:	N	one required					
2. Energy Calibra	ation (System (	Check)						
Was the en	ergy calibration pergy calibration bergy calibration bergy calibration r	Resolution	below 195?		r day?	Y X N Y X N Y X N		
Describe A	ny Actions Take	n: No	ne required					
Comments	:							
3. SiO <sub>2</sub> Standards	5							
Was the Si Were the S	O <sub>2</sub> Standard analy O <sub>2</sub> Standard analy iO <sub>2</sub> Standard resu lata flagged becau	yzed at the i ilts within t	frequency of 1 he control lim	per 20 samp its?	les?	Y X N Y X N Y X N Y N X		
Describe A	ny Actions Take	n: No	one required					
Comments	:							
4. Calibration Ch								
Were the ap Were CCS	ppropriate Calibr ppropriate CCS a results within the lata flagged becau	nalyzed at t e control lin	he frequency nits?		at the beginning of analysis? atural samples?	Y X N Y X N Y X N Y X N Y X N		
Describe A	ny Actions Take				eck samples that had a known erefore, all mercury results ha	amount (true value) of mercury greative been qualified "UJ".	ter than the	
Comments								

#### 5. Duplicate Sample Results

1	ate Samples analyzed at the frequency of 1 per	1	Y X N
Were Duplic	cate Sample results within the control window?		I A N
Were any da	ta flagged because of duplicate sample results?		Y N X
Describe An	y Actions Taken: None required		
Comments:	The following XRF duplicate sample was an	nalyzed on 11/2/2021:	
	XRF Duplicate Sample	Primary Sample	
	BPSOU-UR01SS22-110221-1-D	BPSOU-UR01SS22-110221-1	
	The following XRF field duplicate sample v	vas analyzed on 11/2/2021:	
	XRF Field Duplicate Sample	Primary Sample	
	BPSOU-UR01SS25-110221-1-FD	BPSOU-UR01SS25-110221-1	

#### 6. Replicate Sample Results

Were replicat	te Samples analyzed at the frequency of 1 p e sample results within the control window? a flagged because of replicate sample results	Y X N Y X N Y N X			
Describe Any Actions Taken: None required					
Comments:	The following XRF replicate sample was				
	XRF Replicate Sample				
	BPSOU-UR01SS22-110221-1-R				

#### 7. Overall Assessment

Are there analytical limitations of the data that users should be aware of?

If so, explain: On this WO P\_20211102, the following qualifications were made:

Nineteen (19) mercury results have been qualified "UJ" due to the lack of an appropriate calibration check sample.

Comments:

#### 8. Authorization of Data Validation

Data Validator Name: Josie McElroy				
Signature:	Josie M'Elroy	Date:	<u>12/13/2021</u>	
Reviewed by:	Jara Ward	Date:	<u>12/20/2021</u>	

Y X N

Site:Butte Priority Soils Operable UnitProject:Unreclaimed Sites 2021Sample Date:11/2/2021, 11/3/2021Data Validator:Josie McElroy

 Case No:
 P\_20211103

 Sample Matrix:
 Soil

 Analysis Dates:
 11/3/2021

 Validation Dates:
 12/13/2021

Laboratory: Pioneer Technical Services, Inc. Analyses: Arsenic; Cadmium; Copper; Lead; Mercury; Zinc

#### 1. Holding Times

Analyte	Laboratory	Matrix	Method	Holding Times	Collection Date	Analysis Date(s)	Holding Time Met (Y/N)	Affected Data Flagged (Y/N)
As, Cd, Cu, Pb, Hg, Zn	Pioneer	Soil	XRF	N/A	11/2/2021, 11/3/2021	11/3/2021	N/A	N/A
What sample p sieving etc.)? Were the samp	flagged because oreparation steps les prepped acco Actions Taken:	were perform	med (i.e. dryii	Dry	ing and sieving		N X	
Was the en Did the ene	ergy calibration p ergy calibration l ergy calibration r ny Actions Take	performed a Resolution l un for at lea	below 195?		r day?	Y X N Y X N Y X N		
Was the Sid Were the S Were any d	O <sub>2</sub> Standard anal O <sub>2</sub> Standard anal iO <sub>2</sub> Standard resu iO <sub>2</sub> Standard resu lata flagged becan ny Actions Take	yzed at the f ilts within th use of the S	frequency of 1 he control limit	per 20 samp its?	les?	Y X N Y X N Y X N Y N Z	<u> </u>	
Were the ap Were CCS		nalyzed at t e control lin	he frequency nits?		at the beginning of analysis? atural samples?	Y X N Y X N Y X N Y X N Y X N		
	ny Actions Take				eck samples that had a known erefore, all mercury results ha	amount (true value) of mercury greated with the second sec	ater than the	
Comments:								

#### 5. Duplicate Sample Results

Were Duplicate Samples analyzed at the frequency of 1 per 20 natural samples? Were Duplicate Sample results within the control window? Were any data flagged because of duplicate sample results?

Y	Х	Ν	
Y		Ν	Х
Y	Х	Ν	

Describe Any Actions Taken: The following XRF duplicate samples were analyzed on 11/3/2021:

XRF Duplicate Sample	Primary Sample
BPSOU-UR01SS15-110221-2-D	BPSOU-UR01SS15-110221-2
BPSOU-UR01SS13-110221-3-D	BPSOU-UR01SS13-110221-3
BPSOU-UR01SS05-110321-2-D	BPSOU-UR01SS05-110321-2

For the BPSOU-UR01SS15-110221-2-D and BPSOU-UR01SS15-110221-2 duplicate pair, the RPD for lead (78%) was outside control limits (35%). BPSOU-UR01SS15-110221-2 was qualified "J" for lead.

For the BPSOU-UR01SS13-110221-3-D and BPSOU-UR01SS13-110221-3 duplicate pair, the RPD for arsenic (67%) was outside control limits (35%). BPSOU-UR01SS13-110221-3 was qualified "J" for arsenic.

For the BPSOU-UR01SS05-110321-2-D and BPSOU-UR01SS05-110321-2 duplicate pair, the RPD for lead (120%) was outside control limits (35%). BPSOU-UR01SS05-110321-2 was qualified "J" for lead.

The following XRF field duplicate sample was analyzed on 11/3/2021:

XRF Field Duplicate Sample	Primary Sample	
BPSOU-UR01SS07-110321-1-FD	BPSOU-UR01SS07-110321-1	

For the BPSOU-UR01SS07-110321-1-FD and BPSOU-UR01SS07-110321-1 duplicate pair, the RPD for lead (50%) was outside control limits (35%). BPSOU-UR01SS07-110321-1-FD and BPSOU-UR01SS07-110321-1 were qualified "J" for lead.

#### Comments: The following XRF duplicate sample was also analyzed on 11/3/2021:

XRF Duplicate Sample	Primary Sample	
BPSOU-UR01SS06-110321-3-D	BPSOU-UR01SS06-110321-3	

The following XRF field duplicate samples were also analyzed on 11/3/2021:

XRF Field Duplicate Sample	Primary Sample
BPSOU-UR01SS01-110321-3-FD	BPSOU-UR01SS01-110321-3
BPSOU-UR01SS02-110321-2-FD	BPSOU-UR01SS02-110321-2
BPSOU-UR01SS06-110321-1-FD	BPSOU-UR01SS06-110321-1

#### 6. Replicate Sample Results

Were Replicate Samples analyzed at the frequency of 1 per 20 natural samples? Were replicate sample results within the control window? Were any data flagged because of replicate sample results?



Describe Any Actions Taken: The following XRF replicate sample was analyzed on 11/3/2021:

XRF Replicate Sample	Primary Sample
BPSOU-UR01SS13-110221-3-R	BPSOU-UR01SS13-110221-3
BPSOU-UR01SS05-110321-2-R	BPSOU-UR01SS05-110321-2

For the BPSOU-UR01SS13-110221-3-R and BPSOU-UR01SS13-110221-3 duplicate pair, the RPD for arsenic (44%) was outside control limits (35%). BPSOU-UR01SS13-110221-3 was qualified "J" for arsenic. The arsenic result for BPSOU-UR01SS13-110221-3 was previously qualified "J" due to the RPD of the XRF duplicate sample being outside the control limits; therefore, the final qualifications will be "J".

For the BPSOU-UR01SS05-110321-2-R and BPSOU-UR01SS05-110321-2 duplicate pair, the RPD for lead (37%) was outside control limits (35%). BPSOU-UR01SS05-110321-2 was qualified "J" for lead. The lead results for BPSOU-UR01SS05-110321-2 were previously qualified "J" due to the RPD of the XRF duplicate sample being outside the control limits; therefore, the final qualification will be "J" for lead.

Comments: The following XRF replicate sample was also analyzed on 11/3/2021:

XRF Replicate Sample	Primary Sample
BPSOU-UR01SS15-110221-2-R	BPSOU-UR01SS15-110221-2
BPSOU-UR01SS06-110321-3-R	BPSOU-UR01SS06-110321-3

# 7. Overall Assessment Are there analytical limitations of the data that users should be aware of? Y X N If so, explain: On this WO P\_20211103, the following qualifications were made: One (1) arsenic result was qualified "J" due to elevated XRF duplicate and replicate RPDs. One (1) lead result was qualified "J" due to an elevated XRF duplicate RPD. One (1) lead result was qualified "J" due to elevated XRF duplicate and replicate RPDs. Two (2) lead results were qualified "J" due to an elevated XRF field duplicate RPD. Sixty-two (62) mercury results have been qualified "UJ" due to the lack of an appropriate calibration check sample. Comments: Comments:

#### 8. Authorization of Data Validation

Data Validator Name: Sara Ward				
Signature:	Josie M'Elroy	_ Date:	<u>12/13/2021</u>	
Reviewed by:	JaraWard	Date:	12/20/2021	

### Attachment 1.2 Data Validation Checklists for Laboratory Analyses

Site: Butte Priority Soils Operable Unit	Case No: 10586267	Laboratory: Pace Analytical
Project: Unreclaimed Sites 2021	Sample Matrix: Soil	Analyses: As, Cd, Cu, Pb, Zn (EPA
Sample Date(s): 11/02/2021	Analysis Date(s): 11/08/2021, 11/15/20	021, 6010D), Hg (EPA 7471B), and Percent
	11/16/2021	Moisture (ASTM D2974)
Data Validator: Sara Ward	<b>Validation Date(s):</b> 11/29/2021	

#### 1. Holding Times

Analyte	Laboratory	Matrix	Method	Holding Times	Collection Date(s):	Analysis Date(s)	Holding Time Met (Y/N)	Affected Data Flagged (Y/N
As, Cd, Cu, Pb, and Zn			EPA 6010D	6 months		11/15/2021	Y	N/A
Hg	Pace	Soil	EPA 7471B	28 days	11/02/2021	11/16/2021	Y	N/A
Percent Moisture			ASTM D2974	N/A		11/08/2021	Y	N/A
Were any data flagged b Were any data flagged b	because of preserve	ation proble	ms?				Y N X Y N X	
Describe Any Actions T Comments: The rece- time.		Required. as reported	by the laborator	y was 1.4°C. 7	The samples were	e shipped on ice :	and analyzed withi	n holding
Blanks								
Were Method Blanks (M		he frequency	y of 1 per analyti	cal batch?			Y X N	
Were MBs within the co Were any data flagged b		roblems?					Y X N Y N X	-
were any data hagged b	ecause of blank p	iobients:						J
Describe Any Actions T	aken: None	Required.						
Comments: MBs for	EPA 7471B and I	EPA 6010D	were non-detect.	. A MB was n	ot analyzed for A	ASTM D2974.		
Laboratory Control Samp	les							
Were Laboratory Contro	ol Samples (LCS)		the frequency of	1 per batch?		Y	X N	
Were LCS results within						Y	X N	
Were any data flagged b	ecause of LCS pro	oblems?				Y	N X	
Describe Any Actions Ta	aken: None	Required.						
	%R were within	limits for El	PA 6010D and E	PA 7471B. A	n LCS was not a	nalyzed for AST	M D2974.	
Comments: The LCS								
Duplicate Sample Results Were Laboratory Duplic	cate Samples (LDS		at the frequency	of 1 per batch	?		Y X N	
Duplicate Sample Results Were Laboratory Duplic Were LDS results withir	cate Samples (LDS 1 the control wind	ow?	at the frequency	of 1 per batch	?		Y X N	
Duplicate Sample Results Were Laboratory Duplic	cate Samples (LDS 1 the control wind	ow?	at the frequency	of 1 per batch	?			

Comments: For method EPA 7471B batch 781724, an LMS/LMS Duplicate (LMSD) generated from BPSOU-UR01SS27-110221-3 was used for the LDS calculation. The RPD was within control limits.

For method EPA 6010D batch 781719, an LMS/LMS Duplicate (LMSD) generated from BPSOU-UR01SS27-110221-3 was used for the LDS calculations. The RPDs were within control limits.

For ASTM D2974, a duplicate generated from BPSOU-UR01SS27-110221-3 and a duplicate generated from BPSOU-UR01SS22-110221-2 were used for the LDS calculations. The RPDs were within control limits.

#### 5. Matrix Spike Sample Results

Were Laboratory Matrix Spike S Were LMS results within the co	Samples (LMS) analyzed at the frequency of 1 per batch? ntrol window?	Y X N Y N X
Were any data flagged because	of LMS problems?	Y X N
Describe Any Actions Taken:	For method EPA 7471B batch 781724, an LMS/LMSD was gener of the LMS/LMSD for mercury (55% and 66%, respectively) were BPSOU-UR01SS27-110221-3 was qualified "J-" for mercury. Pe not meet the technical criteria, apply the action to all samples of to sufficiently similar" (EPA, 2017). No sample were considered sub qualifications were warranted.	e outside control limits (80-120%); therefore, or the NFG, "For a spike sample analysis that does the same matrix if the samples are considered
	For method EPA 6010D batch 781719, an LMS/LMSD was gener of the LMSD for lead (71%) and the LMS/LMSD for zinc (49% a (75-125%); therefore, BPSOU-UR01SS27-110221-3 was qualified spike sample analysis that does not meet the technical criteria, ap, the samples are considered sufficiently similar" (EPA, 2017). No therefore, no additional qualifications were warranted. The remain	nd 58%, respectively) were outside control limits d "J-" for lead and zinc. Per the NFG, "For a ply the action to all samples of the same matrix if o sample were considered sufficiently similar;

#### 6. Field Blanks

0. FICIU DIAIRS	
Were field blanks submitted as specified in the QAPP?	Y N N/A X
Were field blanks within the control window?	Y N N/A X
Were any data qualified because of field blank problems?	Y N N/A X
Describe Any Actions Taken: None Required.	
Comments: Field blanks were not required as there is no sampling equipment re-used.	
7. Field Duplicates	
Were field duplicates submitted as specified in the QAPP?	Y X N N/A
Were results for field duplicates within the control window?	Y N X N/A
Were any data qualified because of field duplicate problems?	Y X N N/A
One field duplicate pair was submitted on this work order, BPSOU-UR 110221-1-FD. The arsenic results for the duplicate sample were less th difference between the natural sample and field duplicate was greater t	nan 5 times the reporting limit, but the absolute

difference between the natural sample and field duplicate was greater than the reporting limit. The arsenic results for BPSOU-UR01SS25-110221-1 and BPSOU-UR01SS25-110221-1-FD were qualified "J". Per the NFG, "*For a duplicate sample analysis that does not meet the technical criteria, apply the action to all samples of the same matrix if the samples are considered sufficiently similar*" (EPA, 2017). No samples were considered sufficiently similar;

therefore, no additional qualifications were warranted.

Comments: The precision for all remaining analytes was within control limits.

#### 8. Overall Assessment

f so, explain:	On this WO 10586267, the following of	qualifications were mad	e:					
	In addition to the qualifications outlined in the sections above, results which were reported between the method detection							
	(MDL) and the reporting limit (RL) we							
	The table below lists the qualifications	on the natural samples						
	Field ID	Analyte	Final Qualification	Reason Code				
	BPSOU-UR01SS27-110221-3	Lead	J-	S%				
	BPSOU-UR01SS27-110221-3	Zinc	J-	S%				
	BPSOU-UR01SS25-110221-1	Arsenic	J	FD				
	BPSOU-UR01SS21-110221-3	Cadmium	А	<rl< td=""></rl<>				
	BPSOU-UR01SS27-110221-3	Mercury	J-	S%				
	The table below lists the qualifications	on the field quality cor	trol samples:					
	Field ID	Analyte	Final Qualification	Reason Code				
	BPSOU-UR01SS25-110221-1-FD	Arsenic	J	FD				
	Reason for qualification: S% = Matrix Spike							
	FD = Field Duplicate							
	<RL = The result is above the method	detection limit and belo	w the reporting limit					
			the reporting minu					
Comments:								

9. Authoriza	tion of Data Validation	
Data Validator		
Name: Sara	Ward	Reviewed by: Josie McElroy
Signature:	Jara Ward	Josie Mr Ehoy.
Date:	11/29/2021	11/30/2021

Site: Butte Priority Soils Operable Unit Unreclaimed Sites 2021 **Project:** Sample Date(s): 11/02/2021, 11/03/2021

Case No: 10586277 Sample Matrix: Soil Analysis Date(s): 11/08/2021, 11/15/2021, 11/16/2021 Validation Date(s): 11/29/2021

Laboratory: Pace Analytical Analyses: As, Cd, Cu, Pb, Zn (EPA 6010D), Hg (EPA 7471B), and Percent Moisture (ASTM D2974)

Data Validator: Sara Ward

#### 1. Holding Times

Analyte	Laboratory	Matrix	Method	Holding Times	Collection Date(s):	Analysis Date(s)	Holding Time Met (Y/N)	Affected Data Flagged (Y/N
As, Cd, Cu, Pb, and Zn			EPA 6010D	6 months		11/15/2021	Y	N/A
Hg	Pace	Soil	EPA 7471B	28 days	11/02/2021, 11/03/2021	11/16/2021	Y	N/A
Percent Moisture			ASTM D2974	N/A		11/08/2021	Met (Y/N)         Y       Y         Y       N       X         Y       N       X         Y       N       X         Y       N       X         and analyzed within       X         Y       X       N         Y       X       N         Y       X       N         X       N       X         X       N       X         X       N       X         X       N       X	N/A
Were any data flagged b Were any data flagged b			ms?				Y N X Y N X	
Describe Any Actions T	Caken: None	Required.						
Comments: The rece time.	iving temperature	as reported	by the laborator	y was 1.4°C. 7	The samples were	e shipped on ice a	and analyzed withi	n holding
2. Blanks								
Were Method Blanks (M Were MBs within the co Were any data flagged b	ontrol window?	1	y of 1 per analyti	ical batch?			Y X N	-
Describe Any Actions T	Caken: None	Required.						
Comments: MBs for	EPA 7471B and H	EPA 6010D	were non-detect	. A MB was n	ot analyzed for A	ASTM D2974.		
8. Laboratory Control Samp								
Were Laboratory Contro Were LCS results within			the frequency of	1 per batch?		Y Y		
Were any data flagged b						Y Y		
Describe Any Actions T	aken: None	Required.						
Comments: The LCS	%R were within	imits for E	PA 6010D and E	PA 7471B. A	n LCS was not a	nalyzed for AST	M D2974.	
I. Duplicate Sample Results								
Were Laboratory Duplic			at the frequency	of 1 per batch	?		Y X N	
Were LDS results within								4
Were any data flagged b	because of LDS pro	oblems?					YXN	Ţ
Describe Any Actions T	110221- for BPSC meet the sufficient	l was used to DU-UR01S technical ca	for the LDS calcu S19-110221-1 we riteria, apply the (EPA, 2017). N	ulation. The R ere qualified ". action to all s	PD (58%) was of J". Per the NFG, amples of the sar	utside control lin "For a duplicate ne matrix if the s	from BPSOU-UR0 hits (20%). The ma e sample analysis t amples are considu- erefore, no additio	ercury results hat does not ered

For method EPA 7471B batch 784057, an LMS/LMSD generated from BPSOU-UR01SS01-110321-3 was used for the LDS calculation. The RPD was within control limits. For method EPA 6010D batch 782084, an LMS/LMSD generated from BPSOU-UR01SS19-110221-1 was used for the LDS

calculations. The RPDs were within control limits.

For ASTM D2974, a duplicate generated from BPSOU-UR01SS19-110221-1 and a duplicate generated from BPSOU-UR01SS15-110221-3 were used for the LDS calculations. The RPDs were within control limits.

Comments:

#### 5. Matrix Spike Sample Results

Were Laborat	ory Matrix Spike	Samples (LMS) analyzed at the frequency of 1 per batch?	Y X N
Were LMS re	sults within the co	ontrol window?	Y N X
Were any data	a flagged because	Y X N	
Describe Any	Actions Taken:	For method EPA 7471B batch 782131, an LMS/LMSD was generated from BPS of the LMSD for mercury (49%) was outside control limits (80-120%); therefore was qualified "J-" for mercury. Per the NFG, "For a spike sample analysis that apply the action to all samples of the same matrix if the samples are considered as No sample were considered sufficiently similar; therefore, no additional qualificar results had a previous qualification of "J" due to an elevated duplicate RPD; therefore method EPA 6010D batch 782084, an LMS/LMSD was generated from BPS of the LMS/LMSD for lead (74% and 66%, respectively) and zinc (60% and 55% limits (75-125%); therefore, BPSOU-UR01SS19-110221-1 was qualified "J-" for a spike sample analysis that does not meet the technical criteria, apply the action the samples are considered sufficiently similar" (EPA, 2017). No sample were of therefore, no additional qualifications were warranted. The remaining %R were	b, BPSOU-UR01SS19-110221-1 does not meet the technical criteria, sufficiently similar" (EPA, 2017). ations were warranted. The mercury efore, the final qualification is "J". OU-UR01SS19-110221-1. The %R 6, respectively) were outside control r lead and zinc. Per the NFG, "For n to all samples of the same matrix if considered sufficiently similar;
Comments:		7471B batch 784057, an LMS/LMSD was generated from BPSOU-UR01SS01-110 e within control limits (80-120%).	0321-3. The %R of the LMS/LMSD
	An LMS was no	t analyzed for ASTM D2974.	

#### 6. Field Blanks

Were field blanks submitted as specified in the QAPP? Were field blanks within the control window? Were any data qualified because of field blank problems?	Y N N/A X Y N N/A X Y N N/A X
Describe Any Actions Taken: None Required.	I N N/A A
Comments: Field blanks were not required as there is no sampling equipment re-used.	
7. Field Duplicates	
Were field duplicates submitted as specified in the QAPP?	Y X N N/A
Were results for field duplicates within the control window?	Y X N N/A
Were any data qualified because of field duplicate problems?	Y N X N/A

Describe Any Actions Taken: None Required.

Comments: One field duplicate pair was submitted on this work order, BPSOU-UR01SS01-110321-3 and BPSOU-UR01SS01-110321-3-FD. The precision for all analytes was within control limits.

#### 8. Overall Assessment

(MDL) and the reporting limit (RL) were qualified "A" when no additional qualifications were warranted.The table below lists the qualifications on the natural samples:Field IDAnalyteFinal QualificationReason CodeBPSOU-UR01SS19-110221-1LeadJ-S%BPSOU-UR01SS19-110221-1ZincJ-S%BPSOU-UR01SS19-110221-1MercuryJS%, D%BPSOU-UR01SS01-110321-3MercuryA <rl< td="">The table below lists the qualifications on the field quality control samples:Field IDAnalyteFinal QualificationReason CodeBPSOU-UR01SS01-110321-3-FDMercuryA<rl< td="">Reason for qualification:S% = Matrix SpikeD% = Laboratory Duplicate Sample<rl =="" above="" and="" below="" detection="" is="" limit="" limit.<="" method="" reporting="" result="" td="" the=""></rl></rl<></rl<>	Are mere allary	tical limitations of the data that users shou	ind be aware of?		Y X N			
(MDL) and the reporting limit (RL) were qualified "A" when no additional qualifications were warranted.The table below lists the qualifications on the natural samples:Field IDAnalyteFinal QualificationReason CodeBPSOU-UR01SS19-110221-1LeadJ-S%BPSOU-UR01SS19-110221-1ZincJ-S%BPSOU-UR01SS19-110221-1MercuryJS%, D%BPSOU-UR01SS01-110321-3MercuryA <rl< td="">The table below lists the qualifications on the field quality control samples:Field IDAnalyteFinal QualificationReason CodeBPSOU-UR01SS01-110321-3-FDMercuryA<rl< td="">Reason for qualifications:S% = Matrix SpikeD% = Laboratory Duplicate Sample<rl =="" above="" and="" below="" detection="" is="" limit="" limit.<="" method="" reporting="" result="" td="" the=""></rl></rl<></rl<>	If so, explain:	On this WO 10586277, the following q	ualifications were mac	le:				
Field IDAnalyteFinal QualificationReason CodeBPSOU-UR01SS19-110221-1LeadJ-S%BPSOU-UR01SS19-110221-1ZincJ-S%BPSOU-UR01SS01-110321-3MercuryJS%, D%BPSOU-UR01SS01-110321-3MercuryA <rl< td="">The table below lists the qualifications on the field quality control samples:Field IDAnalyteBPSOU-UR01SS01-110321-3-FDMercuryAA<rl< td="">Reason for qualification:S%= Matrix SpikeD%= Laboratory Duplicate Sample<rl =="" above="" and="" below="" detection="" is="" limit="" limit.<="" method="" reporting="" result="" td="" the=""></rl></rl<></rl<>		In addition to the qualifications outlined in the sections above, results which were reported between the method detection limit (MDL) and the reporting limit (RL) were qualified "A" when no additional qualifications were warranted.						
ImageImageImageImageBPSOU-UR01SS19-110221-1LeadJ-S%BPSOU-UR01SS19-110221-1ZincJ-S%BPSOU-UR01SS19-110221-1MercuryJS%, D%BPSOU-UR01SS01-110321-3MercuryA <rl< td="">The table below lists the qualifications on the field quality control samples:Field IDAnalyteBPSOU-UR01SS01-110321-3-FDMercuryAA<rl< td="">Reason for qualification:S%= Matrix SpikeD%= Laboratory Duplicate Sample<rl< td="">= The result is above the method detection limit and below the reporting limit.</rl<></rl<></rl<>		The table below lists the qualifications	on the natural samples	:	-			
BPSOU-UR01SS19-110221-1ZincJ-S%BPSOU-UR01SS19-110221-1MercuryJS%, D%BPSOU-UR01SS01-110321-3MercuryA $<$ RLThe table below lists the qualifications on the field quality control samples:Field IDAnalyteBPSOU-UR01SS01-110321-3-FDMercuryAMercuryA $<$ RLReason for qualification:S% = Matrix SpikeD% = Laboratory Duplicate Sample <rl =="" above="" and="" below="" detection="" is="" limit="" limit.<="" method="" reporting="" result="" td="" the=""></rl>		Field ID	Analyte	Final Qualification	Reason Code			
BPSOU-UR01SS19-110221-1MercuryJS%, D%BPSOU-UR01SS01-110321-3MercuryA $<$ RLThe table below lists the qualifications on the field quality control samples:Field IDAnalyteFinal QualificationReason CodeBPSOU-UR01SS01-110321-3-FDMercuryA $<$ RLReason for qualification:S% = Matrix SpikeD% = Laboratory Duplicate Sample <rl =="" above="" and="" below="" detection="" is="" limit="" limit.<="" method="" reporting="" result="" td="" the=""></rl>		BPSOU-UR01SS19-110221-1	Lead	J-	S%			
BPSOU-UR01SS01-110321-3       Mercury       A <rl< th="">         The table below lists the qualifications on the field quality control samples:         Field ID       Analyte       Final Qualification       Reason Code         BPSOU-UR01SS01-110321-3-FD       Mercury       A       <rl< td="">         Reason for qualification:         S% = Matrix Spike       D% = Laboratory Duplicate Sample         O% = Laboratory Duplicate Sample       <rl =="" above="" and="" below="" detection="" is="" limit="" limit.<="" method="" reporting="" result="" td="" the=""></rl></rl<></rl<>		BPSOU-UR01SS19-110221-1	Zinc	J-	S%			
Field ID       Analyte       Final Qualification       Reason Code         BPSOU-UR01SS01-110321-3-FD       Mercury       A <rl< td="">         Reason for qualification:       S% = Matrix Spike       D% = Laboratory Duplicate Sample         O% = Laboratory Duplicate Sample       <rl =="" above="" and="" below="" detection="" is="" limit="" limit.<="" method="" reporting="" result="" td="" the=""></rl></rl<>		BPSOU-UR01SS19-110221-1	Mercury	J	S%, D%			
Field ID       Analyte       Final Qualification       Reason Code         BPSOU-UR01SS01-110321-3-FD       Mercury       A <rl< td="">         Reason for qualification:       S% = Matrix Spike       Nercury       A       <rl< td="">         D% = Laboratory Duplicate Sample       <rl =="" above="" and="" below="" detection="" is="" limit="" limit.<="" method="" reporting="" result="" td="" the=""></rl></rl<></rl<>		BPSOU-UR01SS01-110321-3	Mercury	А	<rl< td=""></rl<>			
Reason for qualification: S% = Matrix Spike D% = Laboratory Duplicate Sample <rl =="" above="" and="" below="" detection="" is="" limit="" limit.<="" method="" reporting="" result="" td="" the=""><td></td><td>•</td><td></td><td></td><td>Reason Code</td></rl>		•			Reason Code			
Reason for qualification: S% = Matrix Spike D% = Laboratory Duplicate Sample <rl =="" above="" and="" below="" detection="" is="" limit="" limit.<="" method="" reporting="" result="" td="" the=""><td></td><td>BPSOU-UR01SS01-110321-3-FD</td><td>Mercury</td><td>А</td><td><rl< td=""></rl<></td></rl>		BPSOU-UR01SS01-110321-3-FD	Mercury	А	<rl< td=""></rl<>			
		S% = Matrix Spike D% = Laboratory Duplicate Sample						
Comments:								

#### 9. Authorization of Data Validation

Data Validator Name: Sara V	/ard	Reviewed by: Josie McElroy
Signature:	Jara Ward	Josie M'Ehoy.
Date:	11/30/2021	11/30/2021

Site: Butte Pri	ority Soils Operable Unit	Case No: 105863	96	Laboratory:	Pace Analytical
Project: Unrecl	laimed Sites 2021	Sample Matrix:	Soil	Analyses: As, Cd,	Cu, Pb, Zn (EPA
Sample Date(s):	11/02/2021, 11/03/2021	Analysis Date(s):	11/08/2021, 11/15/2021,	6010D), Hg (EPA	7471B), and Percent
-		-	11/16/2021	Moisture (ASTM I	D2974)
Data Validator:	Sara Ward	Validation Date(s):	11/30/2021		

# 1. Holding Times

Analyte	Laboratory	Matrix	Method	Holding Times	Collection Date(s):	Analysis Date(s)	Holding Time Met (Y/N)	Affected Data Flagged (Y/N
As, Cd, Cu, Pb, and Zn			SW6010D	6 months		11/15/2021	Y	N/A
Hg	Pace	Soil	SW7471B	28 days	11/02/2021, 11/03/2021	11/16/2021	Y	N/A
Percent Moisture			ASTM D2974	N/A		11/08/2021	Y         Y         Y         Y         Y         Y         Y         Y         Y         Y         Y         Y         Y         Y         Y         X         Y         X         Y         X         Y         X         N         X         N         X         N         X         N         X         N         X         N         X         N         X         N         X         N         X         N         X         N         X         N         X         N         X         N         X         N         X         N         X         N         X <td< td=""><td>N/A</td></td<>	N/A
Were any data flagged Were any data flagged	because of preserva	ation proble	ms?				Y N X Y N X	
Describe Any Actions Comments: The rec time.		Required. as reported	by the laborator	y was 2.8°C.	The samples wer	e shipped on ice	and analyzed withi	n holding
Blanks								
Were Method Blanks ( Were MBs within the o Were any data flagged	control window?		y of 1 per analyt	ical batch?			Y X N	-
Describe Any Actions	Taken: None	Required.						
Comments: MBs for	or EPA 7471B and I	EPA 6010D	were non-detect	. A MB was n	ot analyzed for A	ASTM D2974.		
Laboratory Control Sam								
Were Laboratory Cont: Were LCS results with Were any data flagged	in the control windo	ow?	the frequency of	1 per batch?		Y Y Y	X N	
Describe Any Actions	Taken: None	Required.						
Comments: The LC	S %R were within	limits for El	PA 6010D and E	PA 7471B. A	n LCS was not a	nalyzed for AST	M D2974.	
Duplicate Sample Result	s							
Were Laboratory Dupl Were LDS results with Were any data flagged	in the control wind	ow?	at the frequency	of 1 per batch	?		Y X N	-
Describe Any Actions	Taken: None Re	quired.						
	thod EPA 7471B ba S calculation. The I				SD) generated fr	om BPSOU-UR	018813-110221-1	was used for
	thod EPA 6010D ba S calculations. The			• ·	SD) generated fr	om BPSOU-UR	018813-110221-1	was used for
	TM D2974, a dupli -3 were used for the					uplicate generate	d from BPSOU-UF	R01SS08-

5. Matrix Spike Sample Results		
Were Laboratory Matrix Spike	Samples (LMS) analyzed at the frequency of 1 per batch?	Y X N
Were LMS results within the co	ontrol window?	Y N X
Were any data flagged because	Y X N	
Describe Any Actions Taken:	For method EPA 7471B batch 782132, an LMS/LMSD was genera of the LMSD for mercury (71%) was outside control limits (80-120 was qualified "J-" for mercury. Per the NFG, "For a spike sample apply the action to all samples of the same matrix if the samples are No sample were considered sufficiently similar; therefore, no additi	0%); therefore, BPSOU-UR01SS13-110221-1 analysis that does not meet the technical criteria, e considered sufficiently similar" (EPA, 2017).
	A 6010D batch 782085, an LMS/LMSD was generated from BPSOU- bre within control limits (75-125%).	UR01SS13-110221-1. The %R of the
An LMS was no	analyzed for ASTM D2974.	

#### 6. Field Blanks

Were field blanks submitted as specified in the QAPP?	Y N N/A X
Were field blanks within the control window?	Y N N/A X
Were any data qualified because of field blank problems?	Y N N/A X
Describe Any Actions Taken: None Required.	
Comments: Field blanks were not required as there is no sampling equipment re-used.	
7. Field Duplicates	
Were field duplicates submitted as specified in the QAPP?	Y X N N/A
Were results for field duplicates within the control window?	Y N X N/A
Were any data qualified because of field duplicate problems?	Y X N N/A

One field duplicate pair was submitted on this work order, BPSOU-UR01SS02-110321-2 and BPSOU-UR01SS02-110321-2-FD. The lead results for the natural sample and field duplicate were greater than 5 times the reporting limit, but the RPD was greater than 35%. The lead results for BPSOU-UR01SS02-110321-2 and BPSOU-UR01SS02-110321-2-FD were qualified "J". Per the NFG, "*For a duplicate sample analysis that does not meet the technical criteria, apply the action to all samples of the same matrix if the samples are considered sufficiently similar*" (EPA, 2017). No samples were considered sufficiently similar; therefore, no additional qualifications were warranted.

Comments: The precision for all remaining analytes was within control limits.

#### 8. Overall Assessment

Are there analyt	tical limitations of the data that users shou	ald be aware of?		Y X N
If so, explain:	On this WO 10586396, the following qu	ualifications were made:		
	In addition to the qualifications outlined	d in the sections above, re	sults which were reported bety	ween the method detection limit
	(MDL) and the reporting limit (RL) we			
	The table below lists the qualifications	on the natural samples.		
	Field ID	Analyte	Final Qualification	Reason Code
	BPSOU-UR01SS02-110321-2	Lead	J	FD
	BPSOU-UR01SS13-110221-2	Cadmium	А	<rl< th=""></rl<>
	BPSOU-UR01SS08-110221-1	Cadmium	А	<rl< td=""></rl<>
	BPSOU-UR01SS08-110221-2	Cadmium	А	<rl< th=""></rl<>
	BPSOU-UR01SS02-110321-2	Cadmium	А	<rl< td=""></rl<>
	BPSOU-UR01SS13-110221-1	Mercury	J-	S%
	BPSOU-UR01SS13-110221-2	Mercury	А	<rl< td=""></rl<>
	BPSOU-UR01SS13-110221-3	Mercury	А	<rl< td=""></rl<>
	BPSOU-UR01SS12-110221-2	Mercury	А	<rl< td=""></rl<>
		3.6	А	<rl< td=""></rl<>
	BPSOU-UR01SS08-110221-3	Mercury		
	BPSOU-UR01SS08-110221-3 BPSOU-UR01SS02-110321-2	Mercury Mercury	A	<rl <rl< th=""></rl<></rl 
		Mercury	А	
	BPSOU-UR01SS02-110321-2	Mercury	А	
	BPSOU-UR01SS02-110321-2 The table below lists the qualifications	Mercury on the field quality contro	A ol samples:	<rl< td=""></rl<>
	BPSOU-UR01SS02-110321-2 The table below lists the qualifications of Field ID	Mercury on the field quality contro Analyte	A al samples: Final Qualification	<rl Reason Code</rl 
	BPSOU-UR01SS02-110321-2 The table below lists the qualifications of Field ID BPSOU-UR01SS02-110321-2-FD	Mercury on the field quality contro Analyte Lead	A ol samples: Final Qualification J	<rl Reason Code FD</rl 
	BPSOU-UR01SS02-110321-2         The table below lists the qualifications         Field ID         BPSOU-UR01SS02-110321-2-FD         BPSOU-UR01SS02-110321-2-FD         Reason for qualification:	Mercury on the field quality contro Analyte Lead	A ol samples: Final Qualification J	<rl Reason Code FD</rl 
	BPSOU-UR01SS02-110321-2         The table below lists the qualifications         Field ID         BPSOU-UR01SS02-110321-2-FD         BPSOU-UR01SS02-110321-2-FD         Reason for qualification:         FD = Field Duplicate	Mercury on the field quality contro Analyte Lead	A ol samples: Final Qualification J	<rl Reason Code FD</rl 
	BPSOU-UR01SS02-110321-2         The table below lists the qualifications         Field ID         BPSOU-UR01SS02-110321-2-FD         BPSOU-UR01SS02-110321-2-FD         Reason for qualification:         FD = Field Duplicate         S% = Matrix Spike	Mercury on the field quality contro Analyte Lead Cadmium	A bl samples: Final Qualification J A	<rl Reason Code FD</rl 
	BPSOU-UR01SS02-110321-2         The table below lists the qualifications         Field ID         BPSOU-UR01SS02-110321-2-FD         BPSOU-UR01SS02-110321-2-FD         Reason for qualification:         FD = Field Duplicate	Mercury on the field quality contro Analyte Lead Cadmium	A bl samples: Final Qualification J A	<rl Reason Code FD</rl 
Comments:	BPSOU-UR01SS02-110321-2         The table below lists the qualifications         Field ID         BPSOU-UR01SS02-110321-2-FD         BPSOU-UR01SS02-110321-2-FD         Reason for qualification:         FD = Field Duplicate         S% = Matrix Spike	Mercury on the field quality contro Analyte Lead Cadmium	A bl samples: Final Qualification J A	<rl Reason Code FD</rl 
Comments:	BPSOU-UR01SS02-110321-2         The table below lists the qualifications         Field ID         BPSOU-UR01SS02-110321-2-FD         BPSOU-UR01SS02-110321-2-FD         Reason for qualification:         FD = Field Duplicate         S% = Matrix Spike	Mercury on the field quality contro Analyte Lead Cadmium	A bl samples: Final Qualification J A	<rl Reason Code FD</rl 
Comments: uthorization of D	BPSOU-UR01SS02-110321-2         The table below lists the qualifications         Field ID         BPSOU-UR01SS02-110321-2-FD         BPSOU-UR01SS02-110321-2-FD         Reason for qualification:         FD = Field Duplicate         S% = Matrix Spike <rl =="" above="" d<="" is="" method="" result="" td="" the=""></rl>	Mercury on the field quality contro Analyte Lead Cadmium	A bl samples: Final Qualification J A	<rl Reason Code FD</rl 
	BPSOU-UR01SS02-110321-2         The table below lists the qualifications         Field ID         BPSOU-UR01SS02-110321-2-FD         BPSOU-UR01SS02-110321-2-FD         Reason for qualification:         FD = Field Duplicate         S% = Matrix Spike <rl =="" above="" d<="" is="" method="" result="" td="" the=""></rl>	Mercury on the field quality contro Analyte Lead Cadmium	A bl samples: Final Qualification J A	<rl Reason Code FD</rl 
uthorization of D	BPSOU-UR01SS02-110321-2         The table below lists the qualifications         Field ID         BPSOU-UR01SS02-110321-2-FD         BPSOU-UR01SS02-110321-2-FD         Reason for qualification:         FD = Field Duplicate         S% = Matrix Spike <rl =="" above="" d<="" is="" method="" result="" td="" the=""></rl>	Mercury on the field quality contro <b>Analyte</b> Lead Cadmium letection limit and below	A bl samples: Final Qualification J A	<rl Reason Code FD</rl 
uthorization of D Validator e: Sara Ward	BPSOU-UR01SS02-110321-2         The table below lists the qualifications         Field ID         BPSOU-UR01SS02-110321-2-FD         BPSOU-UR01SS02-110321-2-FD         Reason for qualification:         FD = Field Duplicate         S% = Matrix Spike <rl =="" above="" d<="" is="" method="" result="" td="" the=""></rl>	Mercury on the field quality contro Analyte Lead Cadmium letection limit and below Revi	A Si samples: Final Qualification J A the reporting limit.	<rl Reason Code FD</rl 

Date:

11/30/2021

11/30/2021

Site: Butte Priority Soils Operable Unit Project: Unreclaimed Sites 2021 Sample Date(s): 11/03/2021 Case No: 10587272 Sample Matrix: Soil Analysis Date(s): 11/12/2021, 11/17/2021, 11/18/2021, 11/21/2021 Validation Date(s): 11/30/2021 Laboratory: Pace Analytical Analyses: As, Cd, Cu, Pb, Zn (EPA 6010D), Hg (EPA 7471B), and Percent Moisture (ASTM D2974)

Data Validator: Sara Ward

1. Holding Times

Analyte	Laboratory	Matrix	Method	Holding Times	Collection Date(s):	Analysis Date(s)	Holding Time Met (Y/N)	Affected D Flagged (Y
As, Cd, Cu, Pb, and Zn			EPA 6010D	6 months		11/17/2021	Y	N/A
Hg	Pace	Soil	EPA 7471B	28 days	11/03/2021	11/18/2021, 11/21/2021	Y	N/A
Percent Moisture			ASTM D2974	N/A		11/12/2021	Y	N/A
Were any data flagged beca Were any data flagged beca	use of preserva	ation proble eceiving ten	nperature as repo				Y N X Y X N w	
		ng time.	ercury results we	re quaimed	UJ/J The samp	pies were simppe	u oli ice allu allaryz	eu wiunn
		ple ID		N	fercury Results (n	ng/kg) Ou	alifier	
			SS03-110321-1		D	UJ		
			SS03-110321-2		D	UJ		
		BPSOU-UR01SS03-110321-2 BPSOU-UR01SS03-110321-3			ND UJ			
		BPSOU-UR01SS04-110321-1			ND UJ			
	BPS	BISOU UR01SS04-110321-2			ND U			
Describe Any Actions Take		BPSOU-UR01SS04-110321-3			ND UJ			
			SS05-110321-1		.24	J-		
			SS05-110321-2		.35	J-		
			SS05-110321-3		.84	J-		
			SS06-110321-1		.016	J-		
			SS06-110321-1-F	FD 0	.017	J-		
	BPS	OU-UR01S	SS06-110321-2	0	.022	J-		
	BPS	BPSOU-UR01SS07-110321-1		0	0.013			
	BPS	SOU-UR01S	SS07-110321-2	N	D	UJ		
Comments:								
Comments: lanks Were Method Blanks (MBs					D	[U]		
Were MBs within the control Were any data flagged beca	ol window?	•	y of 1 per analyti	cal batch?			Y X N Y X N Y N X	]
Describe Any Actions Take		Required.						

Comments: MBs for EPA 7471B and EPA 6010D were non-detect. A MB was not analyzed for ASTM D2974.

#### 3. Laboratory Control Samples

Were Laboratory Control Samples (LCS) analyzed at the frequency of 1 per batch? Y	Х	Ν		1			
Were LCS results within the control window? Y	Х	Ν					
Were any data flagged because of LCS problems? Y		Ν	Х				
Describe Any Actions Taken: None Required.							
Comments: The LCS %R were within limits for EPA 6010D and EPA 7471B. An LCS was not analyzed for ASTM D2974.							

4	4. Duplicate Sample	e Results
	Were Laborat	tory Duplicate Samples (LDS) analyzed at the frequency of 1 per batch? Y X N
	Were LDS re	sults within the control window? Y X N
	Were any dat	a flagged because of LDS problems? Y N X
	Describe Any	Actions Taken: None Required.
	Comments:	For method EPA 7471B batch 783302, an LMS/LMS Duplicate (LMSD) generated from a sample not from this work order was used for the LDS calculation. The RPD was within control limits.
		For method EPA 7471B batch 783306, an LMS/LMS Duplicate (LMSD) generated from BPSOU-UR01SS03-110321-1 was used for the LDS calculation. The RPD was within control limits.
		For method EPA 6010D batch 783304, an LMS/LMS Duplicate (LMSD) generated from BPSOU-UR01SS03-110321-1 was used for the LDS calculations. The RPDs were within control limits.
		For ASTM D2974, a duplicate generated from BPSOU-UR01SS03-110321-1 and a duplicate generated from a sample not from this work order were used for the LDS calculations. The RPDs were within control limits.

## 5. Matrix Spike Sample Results

Were LMS re	sults within the co	Samples (LMS) analyzed at the frequency of 1 per batch? ontrol window? of LMS problems?	Y X N Y N X Y X N
2	Actions Taken:	For method EPA 7471B batch 783306, an LMS/LMSD was generated fr of the LMS/LMSD for mercury (78% and 76%, respectively) were outsi results for BPSOU-UR01SS03-110321-1 were qualified "UJ". Per the N not meet the technical criteria, apply the action to all samples of the sam sufficiently similar" (EPA, 2017). Since no samples are considered suff were warranted. The sample had a previous qualification of "UJ" for me outside the acceptable range; therefore, the final qualification was "UJ".	rom BPSOU-UR01SS03-110321-1. The %R de control limits (80-120%). Mercury NFG, "For a spike sample analysis that does ne matrix if the samples are considered ficiently similar, no additional qualifications ercury due to the sample receipt temperature
		For method EPA 6010D batch 783304, an LMS/LMSD was generated fr of the LMSD for zinc (69%) was outside control limits (75-125%). Zinc were qualified "J-". Per the NFG, "For a spike sample analysis that doe action to all samples of the same matrix if the samples are considered su samples are considered sufficiently similar, no additional qualifications limits.	c results for BPSOU-UR01SS03-110321-1 es not meet the technical criteria, apply the ufficiently similar" (EPA, 2017). Since no
Comments:		A 7471B batch 783302, an LMS/LMSD was generated from a sample not a mercury were within control limits (80-120%).	from this work order. The %R of the
	An LMS was no	t analyzed for ASTM D2974.	

## 6. Field Blanks

. FICIU DIAIRS	
Were field blanks submitted as specified in the QAPP?	Y N N/A X
Were field blanks within the control window?	Y N N/A X
Were any data qualified because of field blank problems?	Y N N/A X
Describe Any Actions Taken: None Required.	
Comments: Field blanks were not required as there is no sampling equipment re-used.	
7. Field Duplicates	
Were field duplicates submitted as specified in the QAPP?	Y X N N/A
Were results for field duplicates within the control window?	Y X N N/A
Were any data qualified because of field duplicate problems?	Y N X N/A
Describe Any Actions Taken: None Required.	

Comments: One field duplicate pair was submitted on this work order, BPSOU-UR01SS06-110321-1 and BPSOU-UR01SS06-110321-1-FD. The precision for all analytes was within control limits.

## 8. Overall Assessment

Are there analy	tical limitations of the data that users sho	uld be aware of	??		Y X N
If so, explain:	On this WO 10587272, the following	qualifications w	vere made:		
	In addition to the qualifications outline and the reporting limit were qualified				the method detection limit
	The table below lists the qualifications	s on the natural	samples:		_
	Field ID	Analyte	Final Qualification	Reason Code	
	BPSOU-UR01SS03-110321-1	Mercury	UJ	Pres, S%	
	BPSOU-UR01SS03-110321-2	Mercury	UJ	Pres	
	BPSOU-UR01SS03-110321-3	Mercury	UJ	Pres	
	BPSOU-UR01SS04-110321-1	Mercury	UJ	Pres	
	BPSOU-UR01SS04-110321-2	Mercury	UJ	Pres	
	BPSOU-UR01SS04-110321-3	Mercury	UJ	Pres	
	BPSOU-UR01SS05-110321-1	Mercury	J-	Pres	
	BPSOU-UR01SS05-110321-2	Mercury	J-	Pres	
	BPSOU-UR01SS05-110321-3	Mercury	J-	Pres	
	BPSOU-UR01SS06-110321-1	Mercury	J-	Pres, <rl< td=""><td></td></rl<>	
	BPSOU-UR01SS06-110321-2	Mercury	J-	Pres	
	BPSOU-UR01SS07-110321-1	Mercury	J-	Pres, <rl< td=""><td></td></rl<>	
	BPSOU-UR01SS07-110321-2	Mercury	UJ	Pres	
	BPSOU-UR01SS03-110321-1	Zinc	J-	S%	
	BPSOU-UR01SS04-110321-2	Cadmium	А	<rl< td=""><td></td></rl<>	
	BPSOU-UR01SS04-110321-3	Cadmium	А	<rl< td=""><td></td></rl<>	
	BPSOU-UR01SS06-110321-1	Cadmium	А	<rl< td=""><td></td></rl<>	
	The table below lists the qualifications		-		
	Field ID	Analyte	Final Qualification	Reason Code	
	BPSOU-UR01SS06-110321-1-FD	Mercury	J-	Pres, <rl< td=""><td></td></rl<>	
	BPSOU-UR01SS06-110321-1-FD	Cadmium	А	<rl< td=""><td></td></rl<>	
	Reason for qualification: Pres = The receipt temperature was ou S% = Laboratory matrix spike recover <rl =="" above="" is="" method<="" result="" td="" the=""><td>y was outside c</td><td>control limits.</td><td>imit.</td><td></td></rl>	y was outside c	control limits.	imit.	
Comments:					

## 9. Authorization of Data Validation

Data Val	idator
Name:	Sara Ward

Jara Ward

Date:

Signature:

11/30/2021

Reviewed by: Josie McElroy

Josie M' Elioy

12/1/2021

Site: Butte Priority Soils Operable Unit **Project:** Unreclaimed Sites 2021 Sample Date(s): 11/03/2021, 11/04/2021

Case No: 10587273 Sample Matrix: Soil Analysis Date(s): 11/16/2021, 11/17/2021, 11/18/2021, 11/21/2021 Validation Date(s): 12/1/2021

Laboratory: Pace Analytical Analyses: As, Cd, Cu, Pb, Zn (EPA 6010D), Hg (SW7471B), and Percent Moisture (ASTM D2974)

Data Validator: Sara Ward

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Were Method Blanks (MBs) analyzed at the frequency of 1 per analytical batch?YXNWere MBs within the control window?YXNWere any data flagged because of blank problems?YNX	Analyte	Laboratory	Matrix	Method	Holding Times	Collection Date(s):	Analysis Date(s)	Holding Met (		Affected Dat Flagged (Y/N
rg       Soil       SW /4/1B       28 days       11/04/2021       11/21/2021       Y         Percent Moisture       ASTM       N/A       11/04/2021       11/16/2021       Y         Were any data flagged because of holding time?       Y       Y       X       N       X         Were any data flagged because of preservation problems?       Y       X       N       X         The receiving temperature as reported by the laboratory was 8.4°C. Since the receiving temperature was g than 6.0°C, the mercury results were qualified "U/J-". The samples were shipped on ice and analyzed with holding time.         BPSOU-UR05SS02-110421-1       0.25       J-         BPSOU-UR05SS02-110421-2       0.31       J-         BPSOU-UR05SS03-110421-2       0.31       J-         BPSOU-UR05SS03-110421-3       0.26       J-         BPSOU-UR05SS03-110421-1       0.80       J-         BPSOU-UR05SS03-110421-2       0.31       J-         BPSOU-UR05SS03-110421-3       0.65       J-         BPSOU-UR05SS03-110421-3       0.65       J-         BPSOU-UR05SS03-110421-3       0.62       J-         BPSOU-UR05SS03-110421-3       0.26       J-         BPSOU-UR05SS03-110421-3       0.26       J-         BPSOU-UR05SS03-110421-3       0.26<	s, Cd, Cu, Pb, and Zn		EPA 60		6 months			Ý V		N/A
Percent Moisture       D2974       N/A       11/16/2021       Y         Were any data flagged because of holding time?       Y       X       N       X         Were any data flagged because of preservation problems?       Y       X       N       X         The receiving temperature as reported by the laboratory was 8.4°C. Since the receiving temperature was g than 6.0°C, the mercury results were qualified "U/J-". The samples were shipped on ice and analyzed with holding time.         Sample ID       Mercury Results (mg/kg)       Qualifier         BPSOU-UR05SS02-110421-1-FD       0.25       J-         BPSOU-UR05SS02-110421-1       0.26       J-         BPSOU-UR05SS03-110421-3       0.26       J-         BPSOU-UR05SS03-110421-1       0.80       J-         BPSOU-UR05SS03-110421-1       0.45       J-         BPSOU-UR05SS03-110421-1       0.65       J-         BPSOU-UR05SS03-110421-1       0.66       J-         BPSOU-UR05SS03-110421-1       0.15       J-         BPSOU-UR05SS03-110421-1       0.26       J-         BPSOU-UR05SS03-110421-2       0.16       J-         BPSOU-UR05SS03-110421-3       0.26       J-         BPSOU-UR05SS03-110421-3       0.26       J-         BPSOU-UR05SS03-110421-3       0.26	Hg	Pace	Soil	SW7471B	28 days		11/21/2021	I Y	*	N/A
Were any data flagged because of preservation problems?       Y       X       N         Y       X       N       Image: Construction of the preservation problems?         Y       X       N       Image: Construction of the preservation problems?         Y       X       N       Image: Construction of the preservation problems?         Y       X       N       Image: Construction of the preservation problems?         Y       X       N       Image: Construction of the preservation problems?         Y       X       N       Image: Construction of the preservation problems?         Y       X       N       Image: Construction of the preservation of the preser	Percent Moisture				N/A		11/16/202	Y	7	N/A
BPSOU-UR05SS02-110421-1       0.25       J-         BPSOU-UR05SS02-110421-1-FD       0.20       J-         BPSOU-UR05SS02-110421-2       0.31       J-         BPSOU-UR05SS02-110421-3       0.26       J-         BPSOU-UR05SS02-110421-3       0.26       J-         BPSOU-UR05SS02-110421-3       0.26       J-         BPSOU-UR05SS03-110421-3       0.45       J-         BPSOU-UR05SS03-110421-2       0.45       J-         BPSOU-UR05SS04-110421-3       0.65       J-         BPSOU-UR05SS04-110421-3       0.26       J-         BPSOU-UR05SS04-110421-3       0.26       J-         BPSOU-UR05SS05-110421-2       0.038       J-         BPSOU-UR05SS05-110421-3       0.26       J-         BPSOU-UR05SS05-110421-3       0.068       J-         BPSOU-UR05SS05-110421-3       0.068       J-         BPSOU-UR01SS07-110321-3       ND       UJ         Comments:		use of preserva The re than 6	ation proble eceiving ten 5.0°C, the m	perature as repo				receiving tem	N	
BPSOU-UR05SS02-110421-1-FD         0.20         J-           BPSOU-UR05SS02-110421-2         0.31         J-           BPSOU-UR05SS02-110421-3         0.26         J-           BPSOU-UR05SS03-110421-1         0.80         J-           BPSOU-UR05SS03-110421-2         0.45         J-           BPSOU-UR05SS03-110421-2         0.45         J-           BPSOU-UR05SS03-110421-2         0.45         J-           BPSOU-UR05SS03-110421-2         0.16         J-           BPSOU-UR05SS05-110421-3         0.26         J-           BPSOU-UR05SS05-110421-3         0.068         J-           BPSOU-UR05SS05-110421-3         0.068         J-           BPSOU-UR01SS07-110321-3         ND         UJ					]	Mercury Results (n	ng/kg) (	Qualifier	]	
BPSOU-UR05SS02-110421-2       0.31       J-         BPSOU-UR05SS03-110421-3       0.26       J-         BPSOU-UR05SS03-110421-1       0.80       J-         BPSOU-UR05SS03-110421-2       0.45       J-         BPSOU-UR05SS03-110421-2       0.45       J-         BPSOU-UR05SS03-110421-3       0.65       J-         BPSOU-UR05SS03-110421-1       0.15       J-         BPSOU-UR05SS03-110421-1       0.16       J-         BPSOU-UR05SS03-110421-1       0.026       J-         BPSOU-UR05SS05-110421-1       0.029       J-         BPSOU-UR05SS05-110421-3       0.068       J-         BPSOU-UR01SS07-110321-3       ND       UJ         Comments:										
Describe Any Actions Taken: $BPSOU-UR05SS02-110421-3$ BPSOU-UR05SS03-110421-1 $0.26$ J-BPSOU-UR05SS03-110421-2 $0.45$ J-BPSOU-UR05SS03-110421-3 $0.65$ J-BPSOU-UR05SS04-110421-3 $0.65$ J-BPSOU-UR05SS04-110421-2 $0.16$ J-BPSOU-UR05SS04-110421-2 $0.16$ J-BPSOU-UR05SS04-110421-3 $0.26$ J-BPSOU-UR05SS04-110421-3 $0.26$ J-BPSOU-UR05SS05-110421-1 $0.029$ J-BPSOU-UR05SS05-110421-3 $0.068$ J-BPSOU-UR01SS07-110321-3NDUJComments:Mere Method Blanks (MBs) analyzed at the frequency of 1 per analytical batch?Were MBs within the control window?YXWere any data flagged because of blank problems?YNXNX									-	
Describe Any Actions Taken:       BPSOU-UR05SS03-110421-1       0.80       J-         BPSOU-UR05SS03-110421-2       0.45       J-         BPSOU-UR05SS03-110421-3       0.65       J-         BPSOU-UR05SS04-110421-1       0.15       J-         BPSOU-UR05SS04-110421-2       0.16       J-         BPSOU-UR05SS04-110421-2       0.16       J-         BPSOU-UR05SS04-110421-3       0.26       J-         BPSOU-UR05SS05-110421-1       0.029       J-         BPSOU-UR05SS05-110421-2       0.038       J-         BPSOU-UR05SS05-110421-3       0.068       J-         BPSOU-UR05SS05-110421-3       0.068       J-         BPSOU-UR05SS05-110421-3       0.068       J-         BPSOU-UR01SS07-110321-3       ND       UJ         Comments:										
Describe Any Actions Taken:       BPSOU-UR05SS03-110421-2       0.45       J-         BPSOU-UR05SS03-110421-3       0.65       J-         BPSOU-UR05SS04-110421-1       0.15       J-         BPSOU-UR05SS04-110421-2       0.16       J-         BPSOU-UR05SS04-110421-3       0.26       J-         BPSOU-UR05SS04-110421-3       0.26       J-         BPSOU-UR05SS05-110421-3       0.26       J-         BPSOU-UR05SS05-110421-3       0.26       J-         BPSOU-UR05SS05-110421-3       0.068       J-         BPSOU-UR05SS05-110421-3       0.068       J-         BPSOU-UR05SS05-110421-3       0.068       J-         BPSOU-UR05SS07-110321-3       ND       UJ         Comments:							-			
BPSOU-UR05SS03-110421-2       0.43       J-         BPSOU-UR05SS03-110421-3       0.65       J-         BPSOU-UR05SS04-110421-1       0.15       J-         BPSOU-UR05SS04-110421-2       0.16       J-         BPSOU-UR05SS04-110421-3       0.26       J-         BPSOU-UR05SS04-110421-3       0.26       J-         BPSOU-UR05SS05-110421-1       0.029       J-         BPSOU-UR05SS05-110421-2       0.038       J-         BPSOU-UR05SS05-110421-3       0.068       J-         BPSOU-UR05SS05-110421-3       0.068       J-         BPSOU-UR05SS05-110421-3       0.068       J-         BPSOU-UR01SS07-110321-3       ND       UJ         Comments:    Mere Method Blanks (MBs) analyzed at the frequency of 1 per analytical batch?          Y       X       N         Were MBs within the control window?       Y       X       N         Were any data flagged because of blank problems?       Y       X       N       X	Describe Any Actions Take								-	
BPSOU-UR05SS04-110421-1       0.15       J-         BPSOU-UR05SS04-110421-2       0.16       J-         BPSOU-UR05SS04-110421-3       0.26       J-         BPSOU-UR05SS05-110421-1       0.029       J-         BPSOU-UR05SS05-110421-2       0.038       J-         BPSOU-UR05SS05-110421-3       0.068       J-         BPSOU-UR05SS05-110421-3       0.068       J-         BPSOU-UR05SS05-110421-3       0.068       J-         BPSOU-UR05SS05-110421-3       0.068       J-         BPSOU-UR01SS07-110321-3       ND       UJ         Comments:         Mks         Were Method Blanks (MBs) analyzed at the frequency of 1 per analytical batch?       Y       X       N         Were MBs within the control window?       Y       X       N       Y       X       N       X         Were any data flagged because of blank problems?       Y       N       X       X       N       X	Deserver ing riedons rai	BPS							-	
BPSOU-UR05SS04-110421-2         0.16         J-           BPSOU-UR05SS04-110421-3         0.26         J-           BPSOU-UR05SS05-110421-1         0.029         J-           BPSOU-UR05SS05-110421-2         0.038         J-           BPSOU-UR05SS05-110421-3         0.068         J-           BPSOU-UR05SS05-110421-3         0.068         J-           BPSOU-UR05SS05-110421-3         0.068         J-           BPSOU-UR05SS05-110421-3         0.068         J-           BPSOU-UR01SS07-110321-3         ND         UJ									-	
BPSOU-UR05SS04-110421-3       0.26       J-         BPSOU-UR05SS05-110421-1       0.029       J-         BPSOU-UR05SS05-110421-2       0.038       J-         BPSOU-UR05SS05-110421-3       0.068       J-         BPSOU-UR05SS05-110421-3       0.068       J-         BPSOU-UR05SS05-110421-3       0.068       J-         BPSOU-UR01SS07-110321-3       ND       UJ         Comments:         Mks         Were Method Blanks (MBs) analyzed at the frequency of 1 per analytical batch?       Y       X       N       Y       X       N       Y       X       N       Y       X       N       X       X       N       X       X       N       X       X       N       X       X       N       X       X       N       X       X       N       X       X       N       X       X       N       X       X       N       X       X       N       X       X       N       X       X       N       X       X       N       X       X       X       N       X       X       N       X       X       N       X       X       N       X       X       X       N<							-			
BPSOU-UR05SS05-110421-1       0.029       J-         BPSOU-UR05SS05-110421-2       0.038       J-         BPSOU-UR05SS05-110421-3       0.068       J-         BPSOU-UR01SS07-110321-3       ND       UJ         Comments:         Mks         Were Method Blanks (MBs) analyzed at the frequency of 1 per analytical batch?       Y       X       N         Were MBs within the control window?       Y       X       N       Y         Were any data flagged because of blank problems?       Y       X       N       X							-			
BPSOU-UR05SS05-110421-2       0.038       J-         BPSOU-UR05SS05-110421-3       0.068       J-         BPSOU-UR01SS07-110321-3       ND       UJ         Comments:         mks         Were Method Blanks (MBs) analyzed at the frequency of 1 per analytical batch?       Y       X       N         Were MBs within the control window?       Y       X       N       Y         Were any data flagged because of blank problems?       Y       X       N       X										
BPSOU-UR05SS05-110421-3       0.068       J-         BPSOU-UR01SS07-110321-3       ND       UJ         Comments:         mks         Were Method Blanks (MBs) analyzed at the frequency of 1 per analytical batch?       Y       X       N         Were MBs within the control window?       Y       X       N       Y         Were any data flagged because of blank problems?       Y       X       N       X										
BPSOU-UR01SS07-110321-3       ND       UJ         Comments:         nks         Were Method Blanks (MBs) analyzed at the frequency of 1 per analytical batch?       Y       X       N         Were MBs within the control window?       Y       X       N       Y         Were any data flagged because of blank problems?       Y       X       N       X										
nks         Were Method Blanks (MBs) analyzed at the frequency of 1 per analytical batch?       Y       X       N         Were MBs within the control window?       Y       X       N										
Were Method Blanks (MBs) analyzed at the frequency of 1 per analytical batch?YXNWere MBs within the control window?YXNWere any data flagged because of blank problems?YNX	Comments:				<u>.</u>				-	
Were MBs within the control window?YXNWere any data flagged because of blank problems?YNX	nks									
Were any data flagged because of blank problems? Y N X	Were Method Blanks (MBs	) analyzed at tl	ne frequenc	y of 1 per analyti	cal batch?				Ν	
Describe Any Actions Taken: None Required	Were any data flagged beca	use of blank p	roblems?					Y	N X	
Describe ruly reaches Taken. Tone required.	Describe Any Actions Take	en: None	Required.							
Comments: MBs for SW7471B and EPA 6010D were non-detect. A MB was not analyzed for ASTM D2974.										

## 3. Laboratory Control Samples

Were Laboratory Control Samples (LCS) analyzed at the frequency of 1 per batch? Y	Х	Ν		
Were LCS results within the control window? Y	Х	Ν		
Were any data flagged because of LCS problems? Y		Ν	Х	
Describe Any Actions Taken: None Required. Comments: The LCS %R were within limits for EPA 6010D and SW7471B. An LCS was not analyzed for ASTM I	D297	4.		

#### 4. Duplicate Sample Results

Were Laboratory Duplicate Samples (LDS) analyzed at the frequency of 1 per batch?	Y	Х	Ν		
Were LDS results within the control window?	Y	Х	Ν		
Were any data flagged because of LDS problems?	Y		Ν	Х	
Describe Any Actions Taken: None Required					

Describe Any Actions Taken: None Required.

For method SW7471B batch 783306, an LMS/LMS Duplicate (LMSD) generated from a sample not from this work order was used Comments: for the LDS calculation. The RPD was within control limits.

For method SW7471B batch 783307, an LMS/LMS Duplicate (LMSD) generated from BPSOU-UR05SS02-110421-1-FD was used for the LDS calculation. The RPD was within control limits.

For method EPA 6010D batch 783304, an LMS/LMS Duplicate (LMSD) generated from a sample not from this work order was used for the LDS calculations. The RPDs were within control limits.

For method EPA 6010D batch 783305, an LMS/LMS Duplicate (LMSD) generated from BPSOU-UR05SS02-110421-1-FD was used for the LDS calculations. The RPDs were within control limits.

For ASTM D2974, a duplicate generated from BPSOU-UR05SS02-110421-1 and a duplicate generated from BPSOU-UR05SS05-110421-1 were used for the LDS calculations. The RPDs were within control limits.

#### 5. Matrix Spike Sample Results

	ory Matrix Spike Samples (LMS) analyzed at the frequency of 1 per batch? Y X N						
Were LMS re	sults within the control window? Y N X						
Were any data	a flagged because of LMS problems? Y N X						
Describe Any	Actions Taken: None Required.						
Comments: For method SW7471B batch 783306, an LMS/LMSD was generated from a sample not from this work order. The %R of the LMS/LMSD for mercury (78% and 76%, respectively) were outside control limits (80-120%). Since the parent sample was not from this work order, no qualifications were warranted.							
For method SW7471B batch 783307, an LMS/LMSD was generated from BPSOU-UR05SS02-110421-1-FD. The %R LMS/LMSD for mercury were within control limits (80-120%).							
For method EPA 6010D batch 783304, an LMS/LMSD was generated from a sample not from this work order for zinc (69%) was outside control limits (75-125%). Since the parent sample was not from this work order, n warranted. All other %R were within limits.							
	For method EPA 6010D batch 783305, an LMS/LMSD was generated from BPSOU-UR05SS02-110421-1-FD. The %R of the LMS/LMSD for arsenic (49% and 67%, respectively), copper (-72% and -115%, respectively), lead (204% and 126%, respectively), and zinc (776% and 318%, respectively) were outside control limits (75-125%). Per the NFG " <i>Spike recovery limits does not apply when the original sample concentration is</i> $\geq$ 4 <i>times the spike added. In such an event the data shall be reported unflagged, even if the %r does not meet the acceptance criteria.</i> " ( <i>EPA, 2017</i> ). The original sample concentrations for arsenic, copper, lead, and zinc were greater than 4 times the spike added; therefore, no qualifications were warranted. All %R for cadmium were within limits.						
	An LMS was not analyzed for ASTM D2974.						

#### 6. Field Blanks

Were field bla	inks submitted as specified in the QAPP?	Y	Ν	N/A	Х	
Were field bla	inks within the control window?	Y	Ν	N/A	Х	
Were any dat	a qualified because of field blank problems?	Y	Ν	N/A	Х	
Describe Any Comments:	Actions Taken: None Required. Field blanks were not required as there is no sampling equipment re-used.					

7. Field Duplicates		
Were field duplicates submitted a	s specified in the QAPP?	Y X N N/A
Were results for field duplicates w	vithin the control window?	Y N X N/A
Were any data qualified because	of field duplicate problems?	Y X N N/A
Describe Any Actions Taken:	110421-1-FD. The results for copper and percent moistur was greater than 35%. The copper and percent moisture r	FG, "For a duplicate sample analysis that does not meet the ame matrix if the samples are considered
Comments: The precision for	the remaining analytes was within control limits.	

## 8. Overall Assessment

If so, explain:	On this WO 10587273, the following	qualifications were ma	do	
n so, explain:	On this wo 1038/2/3, the following o	quantications were ma	ue:	
	In addition to the qualifications outline	ed in the sections abov	e, results which were reporte	d between the method detection li
	and the reporting limit were qualified			
			1	
	The table below lists the qualifications	s on the natural sample	s:	
	Field ID	Analyte	Final Qualification	Reason Code
	BPSOU-UR05SS02-110421-1	Mercury	J-	Pres
	BPSOU-UR05SS02-110421-2	Mercury	J-	Pres
	BPSOU-UR05SS02-110421-3	Mercury	J-	Pres
	BPSOU-UR05SS03-110421-1	Mercury	J-	Pres
	BPSOU-UR05SS03-110421-2	Mercury	J-	Pres
	BPSOU-UR05SS03-110421-3	Mercury	J-	Pres
	BPSOU-UR05SS04-110421-1	Mercury	J-	Pres
	BPSOU-UR05SS04-110421-2	Mercury	J-	Pres
	BPSOU-UR05SS04-110421-3	Mercury	J-	Pres
	BPSOU-UR05SS05-110421-1	Mercury	J-	Pres
	BPSOU-UR05SS05-110421-2	Mercury	J-	Pres
	BPSOU-UR05SS05-110421-3	Mercury	J-	Pres
	BPSOU-UR01SS07-110321-3	Mercury	UJ	Pres
	BPSOU-UR05SS02-110421-1	Copper	J	FD
	BPSOU-UR05SS02-110421-1	Percent Moisture	J	FD
	BPSOU-UR01SS07-110321-3	Cadmium	А	<rl< td=""></rl<>
	The table below lists the qualifications	s on the field quality co	ontrol samples:	
	Field ID	Analyte	Final Qualification	Reason Code
		Analyte Mercury	Final Qualification	Reason Code Pres
	Field ID BPSOU-UR05SS02-110421-1-FD BPSOU-UR05SS02-110421-1-FD	5		
	BPSOU-UR05SS02-110421-1-FD	Mercury	J-	Pres
	BPSOU-UR05SS02-110421-1-FD BPSOU-UR05SS02-110421-1-FD BPSOU-UR05SS02-110421-1-FD	Mercury Copper	J- J	Pres FD
	BPSOU-UR05SS02-110421-1-FD BPSOU-UR05SS02-110421-1-FD BPSOU-UR05SS02-110421-1-FD Reason for qualification:	Mercury Copper Percent Moisture	J- J J	Pres FD
	BPSOU-UR05SS02-110421-1-FD BPSOU-UR05SS02-110421-1-FD BPSOU-UR05SS02-110421-1-FD Reason for qualification: Pres = The receipt temperature was ou	Mercury Copper Percent Moisture tside of required range	J- J J	Pres FD
	BPSOU-UR05SS02-110421-1-FD BPSOU-UR05SS02-110421-1-FD BPSOU-UR05SS02-110421-1-FD Reason for qualification: Pres = The receipt temperature was ou FD = Field duplicate precision was ou	Mercury Copper Percent Moisture ttside of required range tside control limits.	J- J J J	Pres FD
	BPSOU-UR05SS02-110421-1-FD BPSOU-UR05SS02-110421-1-FD BPSOU-UR05SS02-110421-1-FD Reason for qualification: Pres = The receipt temperature was ou	Mercury Copper Percent Moisture ttside of required range tside control limits.	J- J J J	Pres FD
Comments:	BPSOU-UR05SS02-110421-1-FD BPSOU-UR05SS02-110421-1-FD BPSOU-UR05SS02-110421-1-FD Reason for qualification: Pres = The receipt temperature was ou FD = Field duplicate precision was ou	Mercury Copper Percent Moisture ttside of required range tside control limits.	J- J J J	Pres FD

Data Validator Name: Sara W	/ard	Reviewed by: Josie McElroy
Signature:	Jara Ward	Josie M'Elioy
Date:	12/1/2021	12/1/2021

# Attachment 2 Level A/B Assessment Checklist

## 1. General Information

Site:	Butte Priority Soils Operable Unit
Project:	Unreclaimed Sites 2021
Client:	Atlantic Richfield Company
Sample Matrix:	Soil

## 2. Screening Result

Data are:

1. Unusable

2. Level A

3. Level B 10586267, 10586277, 10586396, 10587272, 10587273, P\_20211102\_98052, and P\_20211103\_98052

# I. Level A

	Criteria – The following must be fully documented.	Yes/No	Comments
1.	Sampling date	Yes	Logbook
2.	Sampling team or leader	Yes	Logbook
3.	Physical description of sampling location	Yes	Logbook
4.	Sample depth (soils)	Yes	Logbook
5.	Sample collection technique	Yes	Logbook
6.	Field preparation technique	Yes	Logbook
7.	Sample preservation technique	Yes	Logbook
8.	Sample shipping records	Yes	Logbook and Chain of Custody
		res	(CoC)

# II. Level B

Criteria – The following must be fully documented.	Yes/No	Comments
1. Field instrumentation methods and standardization complete	Yes	Logbook
2. Sample container preparation	Yes	Logbook
3. Collection of field replicates (1/20 minimum)	Yes	Logbook
4. Proper and decontaminated sampling equipment	Yes	Logbook
5. Field custody documentation	Yes	Logbook and CoC
6. Shipping custody documentation	Yes	Logbook and CoC
7. Traceable sample designation number	Yes	Logbook Lab Report, and CoC
8. Field notebook(s), custody records in secure repository	Yes	
9. Completed field forms	Yes	Logbook and Field Data Sheets

# Attachment 3 Data Validation Quality Control Criteria

			XRF					
	E.		<b>a</b> ** •		Action	-		
Quality Control	Frequency	Acceptance Criteria	Criteria	Associated Sample Result Detected	Associated Sample Result Non-Detected	Reason Code	Reference	
Sourteurs Chaola	Desfermed deile avier to concelle avelueic	Performed daily, prior to sample analysis	System Check not performed	Professional Judgment J/R	Professional Judgment UJ/R	CX	SOP-SFM-02	
System Check	Performed daily, prior to sample analysis	Resolution < 195	Resolution $\ge 195$	Professional Judgment J/R	Professional Judgment UJ/R	SC	SOP-SFM-02	
		Performed daily, prior to sample analysis, at least 1 for every 20 sample analyses, and at end of each day of analysis	Frequency criteria not met	J	UJ	CX		
SiO2 Standard	Performed daily, prior to sample analysis, at least 1 for every 20 sample analyses, and at end of each day of analysis	Arsenic $\leq 10 \text{ mg/kg}$ Cadmium $\leq 50 \text{ mg/kg}$ Copper $\leq 20 \text{ mg/kg}$ Lead $\leq 10 \text{ mg/kg}$ Mercury $\leq 10 \text{ mg/kg}$ Zinc $\leq 10 \text{ mg/kg}$	>10 mg/kg >50 mg/kg >20 mg/kg >10 mg/kg >10 mg/kg	Results < 10x the SiO2 result - J+	No Qualification	No Qualification B		
	Performed daily, prior to sample analysis, at least 1 for every 20 sample analyses, and at end of each day of analysis	Performed daily, prior to sample analysis, at least 1 for every 20 sample analyses, and at end of each day of analysis	Frequency criteria not met	J	UJ	СХ		
Calibration Check Samples		Arsenic 0 - 35 mg/kg Cadmium 0 - 60 mg/kg Copper 0 - 60 mg/kg Lead 0 - 35 mg/kg Mercury 0 - 12 mg/kg	< Lower Control Limit	J-	UJ		SOP-SFM-02 Niton XL3 Soil QC Shee	
		Zinc         50 - 160 mg/kg           Prepuest         Arsenic         400 - 600 mg/kg           Cadmium         400 - 600 mg/kg           Lead         400 - 600 mg/kg	> Upper Control Limit	J+	No Qualification	CSS		
			Frequency criteria not met	J	UJ	DX	SOP-SFM-02	
KRF Duplicate	1 per 20 samples	RPD $\leq$ 35% for detected results	RPD ≤ 35%	No Qualification	No Qualification	D%	UR QAPP	
			RPD > 35%	J	UJ			
			Frequency criteria not met	J	UJ	RX	SOP-SFM-02	
XRF Replicate	1 per 20 samples	RPD $\leq$ 35% for detected results	$\frac{\text{RPD} \le 35\%}{25\%}$	No Qualification	No Qualification	R%	UR QAPP	
			RPD > 35%	J	UJ			
Field Duplicate		DDD < 250/ for detected14-	Frequency criteria not met $RPD \le 35\%$	J Na Ousl'Castler	UJ Na Qualification	FDX		
Field Duplicate	1 per 20 samples	$\text{RPD} \le 35\%$ for detected results	$\frac{\text{RPD} \leq 35\%}{\text{RPD} > 35\%}$	No Qualification	No Qualification UJ	FD	UR QAPP	

			Laboratory				
				Data			
Quality Control	Frequency	Acceptance Criteria	Criteria	Associated Sample Result -Detected	Associated Sample Result - Non-Detected	Reason Code	Reference
			Laboratory Quality Control Samples				
Uslding Time	Every Seconda	EPA 6010D (metals/metalloids)	$\leq 6$ months	J-	Professional Judgement UJ or R	н	NFG
Holding Time	Every Sample	EPA 7471B (mercury)	≤28 days	J-	Professional Judgement UJ or R	п	NFG
		EPA 6010D (metals/metalloids)	N/A (solids)	No Qualification	No Qualification		
			≤ 6 °C	No Qualification	No Qualification		
Preservation	Every Sample	EPA 7471B (mercury)	≥ 6 °C but ≤ 10 °C	Professional Judgement J	Professional Judgement UJ	Pres	NFG
			> 10 °C	J-	Professional Judgement UJ or R		
Method Blank (MB)	One per batch of up to 20	≤ 1/2 RL (6010D)	$\leq$ 1/2 RL (6010D) or Absolute Value of RL (7471B)	No Qualification	No Qualification	MB	CFRSSI QAPP
Wethod Blank (WB)	samples.	$\leq$ Absolute Value of RL (7471B)	> 1/2 RL (6010D) or Absolute Value of RL (7471B)	sample result < 10x blank detection: U	No Qualification	MID	Pace SOP
			% R < 40%	J-	R		
		%R 80-120% (all methods)	%R 40-79%	J-	UJ		CFRSSI QAPP
•	One per batch of up to 20		%R 80-120%	No Qualification	No Qualification	L%	NFG
Sample (LCS)	samples.		%R > 120%	J+	No Qualification		Pace SOP
			% R > 150%	R	No Qualification		
			Both original and duplicate sample results are $\geq 5x$ the RL and RPD $\leq 20\%$ (LCSD/MSD), RPD $\leq 35\%$ (soil).	No Qualification	No Qualification		
			Both original and duplicate sample results are $\geq$ 5x the RL and RPD is $\geq$ 20% (LCSD/MSD), $\geq$ 35% (soil).	J	UJ		
		1. If both original sample and duplicate sample results are $\geq$ 5x the RL, then RPD $\leq$ 20%	RPD > 100%	Professional Judgement	Professional Judgement		
Laboratory Duplicate Sample (LDS) <sup>3</sup>	One per batch of up to 20 samples.	ne per batch of up to 20 (LCSD/MSD), RPD ≤35% (soil); nples. 2. If original sample or duplicate sample result <	Original sample or duplicate sample result $< 5x$ the RL, and absolute difference between sample and duplicate $\le 2x$ RL (soils)	No Qualification	No Qualification	D%	CFRSSI QAPP NFG Pace SOP
			Original sample or duplicate sample result is $< 5x$ the RL and absolute difference between the sample and duplicate $> 2x$ RL (soil).	J	UJ		
			%R < 30%	J-	R		
		6010D - %R 75-125%	%R 30-74% (6010D) %R 30-79% (7471B)	J-	UJ		
Laboratory Matrix Spike (LMS)	One per batch of up to 20 samples.	6010D - %R 75-125% 7471B - %R 80-120% if sample analyte concentration < 4x spike	%R 75-125% (6010D) %R 80-120% (7471B)	No Linguitication No Ling		S%	CFRSSI QAPP NFG
opike (LMD)		concentration	%R >125% (6010D) %R >120% (7471B)	J+	No Qualification		Pace SOP
			sample analyte concentration $\ge 4x$ spike concentration	No Qualification	No Qualification		

			Field Quality Control Samples				
			Both original and duplicate sample results are $\ge 5x$ the RL and RPD RPD $\le 35\%$ (soil).	No Qualification	No Qualification		
			Both original and duplicate sample results are $\ge 5x$ the RL and RPD is $> 35\%$ (soil).	J	UJ		
	One per 20 samples collected.	<ul> <li>results are ≥ 5x the RL, RPD ≤ 35% (soil);</li> <li>1.</li> <li>2. If original sample or duplicate sample result &lt; 5x the RL, then absolute difference between sample and duplicate ≤ 2x RL (soils)</li> </ul>	RPD > 100%	Professional Judgement	Professional Judgement		
Field Duplicate Sample			Original sample or duplicate sample result $< 5x$ the RL, and absolute difference between sample and duplicate $\le 2xRL$ (soils)	No Qualification	No Qualification	FD	CFRSSI QAPP NFG
			Original sample or duplicate sample result is $< 5x$ the RL and absolute difference between the sample and duplicate $> 2xRL$ (soil).	J	UJ		

## Notes:

1. Associated sample results:

For Field Blank results that do not meet technical criteria, apply action to all samples in the SDG.

For Field Duplicate results that do not meet technical criteria, apply action to field duplicate pair and any samples from the same sample location in the SDG.

For MB and LCS results that do not meet technical criteria, apply action to all samples in the analytical batch.

For LDS or LMS/MSD results that do not meet technical criteria, apply action to the parent sample and, per the NFG, "apply the action to all samples of the same matrix if the samples are considered sufficiently similar."

For holding time and preservation that do not meet technical criteria, apply action to sample.

2. For consistency in validations between validators, if a sample result is reported as non-detect, the MDL is used for the duplicate absolute difference calculations.

3. An LCS, an LMS, or an original sample may all be used to perform a laboratory duplicate. If a LCS Duplicate or LMS Duplicate is used, the QC sample must also meet the applicable %R technical criteria.

#### **Qualifications:**

U - Non-detect	J+ - Estimated high	MDL - method detection limit	%R - percent recovery
UJ - Estimated non-detect	J Estimated low	RL - reporting limit	RPD - relative percent difference
J - Estimated	R - Rejected		

## **References:**

CFRSSI QAPP - ARCO, 1992. Clark Fork River Superfund Site Investigations (CFRSSI) Quality Assurance Project Plan (QAPP). Prepared for ARCO by PTI Environmental Services, Bellevue, Washington. May 1992. NFG - EPA, 2020. National Functional Guidelines for Inorganic Superfund Methods Data Review. November 2020.

-- Available at EPA's Superfund Analytical Services and Contract Laboratory Program website: https://www.epa.gov/clp/contract-laboratory-program-national-functional-guidelines-data-review

SOP-SFM-02 - Operating XL3-X-Ray Fluorescence Analyzer General. Pioneer Technical Services, Inc. January 2018.

UR QAPP - Silver Bow Creek/Butte Area NPL Site Butte Priority Soils Operable Unit 2022 Final Unrelaimed Sites Quality Assurance Project Plan (QAPP). Prepared for Atlantic Richfield Company by Pioneer Technical Services, Inc, Butte, Montana. June 2021. Niton XL3 Soil QC Sheet - Niton XL3 Soil QC Certificate of Calibration. Thermo Fisher Scientific. June 2014.

Abbreviations:

Pace SOP -

EPA 6010D - ENV-SOP-MIN4-0052: Metals Analysis by ICP - Method 6010 and 200.7

EPA 7471B - ENV-SOP-MIN4-0054: Mercury in Liquid and Solid/Semi-Solid Waste by 7470A, 7471, 7471B, and 245.1

# Attachment B Field Forms and Related Documents

11/2/21 Jues, UROI 11/2/21 Thes UROT BPSOU-UROISSOS-110121-1-FD @ 1215 0730 On Site of Buttle office to caliberte and collect equipment. Rom KRF, Las Split Submitted Be Fill out FAF and talk theorgh Ferle Duplizzate, Partit ID: Safety for the day, (BPS=U-UROISS2S-110121-1) Hanna DH probe (al H19912) 139500-URO15525-110221-2 @ 1210 Live Reading Burgel 7.05 0 22 4.00 Ran XRF, Las split Submitted For Hg ± 35010 Human Health 3.99 @ 22°C BPSOU-URO15525-110221-3 02 1205 7.00 10.06 @ 22° 10.00 Ran XRF NO Las cal with o.l. Site is Residential sample tocation 27 SS-27 Sampling Clew Sesse S, Math S. B1500-UROISSO7-110221-100 1200 Jusan H., and Nathan F. XRF Ran, NO Lab DI bottie: D77 for Decon BPSOU-WROISSJ7 - 110221-202 1155 Dh sik @ 0845 to begin Ran XRF, NO Las BPSOL- UROISS27-110221-3 2 1150 Sampling and Site chalacterization, Sample locations were method Ran XRF, Las Submitted for Hg = 35% With a frag Using GPS Unit Sample beation 23 55-23 BPSOU-URO15593-110221-1 @ 1225 For 55-1 to 55-27. The following Ron XRF, Las Subritido for the 135 forman Samples were Collected Per Proceevics on pg 2+3. Samples BPSOU-URO15523-110221-2 @ 1220 Ran XRF, Las Submitted for PS + 35000 all Symmetrized below per BPSOV - UTROI 5523 - 112221-3 00 1215 Sample location, Ren KRF, Las Subnitted for PS + 3500 Hom Sample location 25 55-25 BPSOU-UROISSOS-110000-1 00 1000 Jundon Ran KRF, Las Split Submitter For Parent Field Dupiscole, Cont ... Rete in the Rain

60 11/2/21 Tues 12001 11/2/21 TUES UROI XRF Can on 55-21,22,23,24,25, Sample location 26 55-26 QRSOU-UROISS26-110221-1 21240 26, and 27, XRF (an., No Las Samples SS-08 to SS-22 will BPSON-URO15526- (10221-2 0) 1235 be analyzed 11/03/21. XRF (in, Lab Subnitien) for ±35% Hay Homon Dave Swarson of site for walkthingh 13P50- UR015526-112221-3 07 1230 @ 1030, offeste @ 1045. XRS an, Los Submitted For + 3500 Hay Human Health Kendra Listted the State to use the ARE for two samples Sample location 24 55-24 XRF Reeding #146 and 147, BPSOU-UROISS24-110221-1 @ 1235 XIRF (on, Los Submitted for I35" Hy Human Health 5508 through 5527 are preserved BP501-11201-10221-2 201230 a Butte office per pg. 4. All equipment Decon Gollowed pg 3+4. XRF FAM, no 125 13/2500-UROISS24-110221-3 2 1225 Clew off Site at 1630, KREFEN, NO Las XRF was here sues here we Sample location 21 SS-21 of day dury close out of standards, BP500-UROISS21-16221-1 001235 Standards, Repitioup well Com outer Unit walked UP, XRF Can, 105 Sibmitted For Storm hatel 13P50V-UROISSOI-110221-2 21230 Out of office of 1800 KRF Party Los Sum The for + 35010 As Human Health Sample unoissil not sampled due to Locatton bety outside of Arco Pageedy. BPSOV-UROISS21-110221-3 02 1225 APPE Carp, Lab Silber 1702 For #3500 AS Honer Harth Sample location 22 55-22 BPSOU-UROISS:22-110221-1 @ 1255 XRF En, no Las Samples collected for buy include SSOB through SSO7 + OPOI Rite in the Rain

UROL 11/3/21 63 62 11/3/21 wednesday UROL: 138500 - UROISS22-110221-3 07 1245 0730 On site of BARE Office to constate and concert equipment. Ron XRE, no Lab Sample brating 20 55-20 Fill out FAF and talls through B1501-URASS20-110221- av 1300 Sarety for the Jur. Ron XRF, no LAB Hampo pH Cal H199121 -BPSOV-UROISSJO-110221-2 @ 1255 Live Reply Burgel 7834 Ron XRF, HOLAS 3.92 00 20.6 BPSau-URO15520-10221-3 07 1250. 0.05 @ 20.7 10 2.05 0 20,7 4837 Ron XRC, NO Las Sample location la 55-19 Cal within 0.1 Caro BPSOU-UROISSIG-110221-1 02 1330 Samping Clevel: Gesse S. Bustin H. Ron XRF, Las Sybmitting For + 3500 Hg Human Morthew S, Kendlet, D, BPSOV-UROISS19-110221-2 @ 1325 RE bothe: D77 for Deer Ron XPF, Las Submittee For ± 35% Hg Homen Dendra 13 a Bittle office. BPSOU-UROISS19-110221-301320 Commy KRF Samples Collector Ron KRE, Lab Submitted For 23500 Hg Human Yesterlay U/2/21. Sample bacetion 18 55-18 08/15) Oh Ste 2 UROL to by M BPSOU-UROISSIE-110221-1 02 1315 Sumply and Side Chelacterization Ran KRF, Las Submitted for I 3500 Hg Human Samples concepted are sympacial BPSON - VRXISSI8-110221-2 02 1310 below by Somple location. Ra-XRF, Las Sibinition for + 3506 Hay Human XRF and Lab Samples collected on B0500-UROISSHE-110221-3 @ 1305 U/2/21 ale Sunnacized below. Rom XRE, Los Submitted for ± 3500 Hz Hvinon Sample laction 22 55-22 Sample Jocation 17 55-17 BPSON-UROISSZZ-110221-2 NO 1250 BPSOU-VRXISS17-110221-1 @ 1350 Ray KRE, Leb Submitter? For ±35% Ha RMXRE, NO Las Human Stored, Rite in the Rain

11/3/21 Vba]. BPSOU-UROISSI7-110221-2 @ 1345 Rom XRF, no Lab 139501-62015517-110221-3 00 1340 Ron XRF, no Las Semple location 16 55-16 BP50V-UROISSIE-110221-1 00 1345 Con XRF, NO Lab BP500 - UPOISS16-110221-2 2 1340 Can XRF, Lob Submittere for 2350 Has Hummy BP500-09015516-110221-3 021335 an XPF, Las Submitted for 135000 Hg human Bess Sample location 15 55-15 BASSOU -UROISSIS-110221-1 aD 1315 Can XRE, Lab Submatries For 1 3500 has Hum BPSOV-UROISSIS-110221-2 @ 1310 Con XPRF, Les Submitterez 60 ( 2 3500 Hz Hum XRF Rep and bup can, Standards and System chelk. BP500-UROISSIS-110221-3 02 1305 (in XRF, Las Submitted for 33500 by Hun Sample pratin pos 9 SS-09 1943 BPSOU-UROISSO9-110221-1 02 1440 XRF Can, no 1ab BPSON - WROISSOG - 110221 - 2 00 1435 XRF Com, NO Lab

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eading #	4 Sample Name	Depth (inches)	Soil pH (s.u.)	Date Collected	Time Collected	Date			XRF Res	ults (mg/kg		<u> </u>	Lab
164	BPSOU-URO15524-110221-3	6-12	9.25	[1/2/2]		Analysed	As	Cd	Cu	Pb	Zn	Hg	Sample
165	BPSOU-URO 15521-110221-1	0-2	5,38	11/0/04		11/2/21	10	<8	52	21	116	56	NO
166	BPSOU-UROISS21-110221-2	2-6	5.15 S.15		1235		377	28	(784	-	319	(27)	Yes
167	BPSOU-UR DISSO 1-110221-3	1	4.05		1230		201	28	248	44	204	(27)	Yes
168	BESOULUR SYSTEM CHERK	0 10			1225	$\rightarrow$	(185)	68	273	25	104	27	Yes
	BPSOU-URO15522-110221-1	0-2	7.00		1255		Time	56.0	Sec		RES	168	
	BPSOU-UR 015522 - 110221 - 1 - D		7.00		1255		34	27	67	29	79	26	.NO
7135	BPSOU-UROiSSJJ-110JJi-1-R	0-2	7.20		15		31	47	67	26	86	66	-
174	BPSOULAR SYSTEM Check	0	7,30		1255		31	27	51	25	86	66	-
75	BPSOU-UR SYSTEM Cheeks	-					Time			RES			
78	BPSOU-UR System Check	-					Time	56.1		RES	173,9		<u> </u>
79	BPSOU-UR STOR						Time	560	122	RES	172.1		
80	BPSOULAR NIST	-	_				43	9	212	23	CS	25	-
81	BPSOU-UR RCRA						11	28	35	19	87	26	
32	BPSOU-UR US6S			V		Ţ	457	526	216	481	54	27	
33	BPSOU-UR SYSTEM Checks		~	11/3/21			98	19	209	780		27	_
ŝų	BPSOULUR SIOJ			1	_	_	The!	14	Sel.	RES	173,1		
1	BPSOU-UR N.St	_	_			_	<u> </u>	12	412	43	26	45	-
	BPSOU-UR BCRA		_			_	14	10	34	15	89	26	
	BESOULUR_ USCOS	_					492	508	22	469	45	27	<u>``</u>
	BPSOU-UR (S) SS 22 - 110121 - 2	2.1.	2 6.1	11/21 21			86	16	240	785	711	27	
	168 to Charged better 169 to Charge name, m	2-6	t,01	11/2/21	1250	112/21	35	240	42	22	96	(ZF)	Yes
	had a singer better	7	Ŷ	1 & X	(RF W	ovent	lead	result	S, Sh	ut aff	+0 (	estert	

	- <u>C</u>		BBS OLL U.									-0)-	
ite Numb	per: URoi Operator: C.Jacky		BPSOU: Un	reclaimed S	ites rield XRF	and Soil pH I		n/Screening	I evels (n	ng/kg)			
and Use:	XRF Unit #: 918052				Resid	ential	250		S Levels (II	1,200	_	10	
Regu	pH probe #:		1 UR Confirmation ormation on declar		Non-Re:	sidential	A. 8 34			2,300	BC WINK		
			confirmation sampl	and a second reason of the second second		ational	1,000				is a stole		and the second
						water	500 200	20	1000	1000	1000	anoso en	-
XRF Reading #	Sample Name	Depth (inches)	Soil pH (s.u.)	Date Collected	Time	Date				ts (mg/kg)	1000	_	Lab
	BPSOU-URO15522-110221- 3	(incres)	7.65	11/2/21	Collected	Analysed	As 32	cd 47	Cu 60	Pb	Zn	Hg	Sample
Library and the	BPSOU-UR 01 SS 20 - 110 221 - 1	6-2	6.76	11/2/21	1300	11/3/21	43	27	68	25	92 95	26	NO
Northerney Contraction	BPSOU-UR 015520-116221-2	2-6	6.93	43 1	1255		38	47	\$3	19	23	46	NO
	BPSOU-UR OISS 70 - 110221 - 3	6-12	6.40		1250		33	47	46	16	91	46	No
	BPSOU-UR O ISS 19 - 116221 - 1.	6-2	7.27		1330		9	28	71	61	196	(27)	Vez
194	BPSOU-UR OISS 19 - 110221 - 2	2-6	7.44		1325		13	19	54	51	150	Ø	res
	BPSOU-UROISS19-(10771-3	6-12	6.56		1320		19	10	Цġ	49	179	(19)	Ves
34. 85 1	BPSOU-UR 615518 - 1/0221 - 1.	0-2	6.65		1315		12	27	59	43	227	(2)	Yes
	BPSOU-UR GISS18-110221-2	2-6	6.60		1310		12	28	70	35	163	(7)	Ves
	BPSOU-UR 615518 - 116221 -3	6-12	6.58		1305		9	28	62	40	139	(~7)	res
transfer to the second	BPSOU-UR GISS17 - 1/0221 - 1	0-2	6.37		1350		30	17	49	23	104	46	No
	BPSOU-UR 015517 - 110221 - 2	2-6	6.67		1345		33	47	57	83	98	46	No
	BPSOU-UR OISS17-110221-3	6-12	6.75		1340		30	<7	44	24	94	16	No
	BPSOU-UR OISSILE 110221 - 1	3-2	7.36		1345		31	47	53	Z6	107	46	NOS
	BPSOU-URGISS16-110721 - 2	2-6	7.28		1340		24	47	84	72	253	(CF)	AD
	BPSOU-UR 01551 (0 - 110221 - 3	6-12	7.98		1335		21	47	107	86	296	(27)	ATO
		0-2	7.5 1		1315		24	8	102	362	502	CF L7	105
266	BPSOU-URO SI5-116221 - 2'	0-12	6.93		1310		17	10	103	158			52
267	BPSOU-UR 6)5515-116221 - 2 - Rog	2-10	6.03	-	1310		14	28	103	162	355	EF	450
208	BPSOU-UR 015515-116221 - 2 - 124055	20	10.83		1310		22	28	121	361		Ð	Hes-
209	BPSOULUR System Chelle			V		¥/	TIM	: 56	2	Res.	173.6		

i.

			BPSOU: Ur	nreclaimed S	ites Field XRF	and Soil pH I				<u> </u>		$\smile$	
and Use:	ber: いんい Operator: 90057 化: : XRF Unit #: プ	Jackson			<b>D</b>			n/Screenin	g Levels (n	1	1		
			1 UR Confirmation		1000000	ential sidential	250	17 ST 65	A Marco and a	- 1.200	Name of Street	10	
Kesi	dential pH probe #: 1		ormation on decla confirmation samp		Recreational		1.000			2,300			
					20000000000	nercial	500					ne karinan Nasatirak	
XRF		Depth	Soil pH	Date	Time	Water Date	200	20			1000	10	
Reading #	Sample Name	(inches)	(s.u.)	Collected	Collected	Analysed	As	Cd	Cu	ts (mg/kg) Pb	Zn	Hg	Lab Sample
210	BPSOULUR Sidz			11/3/21'			13	8	411	43	46	25	
211	BPSOU-UR WIST	-	-	1			17	13	23	11	90	26	_
212	BPSOU-UR RCRA				-		515.	528	27	496	44	27	
13	BESOU-UR USUS	_		4			94	22	229	790	7-10	27	
214	BPSOU-URG 155 150 - 110221 - 3	6-12	6.48	1112121	1305	11/3/21	10	13	91	48	298	(27)	res
215	BPSOU-URG   5569-116221 - 1	0-2	6.39		1440	1	25	46	53	21	100	26	NO
216	BPSOU-UR 015509-110221-2	2-6	6.66		1435		30	47	48	19	98	40	NO
217	BPSOU-UR OI SO9-110221- 3	6-12	6.95		1430		29	47	56	18	103	46	No
218	BPSOU-UR OI SS 68-110221 - 1	0-2	7.26		1435		10	17	76	20	121	(LA)	Ye
219	BPSOU-UR 015508-110221 - 2	2-6	7.32		1430		iD	28	63	24	114	(ZZ)	res
220	BPSOU-UR 6 5508-110221 - 3	6-12	7.20		1425		17	10	31	26	102	(29)	res
221	BPSOU-URG DP 8 - 110721 - 1	6-2	8,50		1315		11	47	47	13	75	46	NO
222	BPSOU-UR O OPP61-116721 - 2	2-4	8.15		1310		14	47	26	12	74	26	NO
223	BPSOU-UR 61 COMD1-110221-3	6-12	8,58		1305		13	47	43	20	77	46	NC
224	BPSOU-UR 015501 - 110221 - 1	0-2	8,55		152952	5	9	જ	61	26	157	46	NO
215	BPSOU-UR OISS 11 - 110271 - 2	2-6	7.98		1520		11	10	50	17	162	(67)	Yes
	BPSOU-UROISSII - 110721 - 3.	6-12	6,93		1515		16	48	100	96	275	(47)	ree
	BPSOU-UROISSIO-110721 - 1	5-0	6.77		1505		14	47	87	25	130	40	no
	BPSOU-UR OLSSIO - 110221 - 2.	2-6	6.73		1500		14	47	132	29	172	(ZF)	Ye
229	BPSOU-UR OISSID-10221-3	6-12	6.45		1455		11	17	206	47	302	(47)	res
1025/2	BPSOU-UR 0  SS13 - 110221 - 1	0-2	7.00		1500		11		49	23	129	(48)	Yes

			BPSOU: Un	reclaimed S	ites Field XRF	and Soil pH F	Results					<u> </u>	
Site Numb	per: MON Operator: K.Tuckson							n/Screenin	g Levels (n	ıg/kg)			Summer of
Land Use:	XRF Unit #: 98052				Resid	ential	250	_		1,200		10	
125	Sidential pH probe #: 1	Tree for more inf	1 UR Confirmation ormation on declar	ring the need for a	Non-Re		alls <u>b</u> a	-		2,300		S. Martin	
		c	confirmation sampl	e.	Comn	ational aercial	1,000						
					Storm		200	20	1000	1000	1000	10	
XRF Reading #	Sample Name	Depth (inches)	Soil pH	Date	Time	Date			XRF Resul	ts (mg/kg)			Lab
	016010 140 221 2		(s.u.)	Collected	Collected	Analysed	As	Cd	Cu	Pb	Zn	Hg	Sample
-2-2	BPSOU-UR 0 \$ 13-110221-2	2-6	7.44	11/2/21	1455	11/3/21	47	13	28	37	129	(27)	Ves
V - a second second	BPSOU-UR 015513-110221-3	6-12	Co.90		1450		12	9	74	17	132 0	(L)	jes
	BPSOU-UR OISSI3 - 110221 - 3- REP3	6-12	6.96		1450		8	27	66	13	134	26	~
234	BPSOU-UR 618513 -110221 - 3-1200	6-12	6,90		1450	_	6	47	59	14	134	27	
235	BPSOU-UB SYSTEM Check						TM	e : 5	6.1	Ros:	170,9		
236	BPSOU-UR SOZ						42	15	411	63	26	25	
337	BPSOU-UR NIST						0	13	29	17	90	40	-
	BPSOU-UR RCRA						446	576	30	480	48 (	47)	-
	BPSOU-UR USIAS			_			82	16	215	605	732(	47.)	-
240	BPSOU-URO15512 - 110221 - 1	0-2	7.14	11/2/21	1525	11/3/21	10	L8	64	58	158	16	NO
241	BPSOU-UR015512-110221-2	2-6	6.63	11/2/21	1520	1	19	28	38	18	146	(27)	Ves
242	BPSOU-UR 015512-110221 - 3	6-12	6,94	11/2/21	1515		6	8	75	18	193	26	NO
	BPSOU-URO15501-110321-1	0-2	6.83	11/3/21	1025		27	27	71	49	131	16	NO
244	BPSOU-UR ロシシュー )	2-6	7.65		020		11	28	50	31	139	(27)	Yes
100 100 NO	BPSOU-URO15501-110321-3	6-12	7.21		1015		10	28	79	26	187	(27)	Yes
	BPSOU-UR 015501-110321-3-FD	6-12	7.21		1010	-	8	28	74	22	138	(27)	Ves
247	BPSOU-UPO1SSOR-110321 -1	0-2	7.26		1030		C	47	79	1-1	103	46	NU
	BPSOU-URO1 SSOZ - 116321 - 2	2-4	7.75		1025		45	11	55	13	102	(IF)	Ves
249	BPSOU-UROISSO2-116821-2-FD.	2-6	7.72		1020		7	9	65	15	100 (	(27)	Ves
156	BPSOU-UR615502 - 110321 - 3	6-12	7.34		1015		26	28	67	18	124	26	NO
1.5710	BPSOU-UR 61550 3-1103 21-1	0-2	7.33		945		11	28	108	14	136	C7	Ves

	per: SILO   Operator: IC. Tacles M						Soil Actio	n/Screenin	g Levels (m	ng/kg)			
and Use:	XRF Unit #: 98052				Resid	ential	250			1,200		10	
Resi	dunfici) pH probe #: 1	Tree for more inf	1 UR Confirmation ormation on declar	ring the need for a	Non-Re				titus (12)	2.300	增低 带头		
1 - 0 .	e des tout a g	c	confirmation sampl	e.		ational nercial	1,000		and the second				
_					and the second s	Water	200	20	1000	1000	1000	10	
XRF Reading #	Sample Name	Depth (inch.)	Soil pH (s.u.)	Date Collected	Time Collected	Date Analysed	As	Cd	XRF Result	ts (mg/kg) Pb	Zn	Ца	Lal Sam
252	BPSOU-UROISS03-110321 - 2	2-6	7.05	11/3/21	940	19/3/21	7	46	73	21	165	(27) (27)	Ve
	BPSOU-URO15503 - 116321 - 3	6-12	7.08		935		B	28	81	26	153	(7)	Ye
254	BPSOU-UR 615504-110321 - 1	0-2	8.12		955		26	28	78	23	183	(ZZ)	Y
255	BPSOU-URO15504 - 116321 - Z	2-6	8.44		950		10	28	86	17	121	(Z7)	Y
	BPSOU-URO)5504-110321-3	(0-12	8,28		945		6	B	63	12	114	(27	) r
257	BPSOU-UR & ISS 65 - 1103 21 - 1	0-2	8.65		1105		16	68	75	44	226	(27)	Y
	BPSOU-URO15565-110321 - 2	2-6	6.83		1100		L14	18	79	211	287	(47)	Ve
259	BPSOU-UROISS65-16321 - Z-Rep	2-4	6.83		1160		25	28	69	306	269	Œ	-
260	BPSOU-UR 615565 -110371 -2 - Dup	2-6	6.83		1100		9	18	70	53	262	(27)	
261	BPSOU-UR System Cheele							2:56	ol sec	Res		3	~
262	BRSOUTOR Sidz						43	10	611	24	25	25	-
263	BPSOU-UR Niss	x					16	28	35	13	95	(27)	
264	BRSOU-UR RCNA BRSOU-UR USCIS				-		489	528	28	481	47(	(27)	-
246	BPSOU-UROISSOS-110321-3	(0-12	7.07		1600		78	20 28	218	792	70.3	(2)	
	BPSOU-URGISSOS -1103 C1 3 BPSOU-URGISSOS -1103 Z1-1	6-2	7.67		1655		13 E	26	82 64	6	276	27	Ya
	BPSOU-UROISSO7 -110321 - 1-FD	~~~~	-		1045		9	27	54	16 29	124	24	Ye
1100 C 1100	BPSOU-UR 01 SS67 - 11 6 3 21 - 2	2-(0	7.54		1640		6	48	56	10	101	(F)	N Ye
TTO -	BPSOU-UR OISTO7-116321 - 3	6-12	8.15		1035			9	58	17	112	27)	Ve
	BPSOU-UROI SSO6-110321-1	0-2	N 2010 - 10200 - 101 - 10		1055		70	67	64	15	109	67	Ye
222		2-10	8.09	NR.	1100		7	q	66	20	117. 6	25	Ye

its Number field		BPSOU: Ur	nrecla	aimed S	ites Field XRF	and S	oil pH	Results					$\overline{}$	
ite Number: [][[]] Operator: []. Tacley] and Use: XRE Unit #: @ 9.657								Soil Actio	on/Screenin	g Levels (1	mg/kg)			
and Use: XRF Unit #: 98652 Pelituation pH probe #:	*Reference 202	21 UR Confirmation	n Sample	Decision		ential	1000	250			1,200		10	
Kelling	Tree for more in	formation on decla confirmation samp	ring the	need for a	Non-Re Recre		11.15 million	1,000		ist in the second	2,300		x8 4 3 40	
					Comn			500						Hendbyels Mensignye
XRF					Storm	Water	•	200	20	1000	0 1000	1000	10	Sec.
eading # Sample Name	Depth (inches)	Soil pH (s.u.)		ate ected	Time Collected	111503	ate			XRF Resu	lts (mg/kg)			Lat
273 BPSOU-UR 015566-110321-2	2-6	7.82		13/21	1050	-	lysed	As	Cd	Cu	Pb	Zn	Hg	Sam
274 BPSOU-UR OISSCIO- 116321-3	6-12	7.82	1	514	1030	11/3	14	C	28	50	14	110	(28)	Yes
275 BPSOU-UR OISSOLD - 110321 - 3 - R	6-12	7-82			-			26 9	28	67	21	112	26	N
276 BPSOU-UR OLSSOL-110321-3-D	6-12				1045			1	28	61	19	120	(<7)	-
277 BPSOU-UR System Cheele		7.82			1045			26	28	69	23	134	(27)	1
278 BESOU-UR SIGZ								Time			, Re	8:170	1.6	-
C79 BPSOU-UR- Nist					l,			43	9	212	<u> </u>	25	<5	_
280 BPSOU-UR USUS					_	_		11	10	27	16	95	26	
261 BPSOU-UR RCRA			-					75	21	219	811	734	27	
BPSOU-UR			4	V	2019A	\	<	495	516	21	476	50	47	-
BPSOU-UR										_				
BPSOU-UR											-			
BPSOU-UR							_							
BPSOU-UR										_				
BPSOU-UR							-							
BPSOU-UR										_			2	
BPSOU-UR					_									
BPSOU-UR														
BPSOU-UR					_							_		
BPSOU-UR							_							_
BPSOU-UR						-								

# Attachment C Laboratory Data Packages



December 01, 2021

Scott Sampson Pioneer Technical Services 1101 S. Montana Street Butte, MT 59701

## RE: Project: BPSOU Unreclaimed Sampling-Revised Report Pace Project No.: 10586267

Dear Scott Sampson:

Enclosed are the analytical results for sample(s) received by the laboratory on November 04, 2021. The results relate only to the samples included in this report. Results contained within this report conform to the most current version of the TNI standards, BP LaMP Technical Requirements Revision 12.1, and any applicable Quality Assurance Project Plan (QAPP), or Work Plan unless otherwise narrated in the body of this report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network: • Pace Analytical Services - Minneapolis

This report was revised on December 1, 2021, to update the sample ID for Pace sample 10586297-009.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Inder

Jennifer Anderson jennifer.anderson@pacelabs.com (612)607-6436 Project Manager

Enclosures





### CERTIFICATIONS

Project: BPSOU Unreclaimed Sampling-Revised Report Pace Project No.: 10586267

#### Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414 A2LA Certification #: 2926.01\* 1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab Alabama Certification #: 40770 Alaska Contaminated Sites Certification #: 17-009\* Alaska DW Certification #: MN00064 Arizona Certification #: AZ0014\* Arkansas DW Certification #: MN00064 Arkansas WW Certification #: 88-0680 California Certification #: 2929 Colorado Certification #: MN00064 Connecticut Certification #: PH-0256 EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137 Florida Certification #: E87605\* Georgia Certification #: 959 Hawaii Certification #: MN00064 Idaho Certification #: MN00064 Illinois Certification #: 200011 Indiana Certification #: C-MN-01 Iowa Certification #: 368 Kansas Certification #: E-10167 Kentucky DW Certification #: 90062 Kentucky WW Certification #: 90062 Louisiana DEQ Certification #: AI-03086\* Louisiana DW Certification #: MN00064 Maine Certification #: MN00064\* Maryland Certification #: 322 Michigan Certification #: 9909 Minnesota Certification #: 027-053-137\* Minnesota Dept of Ag Approval: via MN 027-053-137 Minnesota Petrofund Registration #: 1240\* Mississippi Certification #: MN00064

Missouri Certification #: 10100 Montana Certification #: CERT0092 Nebraska Certification #: NE-OS-18-06 Nevada Certification #: MN00064 New Hampshire Certification #: 2081\* New Jersey Certification #: MN002 New York Certification #: 11647\* North Carolina DW Certification #: 27700 North Carolina WW Certification #: 530 North Dakota Certification #: R-036 Ohio DW Certification #: 41244 Ohio VAP Certification (1700) #: CL101 Ohio VAP Certification (1800) #: CL110\* Oklahoma Certification #: 9507\* Oregon Primary Certification #: MN300001 Oregon Secondary Certification #: MN200001\* Pennsylvania Certification #: 68-00563\* Puerto Rico Certification #: MN00064 South Carolina Certification #:74003001 Tennessee Certification #: TN02818 Texas Certification #: T104704192\* Utah Certification #: MN00064\* Vermont Certification #: VT-027053137 Virginia Certification #: 460163\* Washington Certification #: C486\* West Virginia DEP Certification #: 382 West Virginia DW Certification #: 9952 C Wisconsin Certification #: 999407970 Wyoming UST Certification #: via A2LA 2926.01 USDA Permit #: P330-19-00208 \*Please Note: Applicable air certifications are denoted with an asterisk (\*).



## SAMPLE SUMMARY

Project:BPSOU Unreclaimed Sampling-Revised ReportPace Project No.:10586267

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10586267001	BPSOU-UR01SS27-110221-3	Solid	11/02/21 11:50	11/04/21 10:00
10586267002	BPSOU-UR01SS26-110221-2	Solid	11/02/21 12:35	11/04/21 10:00
10586267003	BPSOU-UR01SS26-110221-3	Solid	11/02/21 12:30	11/04/21 10:00
10586267004	BPSOU-UR01SS25-110221-1	Solid	11/02/21 12:20	11/04/21 10:00
10586267005	BPSOU-UR01SS25-110221-2	Solid	11/02/21 12:10	11/04/21 10:00
10586267006	BPSOU-UR01SS25-110221-1-FD	Solid	11/02/21 12:15	11/04/21 10:00
10586267007	BPSOU-UR01SS24-110221-1	Solid	11/02/21 12:35	11/04/21 10:00
10586267008	BPSOU-UR01SS23-110221-1	Solid	11/02/21 12:25	11/04/21 10:00
10586267009	BPSOU-UR01SS23-110221-2	Solid	11/02/21 12:20	11/04/21 10:00
10586267010	BPSOU-UR01SS23-110221-3	Solid	11/02/21 12:15	11/04/21 10:00
10586267011	BPSOU-UR01SS22-110221-2	Solid	11/02/21 12:50	11/04/21 10:00
10586267012	BPSOU-UR01SS21-110221-1	Solid	11/02/21 12:35	11/04/21 10:00
10586267013	BPSOU-UR01SS21-110221-2	Solid	11/02/21 12:30	11/04/21 10:00
10586267014	BPSOU-UR01SS21-110221-3	Solid	11/02/21 12:25	11/04/21 10:00



## SAMPLE ANALYTE COUNT

Project:BPSOU Unreclaimed Sampling-Revised ReportPace Project No.:10586267

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10586267001	 BPSOU-UR01SS27-110221-3	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10586267002	BPSOU-UR01SS26-110221-2	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10586267003	BPSOU-UR01SS26-110221-3	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10586267004	BPSOU-UR01SS25-110221-1	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10586267005	BPSOU-UR01SS25-110221-2	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10586267006	BPSOU-UR01SS25-110221-1-FD	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10586267007	BPSOU-UR01SS24-110221-1	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10586267008	BPSOU-UR01SS23-110221-1	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10586267009	BPSOU-UR01SS23-110221-2	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10586267010	BPSOU-UR01SS23-110221-3	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10586267011	BPSOU-UR01SS22-110221-2	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10586267012	BPSOU-UR01SS21-110221-1	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10586267013	BPSOU-UR01SS21-110221-2	EPA 6010D	DM	5



## SAMPLE ANALYTE COUNT

Project:BPSOU Unreclaimed Sampling-Revised ReportPace Project No.:10586267

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10586267014	BPSOU-UR01SS21-110221-3	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1

PASI-M = Pace Analytical Services - Minneapolis



## **PROJECT NARRATIVE**

Project: BPSOU Unreclaimed Sampling-Revised Report

Pace Project No.: 10586267

Method:EPA 6010DDescription:6010D MET ICPClient:BPAR-PIONEER-MTDate:December 01, 2021

#### **General Information:**

14 samples were analyzed for EPA 6010D by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

#### Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Sample Preparation:

The samples were prepared in accordance with EPA 3050B with any exceptions noted below.

#### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

#### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### QC Batch: 781719

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10586267001

- M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
  - MS (Lab ID: 4162705)
    - Zinc
  - MSD (Lab ID: 4162706)
    - Lead
    - Zinc

#### Additional Comments:



## **PROJECT NARRATIVE**

Project: BPSOU Unreclaimed Sampling-Revised Report

Pace Project No.: 10586267

Method:EPA 7471BDescription:7471B MercuryClient:BPAR-PIONEER-MTDate:December 01, 2021

#### **General Information:**

14 samples were analyzed for EPA 7471B by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

#### Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Sample Preparation:

The samples were prepared in accordance with EPA 7471B with any exceptions noted below.

#### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

#### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### QC Batch: 781724

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10586267001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4162723)
  - Mercury
- MSD (Lab ID: 4162724)
  - Mercury

#### Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.



## ANALYTICAL RESULTS

Project: BPSOU Unreclaimed Sampling-Revised Report

Pace Project No.: 10586267

Sample: BPSOU-UR01SS27-1 3	110221- Lab ID:	10586267001	Collected	d: 11/02/21	11:50	Received: 11/	04/21 10:00 Ma	atrix: Solid						
Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.														
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual					
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: EF	PA 3050B								
	Pace Anal	ytical Services	- Minneapo	lis										
Arsenic	6.1	mg/kg	2.0	0.31	2	11/05/21 10:18	11/15/21 12:10	7440-38-2						
Cadmium	0.35	mg/kg	0.30	0.069	2	11/05/21 10:18	11/15/21 12:10	7440-43-9						

Copper	64.5	mg/kg	1.0	0.15	2	11/05/21 10:18	11/15/21 12:10	7440-50-8	
Lead	25.3	mg/kg	1.0	0.21	2	11/05/21 10:18	11/15/21 12:10	7439-92-1	M1
Zinc	98.6	mg/kg	4.0	0.45	2	11/05/21 10:18	11/15/21 12:10	7440-66-6	M1
7471B Mercury	<b>,</b>		7471B Prepar s - Minneapolis		nod: E	PA 7471B			
Mercury	0.034	mg/kg	0.020	0.0088	1	11/05/21 11:11	11/16/21 13:02	7439-97-6	M1
Dry Weight / %M by ASTM D2974	<b>,</b>	Method: ASTN ytical Services	M D2974 s - Minneapolis	6					
Percent Moisture	4.6	%	0.10	0.10	1		11/08/21 12:01		N2



## ANALYTICAL RESULTS

Project: BPSOU Unreclaimed Sampling-Revised Report

Pace Project No.: 10586267

Sample: BPSOU-UR01SS26-1102 2	21- Lab ID:	10586267002	Collected:	11/02/21 12:3	5 Received:	11/04/21 10:00	Matrix: Solid						
z Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.													
Parameters	Results	Units	PQL	MDL DF	Prepare	d Analyze	d CAS No.	Qual					

		01110							
6010D MET ICP	Analytical	Method: EPA	6010D Prep	aration Met	hod: E	PA 3050B			
	Pace Anal	ytical Service	s - Minneapo	lis					
Arsenic	14.8	mg/kg	2.1	0.32	2	11/05/21 10:18	11/15/21 12:18	7440-38-2	
Cadmium	2.8	mg/kg	0.32	0.072	2	11/05/21 10:18	11/15/21 12:18	7440-43-9	
Copper	77.7	mg/kg	1.1	0.15	2	11/05/21 10:18	11/15/21 12:18	7440-50-8	
Lead	148	mg/kg	1.1	0.22	2	11/05/21 10:18	11/15/21 12:18	7439-92-1	
Zinc	334	mg/kg	4.2	0.47	2	11/05/21 10:18	11/15/21 12:18	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
	Pace Analytical Services - Minneapolis								
Mercury	0.092	mg/kg	0.020	0.0088	1	11/05/21 11:11	11/16/21 13:07	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974								
	Pace Analytical Services - Minneapolis								
Percent Moisture	7.7	%	0.10	0.10	1		11/08/21 12:01		N2



Project: BPSOU Unreclaimed Sampling-Revised Report

Pace Project No.: 10586267

Sample: BPSOU-UR01SS26-17 3	10221- Lab ID:	10586267003	Collected:	11/02/21 12	:30 Received	: 11/04/21 10:00	Matrix: Solid	
Results reported on a "dry wei	ght" basis and ar	re adjusted for	percent moi	sture, sampl	e size and any	dilutions.		
Parameters	Results	Units	PQL	MDL [	F Prepare	ed Analyze	d CAS No.	Qual

6010D MET ICP	Analytical	Method: EPA	6010D Prep	aration Met	hod: E	PA 3050B			
	Pace Anal	lytical Service	es - Minneapo	lis					
Arsenic	15.5	mg/kg	2.1	0.32	2	11/05/21 10:18	11/15/21 12:20	7440-38-2	
Cadmium	1.9	mg/kg	0.31	0.070	2	11/05/21 10:18	11/15/21 12:20	7440-43-9	
Copper	92.5	mg/kg	1.0	0.15	2	11/05/21 10:18	11/15/21 12:20	7440-50-8	
Lead	288	mg/kg	1.0	0.21	2	11/05/21 10:18	11/15/21 12:20	7439-92-1	
Zinc	405	mg/kg	4.1	0.46	2	11/05/21 10:18	11/15/21 12:20	7440-66-6	
7471B Mercury	Analytical	Method: EPA	7471B Prep	aration Met	hod: E	PA 7471B			
-	Pace Anal	lytical Service	es - Minneapo	lis					
Mercury	0.21	mg/kg	0.019	0.0084	1	11/05/21 11:11	11/16/21 13:08	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: AST	M D2974						
	Pace Anal	lytical Service	es - Minneapo	lis					
Percent Moisture	5.8	%	0.10	0.10	1		11/08/21 12:01		N2



Project: BPSOU Unreclaimed Sampling-Revised Report

Pace Project No.: 10586267

Sample: BPSOU-UR01SS25-110221-Lab ID: 10586267004 Collected: 11/02/21 12:20 Received: 11/04/21 10:00 Matrix: Solid 1 Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. PQL Parameters Results Units MDL DF Prepared Analyzed CAS No. Qual 6010D MET ICP Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis

	Pace Anal	ytical Service	s - Minneapoli	S					
Arsenic	7.1	mg/kg	2.0	0.31	2	11/05/21 10:18	11/15/21 12:21	7440-38-2	
Cadmium	0.49	mg/kg	0.30	0.069	2	11/05/21 10:18	11/15/21 12:21	7440-43-9	
Copper	55.4	mg/kg	1.0	0.15	2	11/05/21 10:18	11/15/21 12:21	7440-50-8	
Lead	54.2	mg/kg	1.0	0.21	2	11/05/21 10:18	11/15/21 12:21	7439-92-1	
Zinc	155	mg/kg	4.1	0.45	2	11/05/21 10:18	11/15/21 12:21	7440-66-6	
7471B Mercury	Analytical	Method: EPA	7471B Prepa	aration Meth	nod: E	PA 7471B			
	Pace Analytical Services - Minneapolis								
Mercury	0.052	mg/kg	0.020	0.0086	1	11/05/21 11:11	11/16/21 13:10	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: AST	M D2974						
	Pace Analytical Services - Minneapolis								
Percent Moisture	8.0	%	0.10	0.10	1		11/08/21 12:01		N2



Project: BPSOU Unreclaimed Sampling-Revised Report

Pace Project No.: 10586267

Sample: BPSOU-UR01SS25-110221- 2	Lab ID: 10586267005	Collected: 11/02/21 12:10	Received: 11/04/21 10:00	Matrix: Solid					
Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.									

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual		
6010D MET ICP	Analytical	Method: EPA	A 6010D Prep	aration Met	hod: E	PA 3050B					
	Pace Anal	ytical Service	es - Minneapo	lis							
Arsenic	6.9	mg/kg	1.2	0.18	1	11/05/21 10:18	11/15/21 11:41	7440-38-2			
Cadmium	0.44	mg/kg	0.18	0.040	1	11/05/21 10:18	11/15/21 11:41	7440-43-9			
Copper	55.5	mg/kg	0.59	0.086	1	11/05/21 10:18	11/15/21 11:41	7440-50-8			
Lead	58.9	mg/kg	0.59	0.12	1	11/05/21 10:18	11/15/21 11:41	7439-92-1			
Zinc	149	mg/kg	2.3	0.26	1	11/05/21 10:18	11/15/21 11:41	7440-66-6			
7471B Mercury	Analytical	Method: EPA	A7471B Prep	aration Met	hod: E	PA 7471B					
	Pace Anal	ytical Service	es - Minneapo	lis							
Mercury	0.042	mg/kg	0.023	0.0098	1	11/05/21 11:11	11/16/21 13:12	7439-97-6			
Dry Weight / %M by ASTM D2974	Analytical	Analytical Method: ASTM D2974									
	Pace Analytical Services - Minneapolis										
Percent Moisture	19.6	%	0.10	0.10	1		11/08/21 12:02		N2		



Project: BPSOU Unreclaimed Sampling-Revised Report

#### Pace Project No.: 10586267

Sample: BPSOU-UR01SS25-110221- Lab ID: 10586267006 Collected: 11/02/21 12:15 Received: 11/04/21 10:00 Matrix: Solid 1-FD

# Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6010D MET ICP	Analytical	Method: EPA	6010D Prep	aration Met	hod: E	PA 3050B				
	Pace Anal	ytical Service	s - Minneapo	lis						
Arsenic	4.8	mg/kg	1.0	0.16	1	11/05/21 10:18	11/15/21 11:43	7440-38-2		
Cadmium	0.33	mg/kg	0.16	0.035	1	11/05/21 10:18	11/15/21 11:43	7440-43-9		
Copper	42.3	mg/kg	0.52	0.076	1	11/05/21 10:18	11/15/21 11:43	7440-50-8		
Lead	54.7	mg/kg	0.52	0.11	1	11/05/21 10:18	11/15/21 11:43	7439-92-1		
Zinc	113	mg/kg	2.1	0.23	1	11/05/21 10:18	11/15/21 11:43	7440-66-6		
7471B Mercury	Analytical	Method: EPA	7471B Prep	aration Met	hod: E	PA 7471B				
	Pace Anal	ytical Service	s - Minneapo	lis						
Mercury	0.033	mg/kg	0.020	0.0089	1	11/05/21 11:11	11/16/21 13:16	7439-97-6		
Dry Weight / %M by ASTM D2974	Analytical	Analytical Method: ASTM D2974								
	Pace Anal	ytical Service	s - Minneapo	lis						
Percent Moisture	8.4	%	0.10	0.10	1		11/08/21 12:02		N2	



Project: BPSOU Unreclaimed Sampling-Revised Report

Pace Project No.: 10586267

Lab ID: 10586267007 Collected: 11/02/21 12:35 Received: 11/04/21 10:00 Sample: BPSOU-UR01SS24-110221-Matrix: Solid 1 Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. PQL Parameters Results Units MDL DF Prepared Analyzed CAS No. Qual 6010D MET ICP Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis Arsenic 6.4 mg/kg 2.1 0.32 2 11/05/21 10:18 11/15/21 12:26 7440-38-2 Cadmium 0.50 mg/kg 0.31 0.071 2 11/05/21 10:18 11/15/21 12:26 7440-43-9 mg/kg Copper 49.5 1.0 0.15 2 11/05/21 10:18 11/15/21 12:26 7440-50-8 Lead 47.3 mg/kg 1.0 0.22 2 11/05/21 10:18 11/15/21 12:26 7439-92-1

Zinc	147	mg/kg	4.2	0.47	2	11/05/21 10:18	11/15/21 12:26	7440-66-6	
7471B Mercury	,		7471B Prepar - Minneapolis		nod: E	PA 7471B			
Mercury	0.069	mg/kg	0.020	0.0086	1	11/05/21 11:11	11/16/21 13:18	7439-97-6	
Dry Weight / %M by ASTM D2974	,	Method: ASTN /tical Services	/I D2974 s - Minneapolis	i					
Percent Moisture	8.8	%	0.10	0.10	1		11/08/21 12:02		N2



Project: BPSOU Unreclaimed Sampling-Revised Report

Pace Project No.: 10586267

Sample: BPSOU-UR01SS23-110221-Lab ID: 10586267008 Collected: 11/02/21 12:25 Received: 11/04/21 10:00 Matrix: Solid 1 Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. PQL Parameters Results Units MDL DF Prepared Analyzed CAS No. Qual 6010D MET ICP Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis

Arsenic	31.3	mg/kg	2.0	0.31	2	11/05/21 10:18	11/15/21 12:28	7440-38-2		
Cadmium	9.4	mg/kg	0.30	0.068	2	11/05/21 10:18	11/15/21 12:28	7440-43-9		
Copper	180	mg/kg	1.0	0.15	2	11/05/21 10:18	11/15/21 12:28	7440-50-8		
Lead	656	mg/kg	1.0	0.21	2	11/05/21 10:18	11/15/21 12:28	7439-92-1		
Zinc	2010	mg/kg	4.0	0.45	2	11/05/21 10:18	11/15/21 12:28	7440-66-6		
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B Pace Analytical Services - Minneapolis									
Mercury	0.61	mg/kg	0.019	0.0085	1	11/05/21 11:11	11/16/21 13:20	7439-97-6		
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis									
Percent Moisture	6.7	%	0.10	0.10	1		11/08/21 12:02		N2	



Project: BPSOU Unreclaimed Sampling-Revised Report

Pace Project No.: 10586267

Sample: BPSOU-UR01SS23- 2	110221- Lab ID:	10586267009	Collecte	d: 11/02/21	12:20	Received: 11/	04/21 10:00 M	atrix: Solid	
Results reported on a "dry we	eight" basis and ar	e adjusted for	r percent mo	oisture, sar	nple s	ize and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA	6010D Prep	aration Met	hod: E	PA 3050B			
	Pace Ana	lytical Services	s - Minneapo	lis					
Arsenic	60.1	mg/kg	10.7	1.6	10	11/05/21 10:18	11/15/21 12:30	7440-38-2	
Cadmium	79.2	mg/kg	1.6	0.37	10	11/05/21 10:18	11/15/21 12:30	7440-43-9	
Copper	569	mg/kg	5.4	0.78	10	11/05/21 10:18	11/15/21 12:30	7440-50-8	
Lead	2850	mg/kg	5.4	1.1	10	11/05/21 10:18	11/15/21 12:30	7439-92-1	
Zinc	22800	mg/kg	21.4	2.4	10	11/05/21 10:18	11/15/21 12:30	7440-66-6	
7471B Mercury	Analytical	Method: EPA	7471B Prep	aration Met	hod: E	PA 7471B			
····· <b>/</b>		lytical Services							

	r abe / maij		, winnieupono							
Mercury	2.4	mg/kg	0.19	0.082	10	11/05/21 11:11	11/16/21 15:32	7439-97-6		
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis									
Percent Moisture	9.4	%	0.10	0.10	1		11/08/21 12:02		N2	



Project: BPSOU Unreclaimed Sampling-Revised Report

Pace Project No.: 10586267

Sample: BPSOU-UR01SS23-110221- 3	Lab ID: 10586267010	Collected: 11/02/21 12:15	Received: 11/04/21 10:00	Matrix: Solid					
Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.									

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual		
6010D MET ICP	Analytical	Method: EPA	6010D Prep	aration Met	hod: E	PA 3050B					
	Pace Anal	ytical Service	es - Minneapo	lis							
Arsenic	51.7	mg/kg	2.1	0.33	2	11/05/21 10:18	11/15/21 12:31	7440-38-2			
Cadmium	6.0	mg/kg	0.32	0.073	2	11/05/21 10:18	11/15/21 12:31	7440-43-9			
Copper	285	mg/kg	1.1	0.16	2	11/05/21 10:18	11/15/21 12:31	7440-50-8			
Lead	1340	mg/kg	1.1	0.22	2	11/05/21 10:18	11/15/21 12:31	7439-92-1			
Zinc	1310	mg/kg	4.3	0.48	2	11/05/21 10:18	11/15/21 12:31	7440-66-6			
7471B Mercury	Analytical	Method: EPA	7471B Prep	aration Met	hod: E	PA 7471B					
	Pace Anal	ytical Service	es - Minneapo	lis							
Mercury	1.2	mg/kg	0.039	0.017	2	11/05/21 11:11	11/16/21 15:33	7439-97-6			
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974										
	Pace Anal	ytical Service	es - Minneapo	lis							
Percent Moisture	12.1	%	0.10	0.10	1		11/08/21 12:03		N2		



Project: BPSOU Unreclaimed Sampling-Revised Report

Pace Project No.: 10586267

Sample: BPSOU-UR01SS22-110221- 2	Lab ID: 10586267011	Collected: 11/02/21 12:50	Received: 11/04/21 10:00	Matrix: Solid
Results reported on a "dry weight" bas	sis and are adjusted for p	ercent moisture, sample siz	e and any dilutions.	

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA	6010D Prep	aration Met	hod: E	PA 3050B			
	Pace Anal	ytical Service	es - Minneapo	lis					
Arsenic	22.2	mg/kg	1.1	0.16	1	11/05/21 10:18	11/15/21 11:51	7440-38-2	
Cadmium	0.49	mg/kg	0.16	0.036	1	11/05/21 10:18	11/15/21 11:51	7440-43-9	
Copper	30.4	mg/kg	0.53	0.077	1	11/05/21 10:18	11/15/21 11:51	7440-50-8	
Lead	12.7	mg/kg	0.53	0.11	1	11/05/21 10:18	11/15/21 11:51	7439-92-1	
Zinc	42.0	mg/kg	2.1	0.24	1	11/05/21 10:18	11/15/21 11:51	7440-66-6	
7471B Mercury	Analytical	Method: EPA	7471B Prep	aration Metl	hod: E	PA 7471B			
-	Pace Anal	ytical Service	es - Minneapo	lis					
Mercury	0.029	mg/kg	0.020	0.0088	1	11/05/21 11:11	11/16/21 13:25	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: AST	M D2974						
	Pace Anal	ytical Service	es - Minneapo	lis					
Percent Moisture	7.4	%	0.10	0.10	1		11/08/21 12:03		N2



Project: BPSOU Unreclaimed Sampling-Revised Report

Pace Project No.: 10586267

Sample: BPSOU-UR01SS21-110221-Lab ID: 10586267012 Collected: 11/02/21 12:35 Received: 11/04/21 10:00 Matrix: Solid 1 Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. PQL Parameters Results Units MDL DF Prepared Analyzed CAS No. Qual 6010D MET ICP Analytical Method: EPA 6010D Preparation Method: EPA 3050B

	Pace Anal	ytical Service	s - Minneapoli	S					
Arsenic	195	mg/kg	1.1	0.16	1	11/05/21 10:18	11/15/21 11:53	7440-38-2	
Cadmium	0.82	mg/kg	0.16	0.037	1	11/05/21 10:18	11/15/21 11:53	7440-43-9	
Copper	398	mg/kg	0.54	0.079	1	11/05/21 10:18	11/15/21 11:53	7440-50-8	
Lead	119	mg/kg	0.54	0.11	1	11/05/21 10:18	11/15/21 11:53	7439-92-1	
Zinc	271	mg/kg	2.1	0.24	1	11/05/21 10:18	11/15/21 11:53	7440-66-6	
7471B Mercury	,		7471B Prepa s - Minneapoli		nod: E	PA 7471B			
Mercury	0.25	mg/kg	0.020	0.0088	1	11/05/21 11:11	11/16/21 13:26	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	10.5	%	0.10	0.10	1		11/08/21 12:03		N2



Project: BPSOU Unreclaimed Sampling-Revised Report

Pace Project No.: 10586267

Sample: BPSOU-UR01SS21-110221- 2	Lab ID: 10586267013	Collected: 11/02/21 12:30	Received: 11/04/21 10:00	Matrix: Solid
Results reported on a "dry weight" bas	is and are adjusted for p	percent moisture, sample siz	e and any dilutions.	

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA	6010D Prep	aration Met	hod: E	PA 3050B			
	Pace Anal	ytical Service	es - Minneapo	lis					
Arsenic	158	mg/kg	1.1	0.17	1	11/05/21 10:18	11/15/21 11:54	7440-38-2	
Cadmium	0.25	mg/kg	0.16	0.037	1	11/05/21 10:18	11/15/21 11:54	7440-43-9	
Copper	224	mg/kg	0.54	0.079	1	11/05/21 10:18	11/15/21 11:54	7440-50-8	
Lead	35.6	mg/kg	1.1	0.22	2	11/05/21 10:18	11/15/21 12:33	7439-92-1	
Zinc	96.3	mg/kg	2.2	0.24	1	11/05/21 10:18	11/15/21 11:54	7440-66-6	
7471B Mercury	Analytical	Method: EPA	7471B Prep	aration Met	hod: E	PA 7471B			
-	Pace Anal	ytical Service	es - Minneapo	lis					
Mercury	0.27	mg/kg	0.019	0.0082	1	11/05/21 11:11	11/16/21 13:28	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: AST	M D2974						
	Pace Anal	ytical Service	es - Minneapo	lis					
Percent Moisture	9.6	%	0.10	0.10	1		11/08/21 12:03		N2



Project: BPSOU Unreclaimed Sampling-Revised Report

Pace Project No.: 10586267

Sample: BPSOU-UR01SS21-110221- 3	Lab ID: 10586267014	Collected: 11/02/21 12:25	Received: 11/04/21 10:00	Matrix: Solid
Results reported on a "dry weight" bas	sis and are adjusted for p	ercent moisture, sample siz	e and any dilutions.	

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA	6010D Prep	aration Met	hod: E	PA 3050B			
	Pace Anal	ytical Service	es - Minneapo	lis					
Arsenic	167	mg/kg	1.1	0.16	1	11/05/21 10:18	11/15/21 11:56	7440-38-2	
Cadmium	0.14J	mg/kg	0.16	0.036	1	11/05/21 10:18	11/15/21 11:56	7440-43-9	
Copper	241	mg/kg	0.53	0.078	1	11/05/21 10:18	11/15/21 11:56	7440-50-8	
Lead	18.2	mg/kg	0.53	0.11	1	11/05/21 10:18	11/15/21 11:56	7439-92-1	
Zinc	60.0	mg/kg	2.1	0.24	1	11/05/21 10:18	11/15/21 11:56	7440-66-6	
7471B Mercury	Analytical	Method: EPA	7471B Prep	aration Met	hod: E	PA 7471B			
	Pace Anal	ytical Service	es - Minneapo	lis					
Mercury	0.062	mg/kg	0.019	0.0083	1	11/05/21 11:11	11/16/21 13:29	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: AST	M D2974						
	Pace Anal	ytical Service	es - Minneapo	lis					
Percent Moisture	10	%	0.10	0.10	1		11/08/21 12:03		N2



### **QUALITY CONTROL DATA**

Project: Pace Project No.:	BPSOU 1058626		Sampling-Revis	sed Repor	t								
QC Batch:	781724	1		Analy	/sis Met	thod:	EPA 7471B						
QC Batch Method:	EPA 74	171B		Analy	/sis Des	scription:	7471B Merc	ury Solid	3				
				Labo	ratory:	·	Pace Analyt	ical Servi	ces - Minnea	apolis			
Associated Lab Sam			, 10586267002 8, 10586267009	,	,			,	,		,		
METHOD BLANK:	4162721				Matrix:	Solid							
Associated Lab Sam			, 10586267002 8, 10586267009	, 1058626	57010, 1	0586267011,		,	, -		,		
Param	neter		Units	Blar Resi		Reporting Limit	MDI	L	Analyzed	Qu	ualifiers		
Mercury			mg/kg	<(	0.0084	0.0	19 0	0.0084	1/16/21 12:	59			
LABORATORY CON	ITROL S	AMPLE: 41	62722										
				Spike		LCS	LCS	% F	Rec				
Param	neter		Units	Conc.	F	Result	% Rec	Lin	nits (	Qualifiers			
Mercury			mg/kg	0.4	.8	0.50	103	3	80-120		_		
MATRIX SPIKE & M	ATRIX SI		CATE: 41627	-	MOD	416272	4						
		1	0586267001	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter		Units		Conc.	Conc.		Result	% Rec	% Rec	5% Rec	RPD	RPD	Qual
Mercury		mg/kg	0.034	0.47	0.4	45 0.30	0.33	55	66	80-120	11	20	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



## **QUALITY CONTROL DATA**

QC Batch: 7817	719		Anal	ysis Metho	d: E	PA 6010D							
QC Batch Method: EPA	3050B		Anal	ysis Descri	ption: 6	010D Solid	s						
Associated Lab Samples:		1, 10586267002 8, 10586267009	2, 1058626		86267004, 1		)5, 1058	36267006,	10586	267007			
METHOD BLANK: 41627	03			Matrix: S	olid								
Associated Lab Samples:		1, 10586267002 8, 10586267009	9, 1058626	67010, 105	86267011, 1								
Parameter		Units	Bla Res		Reporting Limit	MDL	-	Analyz	ed	Qu	alifiers		
Arsenic		mg/kg		<0.15	0.99		0.15	11/15/21	11:21				
Cadmium		mg/kg		<0.034	0.33		0.034	11/15/21					
Copper		mg/kg		<0.072	0.50		0.072	11/15/21					
Lead		mg/kg		<0.10	0.50	)	0.10	11/15/21	11:21				
Zinc		mg/kg		<0.22	2.0	)	0.22	11/15/21	11:21				
LABORATORY CONTROL	SAMPLE: 4	162704											
			Spike	LC	S	LCS	%	Rec					
Parameter		Units	Conc.	Re	sult	% Rec	Li	imits	Qua	lifiers	_		
Arsenic		mg/kg	49	.5	47.8	97	,	80-120					
Cadmium		mg/kg	49	.5	49.6	100	)	80-120					
Copper		mg/kg	49		49.0	99		80-120					
Lead		mg/kg	49		48.8	99		80-120					
Zinc		mg/kg	49	.5	48.1	97		80-120					
MATRIX SPIKE & MATRIX	SPIKE DUPLI	CATE: 41627	705		4162706								
			MS	MSD						_			
Parameter	1 Units	0586267001 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Re		Rec imits	RPD	Max RPD	Qua
Arsenic	mg/kg	6.1	50.4	51.4	48.8	49.3	8		84 7	75-125	1	20	
Cadmium	mg/kg	0.35	50.4	51.4	44.6	45.3	8	38	88 7	75-125	2	20	
Copper	mg/kg	64.5	50.4	51.4	106	115		32		75-125	8		
_ead	mg/kg	25.3	50.4	51.4	65.3	62.1				75-125	5		
Zinc	mg/kg	98.6	50.4	51.4	123	128	2	49	58 7	75-125	4	20	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



## **QUALITY CONTROL DATA**

Project:	BPSOU Unreclaim	ed Sampling-Re	vised Report				
Pace Project No .:	10586267						
QC Batch:	782117		Analysis Meth	od: AS	STM D2974		
QC Batch Method:	ASTM D2974		Analysis Desc	ription: Dr	y Weight / %M b	y ASTM D2	2974
			Laboratory:	Pa	ice Analytical Se	rvices - Mir	neapolis
Associated Lab Sar		,	02, 10586267003, 10 09, 10586267010, 10	,	,		,
SAMPLE DUPLICA	TE: 4164948						
			10586267001	Dup		Max	
Paran	neter	Units	Result	Result	RPD	RPD	Qualifiers
Percent Moisture		%	4.6	4.2	9		30 N2
SAMPLE DUPLICA	TE: 4164949						
			10586267011	Dup		Max	
Parar	neter	Units	Result	Result	RPD	RPD	Qualifiers
Percent Moisture		%		7.2	3	-	30 N2

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### QUALIFIERS

Project: BPSOU Unreclaimed Sampling-Revised Report

Pace Project No.: 10586267

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD** - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:BPSOU Unreclaimed Sampling-Revised ReportPace Project No.:10586267

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
10586267001	BPSOU-UR01SS27-110221-3	EPA 3050B	781719	EPA 6010D	782097
0586267002	BPSOU-UR01SS26-110221-2	EPA 3050B	781719	EPA 6010D	782097
0586267003	BPSOU-UR01SS26-110221-3	EPA 3050B	781719	EPA 6010D	782097
0586267004	BPSOU-UR01SS25-110221-1	EPA 3050B	781719	EPA 6010D	782097
0586267005	BPSOU-UR01SS25-110221-2	EPA 3050B	781719	EPA 6010D	782097
0586267006	BPSOU-UR01SS25-110221-1-FD	EPA 3050B	781719	EPA 6010D	782097
0586267007	BPSOU-UR01SS24-110221-1	EPA 3050B	781719	EPA 6010D	782097
0586267008	BPSOU-UR01SS23-110221-1	EPA 3050B	781719	EPA 6010D	782097
0586267009	BPSOU-UR01SS23-110221-2	EPA 3050B	781719	EPA 6010D	782097
0586267010	BPSOU-UR01SS23-110221-3	EPA 3050B	781719	EPA 6010D	782097
0586267011	BPSOU-UR01SS22-110221-2	EPA 3050B	781719	EPA 6010D	782097
0586267012	BPSOU-UR01SS21-110221-1	EPA 3050B	781719	EPA 6010D	782097
0586267013	BPSOU-UR01SS21-110221-2	EPA 3050B	781719	EPA 6010D	782097
0586267014	BPSOU-UR01SS21-110221-3	EPA 3050B	781719	EPA 6010D	782097
0586267001	BPSOU-UR01SS27-110221-3	EPA 7471B	781724	EPA 7471B	782474
0586267002	BPSOU-UR01SS26-110221-2	EPA 7471B	781724	EPA 7471B	782474
0586267003	BPSOU-UR01SS26-110221-3	EPA 7471B	781724	EPA 7471B	782474
0586267004	BPSOU-UR01SS25-110221-1	EPA 7471B	781724	EPA 7471B	782474
0586267005	BPSOU-UR01SS25-110221-2	EPA 7471B	781724	EPA 7471B	782474
0586267006	BPSOU-UR01SS25-110221-1-FD	EPA 7471B	781724	EPA 7471B	782474
0586267007	BPSOU-UR01SS24-110221-1	EPA 7471B	781724	EPA 7471B	782474
0586267008	BPSOU-UR01SS23-110221-1	EPA 7471B	781724	EPA 7471B	782474
0586267009	BPSOU-UR01SS23-110221-2	EPA 7471B	781724	EPA 7471B	782474
0586267010	BPSOU-UR01SS23-110221-3	EPA 7471B	781724	EPA 7471B	782474
0586267011	BPSOU-UR01SS22-110221-2	EPA 7471B	781724	EPA 7471B	782474
0586267012	BPSOU-UR01SS21-110221-1	EPA 7471B	781724	EPA 7471B	782474
0586267013	BPSOU-UR01SS21-110221-2	EPA 7471B	781724	EPA 7471B	782474
0586267014	BPSOU-UR01SS21-110221-3	EPA 7471B	781724	EPA 7471B	782474
0586267001	BPSOU-UR01SS27-110221-3	ASTM D2974	782117		
0586267002	BPSOU-UR01SS26-110221-2	ASTM D2974	782117		
0586267003	BPSOU-UR01SS26-110221-3	ASTM D2974	782117		
0586267004	BPSOU-UR01SS25-110221-1	ASTM D2974	782117		
0586267005	BPSOU-UR01SS25-110221-2	ASTM D2974	782117		
0586267006	BPSOU-UR01SS25-110221-1-FD	ASTM D2974	782117		
0586267007	BPSOU-UR01SS24-110221-1	ASTM D2974	782117		
0586267008	BPSOU-UR01SS23-110221-1	ASTM D2974	782117		
0586267009	BPSOU-UR01SS23-110221-2	ASTM D2974	782117		
0586267010	BPSOU-UR01SS23-110221-3	ASTM D2974	782117		
0586267011	BPSOU-UR01SS22-110221-2	ASTM D2974	782117		
0586267012	BPSOU-UR01SS21-110221-1	ASTM D2974	782117		
0586267013	BPSOU-UR01SS21-110221-2	ASTM D2974	782117		
0586267014	BPSOU-UR01SS21-110221-3	ASTM D2974	782117		

Laboratory M.	Soil, Sedimen	BP Site Node Path:

Laboratory Management Program (LaMP) Chain of Custody Record

diment and Groundwater Samples

Page 1 of 2 Rush TAT Yes 14 day No

11/17/21

Req Due Date (mm/dd/yy):

Lab Name:	e: Pace Analytical	rtical	BP/ARC Facility Address:	Address:							Consult	Consultant/Contractor:	ractor:		Pione	Pioneer Technical Services	S
Lab Address:	11 A	1700 Elm Street SE, Minneapolis, MN 55414	City, State, ZIP Code:	Code:							Consult	ant/Cont	Consultant/Contractor Project No:	ject No:	BPSO	BPSOU Unreclaimed Sampling	npling
Lab PM:	Jennifer Anderson	nderson	Lead Regulatory Agency	Agency:							Address				1	1101 S. Montana St.	
Lab Phone:	le: 612-607-6436	436	California Global ID No .:	ID No.:							Consult	ant/Cont	Consultant/Contractor PM:		Scott	Scott Sampson	
ab Shipp	Lab Shipping Accnt:		Enfos Proposal No:	Vo:							Phone:	4	406-697-0946		Email: ssam	ssampson@pioneer-technical.com	-technical.co
ab Bottle	Lab Bottle Order No:		Accounting Mode:	e: Provision		OOC-BU		00	OOC-RM	1	Send/St	Send/Submit EDD to:	D to:		Scott	Scott Sampson	
Other Info:			Stage		Activity						Invoice To:	To:			BP-RM	BP-Other	1
BP/RM PM:	M: Mike Mc Anulty	nulty						8	equest	Requested Analyses	lyses				Re	Report Type & QC Level	Level
PM Phone:	e: 406-723-1822	322				Filte	Filtered (Y/N)		-						Limited	Limited (Standard) Package	je
PM Email:	- sn	mcanumc@bp.com				Pre	Preservation									Limited Plus Package	)e
Lab No.	Jnique Sample	Unique Sample ID, must follow format of SAMPLENAMEYYYYMMDD Examples: MW01_20190101; BH01_3-5_20190101	ddmmyyyy	Time	tinU dłąd	itab (G) or Composite (C)	xitel	sisylenA	alai Metals 6010 As, Cd, Cu, Pb, Zn					WO# :		Fuil Package Level 2 MO# : 10586267	Je Level 2
-		BPSOU-UR01SS27-110221-3		11:50	-	-					$\uparrow$	-		1	100		
-		BPSOU-UR01SS26-110221-2		12:35	.5	-	soil		×			-			200		
		BPSOU-UR01SS26-110221-3		12:30	.5	-	soil		×						003		
		BPSOU-UR01SS25-110221-1		12:20	.5	7	soil		×						HOB		
_		BPSOU-UR01SS25-110221-2		12:10	. <u>c</u>	- -	soil		×						200		
		BPSOU-UR01SS25-110221-1-FD		12:15	. <u>c</u>	-	soil		×						000		
		BPSOU-UR01SS24-110221-1		12:35	. <u>c</u>	د ٦	soil		×						200		
ampler's	Sampler's Name:	Jesse Sims	Relin	Relinquished By / Affiliation	Affilia	tion		Date		Time		Aco	Accepted By / Affiliation	y / Affili	ation	Date	Time
ampler's	Sampler's Company:	Pioneer Technical Services	Jesse Sims/PTS					11/3/2021	021	1600	AC	/PA(	CA			11/04/21	No:00
Ship Method:	nod: FedEx Overnight	11/3/2021															
ipment	Shipment Tracking No:	4278 9934 6440															
pecial	Special Instructions:	*Maximum 14 day TAT					-										

Proprietary and Confidential Property of BP and its Affiliates

Laboratory M	Soil, Sedimer	BP Site Node Path:	BP/RM Facility No:
			No. of Street,

Laboratory Management Program (LaMP) Chain of Custody Record

vil, Sediment and Groundwater Samples

Page\_2\_ of \_2\_

Req Due Date (mm/dd/yy): 11/17/21 Rush Lab Work Order Number:	Rush TAT Yes 14 day No.
): 11/17/21	

Lab Address: 1700 Eim Street SE. Mini Lab Phone: Jennifer Anderson Lab Phone: 612-607-6436 Lab Shipping Accnt: Lab Bottle Order No: Other Info: BP/RM PM: Mike Mc Anulty PM Phone: 406-723-1822 PM Phone: 406-723-1822 PM Email: <u>mcanumc@bp.com</u> PM Email: <u>mcanumc@bp.com</u> No.	1700 Elm Street SE, Minneapolis, MN 55414 Jannifer Anderson	Cit, "tate, ZIP Code:	100-8-228 J.C											
ab PM: Jennifer Anderson ab Shipping Accnt: ab Bottle Order No: 2hter Info: 3P/RM PM: Mike Mc Anulty 3P/RM PM: 406-723-1822 2M Phone: 406-723-1822 2M Email: <u>mcanumc@bp.c</u> 2M Email: <u>mcanumc@bp.c</u>			Code:							Consultant/Contractor Project No.	or Project No:	BP	<b>BPSOU Unreclaimed Sampling</b>	Sampling
ab Phone: 612-607-6436 ab Shipping Acont: ab Bottle Order No: 2)ther Info: 3P/RM PM: Mike Mc Anuity 3P/RM Phone: 406-723-1822 M Email: mcanumc@bp.c No.		Lead Regulatory Agency.	ry Agency:							Address:			1101 S. Montana St	St
ab Shipping Accnt: ab Bottle Order No: 2ther Info: 3P/RM PM: Mike Mc Anulty M Phone: 406-723-1822 2M Email: mcanumc@bp.c 2M Email: Mcanumc@bp.c No.		Californis Global ID No.	al ID No.:							Consultant/Contractor PM	or PM:	Sco	Scott Sampson	
ab Bottle Order No: 3P/RM PM: Mike Mc Anulty M Phone: 406-723-1822 M Email: mcanumc@bp.c Unique Sample ID, mu: No.		Enfos Proposal No:	I No:							Phone: 406-	406-697-0946 E	Email: 556	ampson@pione	ssampson@pioneer-technical.com
Nither Info:     Nitke Mc Anulty       IP/RM PM:     Mike Mc Anulty       M Phone:     406-723-1822       IM Email:     Incanumc@bp.c       IM Email:     Incanumc@bp.c       IM Email:     Incanumc@bp.c       INO.     No.		Accounting Mode:	de: Provision	1	OOC-BU	) D	000 -	OOC-RM	1	Send/Submit EDD to:		Sci	Scott Sampson	
IP/RM PM: Mike Mc Anulty M Phone: 406-723-1822 M Email: <u>mcanumc@bp.c</u> M Lab Unique Sample ID, mu: Ro.		Stage		Activity						Invoice To:		BP-RM	BP-Other	
M Phone: 406-723-1822 M Email: <u>mcanumc@bp.c</u> Lab Unique Sample ID, mu: No.							R	Requested Analyses	d Anal	yses			Report Type & QC Level	2C Level
M Email: <u>mcanumc@bp.c</u> Lab No.					Filter	Filtered (Y/N)		_				Lim	Limited (Standard) Package	ckage
	com				Pres	Preservation							Limited Plus Package	kage
					515	22.4		UZ					Full Pac	Full Package Level 2
	Unique Sample ID, must follow format of SAMPLENAMEYYYYMMDD Examples: MW01_20190101; BH01_3-5_20190101	ддммүүү	Time	JinU dìqaD	Grab (G) or Composite (C) Total Number of Containe	xinteM	sisylenA	Total Metals 6010 As, Cd, Cu, Pb, . 7471 Mercury					Comments	3
	BPSOU-UR01SS23-110221-1		12:25	.E	-	soil		×					800	
	BPSOU-UR01SS23-110221-2		12:20	. <u>E</u>	-	soil		×					109	
	BPSOU-UR01SS23-110221-3		12:15	. <u>E</u>	-	soil		×				2	010	
	BPSOU-UR01SS22-110221-2		12:50	. <u>⊆</u>	-	soil		×					110	
	BPSOU-UR01SS21-110221-1		12;35	. <u>E</u>	-	soil		×					110	
	BPSOU-UR01SS21-110221-2		12:30										013	
	BPSOU-UR01SS21-110221-3		12:25										014	
Sampler's Name: Jesse Sims	Sims	Reli	Relinquished By / Affiliation	Affilia	tion		Date	_	Time	Accep	Accepted By / Affiliation	ation	V Date	Time
Sampler's Company: Pioneer	Pioneer Technical Services	Jesse Sims/PTS	S				11/3/2021		1600	ACIPACR	R		41 106/	21 10:00
Ship Method: FedEx Overnight	11/3/2021												-	
Shipment Tracking No: 4278 99	4278 9934 6440										2			
Special Instructions: *Maxim	*Maximum 14 day TAT													
THIS LINE - LAB USE	THIS LINE - LAB USE ONLY: Custody Seals In Place: (res)/ No		Temp Blank: (Yes) / No	-	ooler T	Cooler Temp on Receipt.	Receipt	2.Y	°F/C	C   Trip Blank: Yes / No	Yes / No	MS/MSD	MS/MSD Sample Submitted: Yes / No	Yes / No

							11.5	and the second second	-			
	1				Docum	ent Nam	ne:		Docu	ment Re	evised: 12Aug	2020
	Pace Ana	alytical®	Sample	Condi	tion Up	oon Reco	eipt (S	CUR) - ESI		Pa	ge 1 of 1	
	1				Docun	nent No	.:		Pa	ce Anal	ytical Services	-
	1		E	NV-F	RM-MI	N4-0149	9 Rev.	01	a contra	Mir	neapolis	
Sample Co		lame:				Proj	ect #:					
Upon Rece Tech S	pecs	210 AL. 1110	(A) C12					WO	#:1(	058	6267	
		an thum		nvn				PM: J	MO	Du	e Date: 11	/17/21
Courier:	Pace			ercial	Clier		_		T: BP-P			
Tracking	Number: <u>4778</u>	393464	ho			e Exception						
Custody S	eal on Cooler/Box P	resent? Ye	s 🗌 No		Seals	s Intact?	₽¥	es 🗌 No	Biolo	gical Tis	sue Frozen? 🗌	Yes No N/A
Packing N	-		ubble Bags		lone	Other	r:	111		Те	mp Blank? 🥂	Yes 🗌 No
Thermome		T2(1336) 1 T5(0489)	3(0459)	ту	pe of Ice		Wet	Blue	None	Dry	Melted	
Temp should	be above freezing to 6°C	Cooler To	emp Read w/	temp	blank:∠	1.4			°C	15 G HERRICHTERSTEIN	e Corrected no temp blank	
Correction	Factor: MUR	Cooler Temp (	Corrected w/	temp	blank :_	1.4	1.1	Stand St.	°C	only):		ENV-FRM-MIN4-0142
Internet and the second	lated Soil: ( 🗌 N/A,			1000	1		Date	Initials of P	erson Exa	mining C	ontents: A	MAUL
	originate in a quaran			ates: A	L, AR, CA	A, FL, GA,					ource (internation	nally, including
	NC, NM, NY, OK, OR, S	C, TN, TX or VA (	check maps)?		Yes	No	Hav	vaii and Puert	o Rico)?		Yes 🕅 No	
	If Yes to eit	her question, fil	l out a Regul	ated S	ioil Cheo	cklist (F-N	NN-Q-	338) and inc	lude with	SCUR/CO	DC paperwork.	
										COMM	IENTS:	
Chain of Cust	tody Present and Fille	d Out?		Yes	No		1.					
Chain of Cust	tody Relinquished?	11 10	K	Yes	No		2.			n Minister	in the line of	Married Married Married
Sampler Nam	ne and/or Signature o	n COC?		Yes	No	□N/A	3.		13.11.124			16
Samples Arri	ved within Hold Time	?	<u>S</u>	Yes	No	a pa la se	4.					
Short Hold T	ime Analysis (<72 hr)	?		]Yes	No	~		Fecal Colifor				D/cBOD Hex Chrome
Rush Turn A	round Time Requeste	ed?		]Yes	No	N	6.				- 161	
Sufficient Sam				Yes	No No	Pr. t						
	Provided for MS/MSD	(if more than 10 s		Yes		DAN/A	7.		State of	IN.		
	ainers Used?			Yes Yes	DNo No		8.					
Containers In	tainers Used?	Contraction of the		Yes			9.		11111			The second second
	Volume Received for	Dissolved Tests?		Yes			10.	Is sediment	visible in th	e dissolv	ed container?	
	ormation available to re					LS IVA		no, write ID/	1			See Exception
	ater Soil Oil Oil O	a se concerer		a res								ENV-FRM-MIN4-014
	s needing acid/base p		been	10 AL	NOT MAKE	51,2013	12. S	ample #				
checked?				]Yes	No							
						5						
	s needing preservatio		in			-		🗌 NaOH	٦H	INO <sub>3</sub>	H₂SO₄	Zinc Acetate
	vith EPA recommenda			]Yes	No	A/A						
	4, <2pH, NaOH >9 Sul					-	Desiti		Type			See Exception
	/OA, Coliform, TOC/D			]Yes	No	MN/A	Chlor	ve for Res.	_Yes ☐No	nH Par	er Lot#	ENV-FRM-MIN4-0142
	vater) and Dioxin/PFA must be added to asso			s (veri	fy with P	M first)		Chlorine	0-6 Roll	prird	0-6 Strip	0-14 Strip
				- (ren	.,					A COM		
	present on soil VOA or		C. C	]Yes	No	N/A	13.			1.2.24		See Exception
	VOA Vials (greater th	nan 6mm)?		Yes	<u>□</u> No	N/A			- 5 5 5	1001.00	3 3 1 2 1 3 3	ENV-FRM-MIN4-0140
3 Trip Blanks			11	]Yes	No	EN/A	14.	D				
Trip Blank Cu	stody Seals Present?			Yes	No	N/A		Pace Trip Bla	nk Lot # (if	purchase	ea):	11
Temp Log: Tem 20 mins	p must be maintained at <	6°C during login, rec	ord temp every	CI		TIFICATI		SOLUTION		Field	d Data Require	d? Yes No
Opened Time:	230 Temp: 1.	H Corrected T	emp: 1 U	-		ntacted:	5.4/ HL				e/Time:	
Time:	put in cooler	Confected I		-		/Resolut	ion:	NATURAL STREET		Dati		
Time: 125		, Corrected T	emp: 1 U	1.0		,			The Party			
a dia kaominina dia kaomin		Conected I		-		1111	70			11/	07/2021	
	anager Review:	An	dere				11.1.20		Date			
	er there is a discrepan			liance	samples,	a copy of	this for	m will be sent	to the Nor	th Carolin	a DEHNR Certific	ation Office ( i.e out o



November 17, 2021

Scott Sampson Pioneer Technical Services 1101 S. Montana Street Butte, MT 59701

RE: Project: BPSOU Unreclaimed Sampling Pace Project No.: 10586277

Dear Scott Sampson:

Enclosed are the analytical results for sample(s) received by the laboratory on November 04, 2021. The results relate only to the samples included in this report. Results contained within this report conform to the most current version of the TNI standards, BP LaMP Technical Requirements Revision 12.1, and any applicable Quality Assurance Project Plan (QAPP), or Work Plan unless otherwise narrated in the body of this report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network: • Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Indera

Jennifer Anderson jennifer.anderson@pacelabs.com (612)607-6436 Project Manager

Enclosures





Pace Analytical Services, LLC 1700 Elm Street Minneapolis, MN 55414 (612)607-1700

### CERTIFICATIONS

Project: BPSOU Unreclaimed Sampling Pace Project No.: 10586277

### Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414 A2LA Certification #: 2926.01\* 1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab Alabama Certification #: 40770 Alaska Contaminated Sites Certification #: 17-009\* Alaska DW Certification #: MN00064 Arizona Certification #: AZ0014\* Arkansas DW Certification #: MN00064 Arkansas WW Certification #: 88-0680 California Certification #: 2929 Colorado Certification #: MN00064 Connecticut Certification #: PH-0256 EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137 Florida Certification #: E87605\* Georgia Certification #: 959 Hawaii Certification #: MN00064 Idaho Certification #: MN00064 Illinois Certification #: 200011 Indiana Certification #: C-MN-01 Iowa Certification #: 368 Kansas Certification #: E-10167 Kentucky DW Certification #: 90062 Kentucky WW Certification #: 90062 Louisiana DEQ Certification #: AI-03086\* Louisiana DW Certification #: MN00064 Maine Certification #: MN00064\* Maryland Certification #: 322 Michigan Certification #: 9909 Minnesota Certification #: 027-053-137\* Minnesota Dept of Ag Approval: via MN 027-053-137 Minnesota Petrofund Registration #: 1240\* Mississippi Certification #: MN00064

Missouri Certification #: 10100 Montana Certification #: CERT0092 Nebraska Certification #: NE-OS-18-06 Nevada Certification #: MN00064 New Hampshire Certification #: 2081\* New Jersey Certification #: MN002 New York Certification #: 11647\* North Carolina DW Certification #: 27700 North Carolina WW Certification #: 530 North Dakota Certification #: R-036 Ohio DW Certification #: 41244 Ohio VAP Certification (1700) #: CL101 Ohio VAP Certification (1800) #: CL110\* Oklahoma Certification #: 9507\* Oregon Primary Certification #: MN300001 Oregon Secondary Certification #: MN200001\* Pennsylvania Certification #: 68-00563\* Puerto Rico Certification #: MN00064 South Carolina Certification #:74003001 Tennessee Certification #: TN02818 Texas Certification #: T104704192\* Utah Certification #: MN00064\* Vermont Certification #: VT-027053137 Virginia Certification #: 460163\* Washington Certification #: C486\* West Virginia DEP Certification #: 382 West Virginia DW Certification #: 9952 C Wisconsin Certification #: 999407970 Wyoming UST Certification #: via A2LA 2926.01 USDA Permit #: P330-19-00208 \*Please Note: Applicable air certifications are denoted with an asterisk (\*).



### SAMPLE SUMMARY

Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10

10586277

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10586277001	BPSOU-UR01SS19-110221-1	Solid	11/02/21 13:30	11/04/21 10:00
10586277002	BPSOU-UR01SS19-110221-2	Solid	11/02/21 13:25	11/04/21 10:00
10586277003	BPSOU-UR01SS19-110221-3	Solid	11/02/21 13:20	11/04/21 10:00
10586277004	BPSOU-UR01SS18-110221-1	Solid	11/02/21 13:15	11/04/21 10:00
10586277005	BPSOU-UR01SS18-110221-2	Solid	11/02/21 13:10	11/04/21 10:00
10586277006	BPSOU-UR01SS18-110221-3	Solid	11/02/21 13:05	11/04/21 10:00
10586277007	BPSOU-UR01SS16-110221-2	Solid	11/02/21 13:40	11/04/21 10:00
10586277008	BPSOU-UR01SS16-110221-3	Solid	11/02/21 13:35	11/04/21 10:00
10586277009	BPSOU-UR01SS15-110221-1	Solid	11/02/21 13:15	11/04/21 10:00
10586277010	BPSOU-UR01SS15-110221-2	Solid	11/02/21 13:10	11/04/21 10:00
10586277011	BPSOU-UR01SS15-110221-3	Solid	11/02/21 13:05	11/04/21 10:00
10586277012	BPSOU-UR01SS01-110321-2	Solid	11/03/21 10:20	11/04/21 10:00
10586277013	BPSOU-UR01SS01-110321-3	Solid	11/03/21 10:15	11/04/21 10:00
10586277014	BPSOU-UR01SS01-110321-3-FD	Solid	11/03/21 10:10	11/04/21 10:00



# SAMPLE ANALYTE COUNT

Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586277

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10586277001	BPSOU-UR01SS19-110221-1	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
10586277002	BPSOU-UR01SS19-110221-2	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
10586277003	BPSOU-UR01SS19-110221-3	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
10586277004	BPSOU-UR01SS18-110221-1	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
0586277005	BPSOU-UR01SS18-110221-2	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
0586277006	BPSOU-UR01SS18-110221-3	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
0586277007	BPSOU-UR01SS16-110221-2	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
0586277008	BPSOU-UR01SS16-110221-3	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
0586277009	BPSOU-UR01SS15-110221-1	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
0586277010	BPSOU-UR01SS15-110221-2	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
0586277011	BPSOU-UR01SS15-110221-3	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
10586277012	BPSOU-UR01SS01-110321-2	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
10586277013	BPSOU-UR01SS01-110321-3	EPA 6010D	DM	5



### SAMPLE ANALYTE COUNT

Project:BPSOU Unreclaimed SamplingPace Project No.:10586277

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
10586277014	BPSOU-UR01SS01-110321-3-FD	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1

PASI-M = Pace Analytical Services - Minneapolis



### **PROJECT NARRATIVE**

Project: BPSOU Unreclaimed Sampling

#### Pace Project No.: 10586277

Method:EPA 6010DDescription:6010D MET ICPClient:BPAR-PIONEER-MTDate:November 17, 2021

### **General Information:**

14 samples were analyzed for EPA 6010D by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

#### Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Sample Preparation:

The samples were prepared in accordance with EPA 3050B with any exceptions noted below.

#### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### QC Batch: 782084

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10586277001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4164875)
  - Lead
  - Zinc
- MSD (Lab ID: 4164876)
  - Lead
  - Zinc

#### Additional Comments:



### **PROJECT NARRATIVE**

Project: BPSOU Unreclaimed Sampling

### Pace Project No.: 10586277

Method:EPA 7471BDescription:7471B MercuryClient:BPAR-PIONEER-MTDate:November 17, 2021

### General Information:

14 samples were analyzed for EPA 7471B by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

#### Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Sample Preparation:

The samples were prepared in accordance with EPA 7471B with any exceptions noted below.

#### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### QC Batch: 782131

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10586277001

- M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
  - MSD (Lab ID: 4164993)
    - Mercury
- R1: RPD value was outside control limits.
  - MSD (Lab ID: 4164993)
    - Mercury

#### Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586277

Sample: BPSOU-UR01SS19-11022	1- Lab ID:	10586277001	Collected	: 11/02/21	13:30	Received: 11/	04/21 10:00 Ma	atrix: Solid	
Results reported on a "dry weight'	basis and are	adjusted for	percent moi	isture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prepa	aration Met	hod: Ef	PA 3050B			
	Pace Anal	ytical Services	- Minneapoli	s					
Arsenic	5.0	mg/kg	2.0	0.30	2	11/09/21 13:35	11/15/21 13:18	7440-38-2	
Cadmium	0.33	mg/kg	0.29	0.067	2	11/09/21 13:35	11/15/21 13:18	7440-43-9	
Copper	49.9	mg/kg	0.98	0.14	2	11/09/21 13:35	11/15/21 13:18	7440-50-8	
Lead	39.4	mg/kg	0.98	0.20	2	11/09/21 13:35	11/15/21 13:18	7439-92-1	M1
Zinc	114	mg/kg	3.9	0.44	2	11/09/21 13:35	11/15/21 13:18	7440-66-6	M1
7471B Mercury	Analytical	Method: EPA 7	471B Prepa	ration Met	hod: EF	PA 7471B			
-	Pace Anal	ytical Services	- Minneapoli	s					
Mercury	0.051	mg/kg	0.021	0.0092	1	11/10/21 08:31	11/16/21 14:15	7439-97-6	M1,R1
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapoli	s					
Percent Moisture	5.2	%	0.10	0.10	1		11/08/21 09:03		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586277

Sample: BPSOU-UR01SS19-11022 2	1- Lab ID:	10586277002	Collected	d: 11/02/21	13:25	Received: 11/	04/21 10:00 Ma	atrix: Solid	
Results reported on a "dry weight'	basis and are	adjusted for p	percent mo	oisture, san	nple si	ze and any diluti	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	- Minneapo	lis					
Arsenic	5.0	mg/kg	1.0	0.16	1	11/09/21 13:35	11/15/21 12:51	7440-38-2	
Cadmium	0.30	mg/kg	0.15	0.035	1	11/09/21 13:35	11/15/21 12:51	7440-43-9	
Copper	50.2	mg/kg	0.51	0.074	1	11/09/21 13:35	11/15/21 12:51	7440-50-8	
Lead	39.1	mg/kg	1.0	0.21	2	11/09/21 13:35	11/15/21 13:30	7439-92-1	
Zinc	97.2	mg/kg	2.0	0.23	1	11/09/21 13:35	11/15/21 12:51	7440-66-6	
7471B Mercury	Analytical	Method: EPA 74	471B Prep	aration Met	nod: El	PA 7471B			
-	Pace Anal	ytical Services	- Minneapo	lis					
Mercury	0.057	mg/kg	0.019	0.0083	1	11/10/21 08:31	11/16/21 14:20	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapo	lis					
Percent Moisture	5.2	%	0.10	0.10	1		11/08/21 09:03		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586277

Sample: BPSOU-UR01SS19-11022 3	1- Lab ID:	10586277003	Collected	d: 11/02/21	13:20	Received: 11/	04/21 10:00 Ma	atrix: Solid	
Results reported on a "dry weight"	basis and are	adjusted for p	percent mo	oisture, san	nple si	ize and any diluti	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	Minneapo	lis					
Arsenic	4.0	mg/kg	0.97	0.15	1	11/09/21 13:35	11/15/21 12:53	7440-38-2	
Cadmium	0.24	mg/kg	0.15	0.033	1	11/09/21 13:35	11/15/21 12:53	7440-43-9	
Copper	39.9	mg/kg	0.49	0.071	1	11/09/21 13:35	11/15/21 12:53	7440-50-8	
Lead	37.2	mg/kg	0.97	0.20	2	11/09/21 13:35	11/15/21 13:32	7439-92-1	
Zinc	102	mg/kg	1.9	0.22	1	11/09/21 13:35	11/15/21 12:53	7440-66-6	
7471B Mercury	Analytical	Method: EPA 74	471B Prep	aration Met	nod: El	PA 7471B			
-	Pace Anal	ytical Services	Minneapo	lis					
Mercury	0.065	mg/kg	0.018	0.0078	1	11/10/21 08:31	11/16/21 14:21	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	Minneapo	lis					
Percent Moisture	4.1	%	0.10	0.10	1		11/08/21 09:03		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586277

Sample: BPSOU-UR01SS18-11022	1- Lab ID:	10586277004	Collected	: 11/02/21	13:15	Received: 11/	04/21 10:00 Ma	atrix: Solid	
Results reported on a "dry weight"	basis and are	e adjusted for p	percent mo	isture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 60	010D Prepa	aration Met	hod: Ef	PA 3050B			
	Pace Anal	ytical Services	Minneapoli	s					
Arsenic	7.2	mg/kg	2.1	0.32	2	11/09/21 13:35	11/15/21 13:33	7440-38-2	
Cadmium	0.66	mg/kg	0.31	0.071	2	11/09/21 13:35	11/15/21 13:33	7440-43-9	
Copper	54.7	mg/kg	1.0	0.15	2	11/09/21 13:35	11/15/21 13:33	7440-50-8	
Lead	80.7	mg/kg	1.0	0.21	2	11/09/21 13:35	11/15/21 13:33	7439-92-1	
Zinc	200	mg/kg	4.2	0.46	2	11/09/21 13:35	11/15/21 13:33	7440-66-6	
7471B Mercury	Analytical	Method: EPA 74	471B Prepa	ration Met	hod: EF	PA 7471B			
-	Pace Anal	ytical Services ·	Minneapoli	s					
Mercury	0.12	mg/kg	0.021	0.0090	1	11/10/21 08:31	11/16/21 14:23	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services ·	Minneapoli	s					
Percent Moisture	6.5	%	0.10	0.10	1		11/08/21 09:03		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586277

Sample: BPSOU-UR01SS18-11022	1- Lab ID:	10586277005	Collected	d: 11/02/21	13:10	Received: 11/	04/21 10:00 Ma	atrix: Solid	
Results reported on a "dry weight"	basis and are	e adjusted for p	percent mo	oisture, san	nple si	ize and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	Minneapo	lis					
Arsenic	5.1	mg/kg	1.0	0.16	1	11/09/21 13:35	11/15/21 12:56	7440-38-2	
Cadmium	0.21	mg/kg	0.15	0.035	1	11/09/21 13:35	11/15/21 12:56	7440-43-9	
Copper	39.4	mg/kg	0.51	0.075	1	11/09/21 13:35	11/15/21 12:56	7440-50-8	
Lead	26.5	mg/kg	1.0	0.21	2	11/09/21 13:35	11/15/21 13:35	7439-92-1	
Zinc	79.4	mg/kg	2.0	0.23	1	11/09/21 13:35	11/15/21 12:56	7440-66-6	
7471B Mercury	Analytical	Method: EPA 74	471B Prep	aration Met	nod: El	PA 7471B			
-	Pace Anal	ytical Services	Minneapo	lis					
Mercury	0.11	mg/kg	0.017	0.0076	1	11/10/21 08:31	11/16/21 14:25	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	Minneapo	lis					
Percent Moisture	4.3	%	0.10	0.10	1		11/08/21 09:03		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586277

Sample: BPSOU-UR01SS18-11022 3	1- Lab ID:	10586277006	Collected	d: 11/02/21	13:05	Received: 11/	04/21 10:00 Ma	atrix: Solid	
Results reported on a "dry weight"	' basis and are	adjusted for	percent mo	oisture, san	nple si	ize and any diluti	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: E	PA 3050B			
	Pace Anal	ytical Services	- Minneapo	lis					
Arsenic	5.0	mg/kg	1.0	0.15	1	11/09/21 13:35	11/15/21 12:58	7440-38-2	
Cadmium	0.24	mg/kg	0.15	0.034	1	11/09/21 13:35	11/15/21 12:58	7440-43-9	
Copper	39.4	mg/kg	0.51	0.074	1	11/09/21 13:35	11/15/21 12:58	7440-50-8	
Lead	23.8	mg/kg	1.0	0.21	2	11/09/21 13:35	11/15/21 13:37	7439-92-1	
Zinc	76.3	mg/kg	2.0	0.23	1	11/09/21 13:35	11/15/21 12:58	7440-66-6	
7471B Mercury	Analytical	Method: EPA 74	471B Prep	aration Met	hod: El	PA 7471B			
-	Pace Anal	ytical Services	- Minneapo	lis					
Mercury	0.082	mg/kg	0.018	0.0080	1	11/10/21 08:31	11/16/21 14:30	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapo	lis					
Percent Moisture	4.0	%	0.10	0.10	1		11/08/21 09:04		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586277

Sample: BPSOU-UR01SS16-11022	1- Lab ID:	10586277007	Collected	d: 11/02/21	13:40	Received: 11/	04/21 10:00 Ma	atrix: Solid	
Results reported on a "dry weight"	basis and are	e adjusted for <sub>l</sub>	percent mo	oisture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	nod: El	PA 3050B			
	Pace Anal	ytical Services	- Minneapo	lis					
Arsenic	11.8	mg/kg	2.0	0.31	2	11/09/21 13:35	11/15/21 13:38	7440-38-2	
Cadmium	0.55	mg/kg	0.30	0.069	2	11/09/21 13:35	11/15/21 13:38	7440-43-9	
Copper	46.7	mg/kg	1.0	0.15	2	11/09/21 13:35	11/15/21 13:38	7440-50-8	
Lead	43.5	mg/kg	1.0	0.21	2	11/09/21 13:35	11/15/21 13:38	7439-92-1	
Zinc	134	mg/kg	4.1	0.45	2	11/09/21 13:35	11/15/21 13:38	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prep	aration Metl	nod: El	PA 7471B			
-	Pace Anal	ytical Services	- Minneapo	lis					
Mercury	0.11	mg/kg	0.018	0.0080	1	11/10/21 08:31	11/16/21 14:31	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
-	Pace Anal	ytical Services	- Minneapo	lis					
Percent Moisture	4.2	%	0.10	0.10	1		11/08/21 09:04		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586277

Sample: BPSOU-UR01SS16-11022 3	1- Lab ID:	10586277008	Collected	d: 11/02/21	13:35	Received: 11/	04/21 10:00 Ma	atrix: Solid	
Results reported on a "dry weight"	' basis and are	adjusted for	percent mo	oisture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	vtical Services	Minneapo	lis					
Arsenic	6.0	mg/kg	1.9	0.30	2	11/09/21 13:35	11/15/21 13:40	7440-38-2	
Cadmium	0.46	mg/kg	0.29	0.066	2	11/09/21 13:35	11/15/21 13:40	7440-43-9	
Copper	58.9	mg/kg	0.97	0.14	2	11/09/21 13:35	11/15/21 13:40	7440-50-8	
Lead	55.4	mg/kg	0.97	0.20	2	11/09/21 13:35	11/15/21 13:40	7439-92-1	
Zinc	138	mg/kg	3.9	0.43	2	11/09/21 13:35	11/15/21 13:40	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prep	aration Met	nod: El	PA 7471B			
-	Pace Anal	ytical Services	Minneapo	lis					
Mercury	0.21	mg/kg	0.019	0.0084	1	11/10/21 08:31	11/16/21 14:33	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	Minneapo	lis					
Percent Moisture	3.5	%	0.10	0.10	1		11/08/21 09:04		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586277

Sample: BPSOU-UR01SS15-11022	1- Lab ID:	10586277009	Collected	d: 11/02/21	13:15	Received: 11/	04/21 10:00 Ma	atrix: Solid	
Results reported on a "dry weight"	basis and are	adjusted for p	percent mo	oisture, sar	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	Minneapo	lis					
Arsenic	8.1	mg/kg	2.0	0.31	2	11/09/21 13:35	11/15/21 13:42	7440-38-2	
Cadmium	0.53	mg/kg	0.31	0.070	2	11/09/21 13:35	11/15/21 13:42	7440-43-9	
Copper	73.2	mg/kg	1.0	0.15	2	11/09/21 13:35	11/15/21 13:42	7440-50-8	
Lead	75.5	mg/kg	1.0	0.21	2	11/09/21 13:35	11/15/21 13:42	7439-92-1	
Zinc	168	mg/kg	4.1	0.46	2	11/09/21 13:35	11/15/21 13:42	7440-66-6	
7471B Mercury	Analytical	Method: EPA 74	471B Prep	aration Met	nod: El	PA 7471B			
-	Pace Anal	ytical Services	Minneapo	lis					
Mercury	0.61	mg/kg	0.019	0.0082	1	11/10/21 08:31	11/16/21 14:34	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	Minneapo	lis					
Percent Moisture	6.2	%	0.10	0.10	1		11/08/21 09:04		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586277

Sample: BPSOU-UR01SS15-11022 2	1- Lab ID:	10586277010	Collected	d: 11/02/21	13:10	Received: 11/	/04/21 10:00 Ma	atrix: Solid	
Results reported on a "dry weight"	basis and are	e adjusted for <sub>l</sub>	percent mo	oisture, sar	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	- Minneapo	lis					
Arsenic	12.2	mg/kg	2.0	0.31	2	11/09/21 13:35	11/15/21 13:43	7440-38-2	
Cadmium	1.7	mg/kg	0.31	0.070	2	11/09/21 13:35	11/15/21 13:43	7440-43-9	
Copper	71.4	mg/kg	1.0	0.15	2	11/09/21 13:35	11/15/21 13:43	7440-50-8	
Lead	200	mg/kg	1.0	0.21	2	11/09/21 13:35	11/15/21 13:43	7439-92-1	
Zinc	315	mg/kg	4.1	0.46	2	11/09/21 13:35	11/15/21 13:43	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prep	aration Met	hod: El	PA 7471B			
-	Pace Anal	ytical Services	- Minneapo	lis					
Mercury	0.23	mg/kg	0.021	0.0091	1	11/10/21 08:31	11/16/21 14:36	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
-	Pace Anal	ytical Services	- Minneapo	lis					
Percent Moisture	5.0	%	0.10	0.10	1		11/08/21 09:04		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586277

Sample: BPSOU-UR01SS15-11022 3	1- Lab ID:	10586277011	Collected	d: 11/02/21	13:05	Received: 11/	04/21 10:00 Ma	atrix: Solid	
Results reported on a "dry weight"	' basis and are	adjusted for	percent mo	oisture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	- Minneapo	lis					
Arsenic	8.1	mg/kg	2.0	0.31	2	11/09/21 13:35	11/15/21 13:48	7440-38-2	
Cadmium	0.90	mg/kg	0.30	0.069	2	11/09/21 13:35	11/15/21 13:48	7440-43-9	
Copper	82.0	mg/kg	1.0	0.15	2	11/09/21 13:35	11/15/21 13:48	7440-50-8	
Lead	195	mg/kg	1.0	0.21	2	11/09/21 13:35	11/15/21 13:48	7439-92-1	
Zinc	243	mg/kg	4.1	0.45	2	11/09/21 13:35	11/15/21 13:48	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prep	aration Met	nod: El	PA 7471B			
	Pace Anal	ytical Services	- Minneapo	lis					
Mercury	0.15	mg/kg	0.020	0.0085	1	11/10/21 08:31	11/16/21 14:38	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapo	lis					
Percent Moisture	4.2	%	0.10	0.10	1		11/08/21 09:04		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586277

Sample: BPSOU-UR01SS01-11032 2	1- Lab ID:	10586277012	Collected	d: 11/03/21	10:20	Received: 11/	04/21 10:00 Ma	atrix: Solid	
Results reported on a "dry weight'	basis and are	e adjusted for p	percent mo	oisture, san	nple si	ze and any diluti	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	Minneapo	lis					
Arsenic	4.7	mg/kg	1.0	0.16	1	11/09/21 13:35	11/15/21 13:11	7440-38-2	
Cadmium	0.19	mg/kg	0.16	0.036	1	11/09/21 13:35	11/15/21 13:11	7440-43-9	
Copper	40.1	mg/kg	0.52	0.076	1	11/09/21 13:35	11/15/21 13:11	7440-50-8	
Lead	22.7	mg/kg	1.0	0.21	2	11/09/21 13:35	11/15/21 13:50	7439-92-1	
Zinc	70.3	mg/kg	2.1	0.23	1	11/09/21 13:35	11/15/21 13:11	7440-66-6	
7471B Mercury	Analytical	Method: EPA 74	471B Prep	aration Met	nod: El	PA 7471B			
-	Pace Anal	ytical Services	Minneapo	lis					
Mercury	<0.0081	mg/kg	0.019	0.0081	1	11/10/21 08:31	11/16/21 14:39	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
-	Pace Anal	ytical Services	Minneapo	lis					
Percent Moisture	5.0	%	0.10	0.10	1		11/08/21 09:05		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586277

Sample: BPSOU-UR01SS01-11032 3	1- Lab ID:	10586277013	Collected	d: 11/03/21	10:15	Received: 11/	04/21 10:00 Ma	atrix: Solid	
Results reported on a "dry weight"	' basis and are	adjusted for p	percent mo	oisture, san	nple si	ize and any diluti	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: E	PA 3050B			
	Pace Anal	vtical Services	- Minneapo	lis					
Arsenic	3.4	mg/kg	1.0	0.16	1	11/09/21 13:35	11/15/21 13:13	7440-38-2	
Cadmium	0.16	mg/kg	0.15	0.035	1	11/09/21 13:35	11/15/21 13:13	7440-43-9	
Copper	42.1	mg/kg	0.51	0.075	1	11/09/21 13:35	11/15/21 13:13	7440-50-8	
Lead	24.7	mg/kg	1.0	0.21	2	11/09/21 13:35	11/15/21 13:52	7439-92-1	
Zinc	75.5	mg/kg	2.1	0.23	1	11/09/21 13:35	11/15/21 13:13	7440-66-6	
7471B Mercury	Analytical	Method: EPA 74	471B Prepa	aration Met	hod: El	PA 7471B			
-	Pace Anal	vtical Services	- Minneapo	lis					
Mercury	0.0098J	mg/kg	0.018	0.0077	1	11/16/21 12:57	11/16/21 16:51	7439-97-6	
Dry Weight / %M by ASTM D2974		Method: ASTM		lis					
Percent Moisture	3.7	%	0.10	0.10	1		11/08/21 09:05		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586277

Sample: BPSOU-UR01SS01-11032 3-FD	1- Lab ID:	10586277014	Collecte	d: 11/03/21	10:10	Received: 11/	04/21 10:00 Ma	atrix: Solid	
Results reported on a "dry weight"	' basis and are	e adjusted for	percent m	oisture, sar	nple s	ize and any diluti	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: E	PA 3050B			
	Pace Anal	ytical Services	- Minneapo	olis					
Arsenic	3.1	mg/kg	0.97	0.15	1	11/09/21 13:35	11/15/21 13:17	7440-38-2	
Cadmium	0.18	mg/kg	0.15	0.033	1	11/09/21 13:35	11/15/21 13:17	7440-43-9	
Copper	45.4	mg/kg	0.48	0.071	1	11/09/21 13:35	11/15/21 13:17	7440-50-8	
Lead	20.2	mg/kg	0.97	0.20	2	11/09/21 13:35	11/15/21 13:53	7439-92-1	
Zinc	76.9	mg/kg	1.9	0.22	1	11/09/21 13:35	11/15/21 13:17	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prep	aration Met	hod: E	PA 7471B			
-	Pace Anal	ytical Services	- Minneapo	olis					
Mercury	0.018J	mg/kg	0.021	0.0090	1	11/10/21 08:31	11/16/21 14:41	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapo	olis					

0.10

0.10 1

11/08/21 09:05

%

3.6

Percent Moisture

# **REPORT OF LABORATORY ANALYSIS**

N2



Project:	BPSOU Unreclaim	ed Sampling										
Pace Project No.:	10586277											
QC Batch:	782131		Analy	vsis Metho	od:	EPA 7471B						
QC Batch Method:	EPA 7471B		Analy	sis Descr	iption:	7471B Merc	ury Solids					
			Labo	ratory:		Pace Analyt	ical Servic	es - Minnea	apolis			
Associated Lab Sam		001, 10586277002 008, 10586277009	,	,	,		,	,	586277007	,		
METHOD BLANK:	4164990			Matrix: S	olid							
Associated Lab Sam	•	001, 10586277002 008, 10586277009	, 1058627	7010, 105	86277011,		,	,	586277007	',		
Param	ator.	Units	Blan Resi		Reporting Limit	MD		Applyrod	0.	ualifiers		
Palali	leter	Units						Analyzed		anners		
Mercury		mg/kg	<(	0.0074	0.01	17 (	).0074 1	1/16/21 14:	12			
LABORATORY CON	ITROL SAMPLE:	4164991										
			Spike	LC	CS	LCS	% R	ec				
Param	neter	Units	Conc.	Re	sult	% Rec	Lim	its (	Qualifiers			
Mercury		mg/kg	0.4	8	0.47	98	8	80-120				
MATRIX SPIKE & M	ATRIX SPIKE DUF	PLICATE: 41649	92		4164993	3						
			MS	MSD								
Parameter	Units	10586277001 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg											

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



•	SOU Unreclaimed 586277	Sampling										
QC Batch: 78	34057		Analy	/sis Metho	d: I	EPA 7471B						
QC Batch Method: E	PA 7471B			/sis Descri		7471B Mer		ds				
				ratory:	•		•	rices - Minne	apolis			
Associated Lab Samples	s: 10586277013	3		,		,						
METHOD BLANK: 417	4020			Matrix: So	olid							
Associated Lab Samples	s: 10586277013	3										
			Blar	nk	Reporting							
		Units	Res	ult	Limit	MD	L	Analyzed	l Qi	ualifiers		
Paramete	ſ	Offits										
Paramete	r	mg/kg		0.0079	0.01	8 (	0.0079	11/16/21 16	:47			
	OL SAMPLE: 41				S	LCS % Rec	%	11/16/21 16 Rec mits	.47 Qualifiers			
Mercury	OL SAMPLE: 41	mg/kg	Spike	0.0079 LC Res	S	LCS % Rec	%	Rec				
Mercury LABORATORY CONTR Paramete	OL SAMPLE: 41	mg/kg 174021 Units mg/kg	Spike Conc.	0.0079 LC Res	S sult	LCS % Rec 9	% Lii	Rec mits				
Mercury LABORATORY CONTR Paramete Mercury	OL SAMPLE: 41	mg/kg 174021 Units mg/kg	Spike Conc.	0.0079 LC Res	S Sult 0.42	LCS % Rec 9	% Lit 3	Rec mits 80-120				
Mercury LABORATORY CONTR Paramete Mercury MATRIX SPIKE & MATR	OL SAMPLE: 41	mg/kg 174021 Units mg/kg CATE: 4174 0586277013	Spike Conc. 0.4 022 MS Spike	LC LC Res 5 MSD Spike	Sult 0.42 4174023 MS	LCS % Rec 9 MSD	% 3 	Rec mits 80-120 MSD	Qualifiers	_	Max	
Mercury LABORATORY CONTR Paramete Mercury	OL SAMPLE: 41	mg/kg 174021 Units mg/kg CATE: 4174	Spike Conc. 0.4 022 MS		S Sult 0.42 4174023	LCS % Rec 9	% Lit 3	Rec mits 80-120 MSD	Qualifiers	RPD	Max RPD	Qual

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:	BPSOU Unreclaimed Sampling
1 10,000	Bi 666 Officelatified Bamping

Pace Project No.: 1058	0211											
QC Batch: 78	2084		Analy	sis Metho	od: E	EPA 6010D						
QC Batch Method: EF	A 3050B		Analy	/sis Descr	ription: 6	6010D Solid	ds					
			Labo	ratory:	F	Pace Analy	tical Servio	ces - Minnea	apolis			
Associated Lab Samples	1058627700	1, 10586277002	2, 1058627	7003, 105	586277004, <sup>-</sup>	105862770	05, 10586	277006, 10	586277007	,		
	1058627700	08, 10586277009	9, 1058627	7010, 105	586277011, <sup>~</sup>	105862770	12, 10586	277013, 105	586277014			
METHOD BLANK: 4164	1873			Matrix: S	Solid							
Associated Lab Samples		1, 10586277002										
	1058627700	08, 10586277009	-		-	105862770	12, 10586	277013, 105	586277014			
Description		11-26-	Blar		Reporting			A	0			
Parameter		Units	Resu	uit	Limit	MD	L	Analyzed	Qu	alifiers		
Arsenic		mg/kg		<0.14	0.93	3		11/15/21 12:				
Cadmium		mg/kg		<0.032	0.14			11/15/21 12:				
Copper		mg/kg		<0.068	0.4			11/15/21 12:				
Lead		mg/kg	•	<0.096	0.4			11/15/21 12:				
Zinc		mg/kg		<0.21	1.9	9	0.21 1	11/15/21 12:	50			
Zinc		mg/kg		<0.21	1.9	9	0.21	11/13/21 12.	50			
	L SAMPLE: 4	mg/kg 164874	Snike									
	DL SAMPLE: 4		Spike Conc.	L	CS esult	LCS % Rec	0.21 F	Rec	Qualifiers			
LABORATORY CONTRO Parameter	DL SAMPLE: 4	1164874		Lu Re	CS	LCS	% F Lim	Rec				
LABORATORY CONTRO Parameter Arsenic	UL SAMPLE: 4	Units	- <u>Conc.</u> 4	Lu Re	CS esult	LCS % Rec	% F Lim 5	Rec hits (		_		
LABORATORY CONTRO Parameter Arsenic Cadmium	DL SAMPLE: 4	Units mg/kg	Conc. 4	L( 	CS esult 46.7 48.0 47.6	LCS % Rec 9 9 9	% F Lim 5 8 7	Rec hits ( 80-120 80-120 80-120		_		
LABORATORY CONTRO Parameter Arsenic Cadmium Copper Lead	DL SAMPLE: 4	Units Mg/kg Mg/kg Mg/kg Mg/kg Mg/kg	Conc. 4 4 4 4 4	L( Re 9 9 9 9 9 9	CS esult 46.7 48.0 47.6 47.3	LCS % Rec 9 9 9 9 9	% F Lim 5 8 7 7 7	Rec hits ( 80-120 80-120 80-120 80-120 80-120		_		
LABORATORY CONTRO Parameter Arsenic Cadmium Copper	DL SAMPLE: 4	Units mg/kg mg/kg mg/kg	Conc. 4 4 4 4 4	L( Re 9 9 9	CS esult 46.7 48.0 47.6	LCS % Rec 9 9 9	% F Lim 5 8 7 7 7	Rec hits ( 80-120 80-120 80-120		_		
LABORATORY CONTRO Parameter Arsenic Cadmium Copper Lead		Units Units mg/kg mg/kg mg/kg mg/kg mg/kg	Conc. 4 4 4 4 4 4	L( Re 9 9 9 9 9 9	CS esult 46.7 48.0 47.6 47.3	LCS % Rec 9 9 9 9 9	% F Lim 5 8 7 7 7	Rec hits ( 80-120 80-120 80-120 80-120 80-120		_		
LABORATORY CONTRO Parameter Arsenic Cadmium Copper Lead Zinc	X SPIKE DUPLI	Units Units mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	Conc. 4 4 4 4 4 4 375 MS	L0 Re 9 9 9 9 9 9 9 9 9	CS esult 46.7 48.0 47.6 47.3 47.0 4164876	LCS % Rec 9 9 9 9 9	% F  5 8 7 7 6	Rec hits ( 80-120 80-120 80-120 80-120 80-120	Qualifiers	_		
LABORATORY CONTRO Parameter Arsenic Cadmium Copper Lead Zinc MATRIX SPIKE & MATR	X SPIKE DUPLI	Units Units mg/kg mg/kg mg/kg mg/kg mg/kg Mg/kg	Conc. 4 4 4 4 4 4 4 375 MS Spike	L0 9 9 9 9 9 9 MSD Spike	CS esult 46.7 48.0 47.6 47.3 47.0 4164876 MS	LCS % Rec 9 9 9 9 9 9	% F Lim 5 7 7 6 MS	Rec hits ( 80-120 80-120 80-120 80-120 80-120 MSD	Qualifiers % Rec	_	Max	
LABORATORY CONTRO Parameter Arsenic Cadmium Copper Lead Zinc	X SPIKE DUPLI	Units Units mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	Conc. 4 4 4 4 4 4 375 MS	L0 Re 9 9 9 9 9 9 9 9 9	CS esult 46.7 48.0 47.6 47.3 47.0 4164876	LCS % Rec 9 9 9 9 9	% F  5 8 7 7 6	Rec hits ( 80-120 80-120 80-120 80-120 80-120	Qualifiers	RPD		Qual
LABORATORY CONTRO Parameter Arsenic Cadmium Copper Lead Zinc MATRIX SPIKE & MATRI Parameter	X SPIKE DUPLI	Units Units mg/kg mg/kg mg/kg mg/kg mg/kg Mg/kg	Conc. 4 4 4 4 4 4 4 375 MS Spike	L0 9 9 9 9 9 9 MSD Spike	CS esult 46.7 48.0 47.6 47.3 47.0 4164876 MS Result	LCS % Rec 9 9 9 9 9 9	% F Lim 5 7 7 6 MS	Rec hits ( 80-120 80-120 80-120 80-120 80-120 MSD % Rec	Qualifiers % Rec Limits	 RPD3	RPD 20	Qual
LABORATORY CONTRO Parameter Arsenic Cadmium Copper Lead Zinc MATRIX SPIKE & MATR Parameter Arsenic	X SPIKE DUPLI	Units mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg MCATE: 41648 10586277001 <u>Result</u> 5.0 0.33	Conc. 4 4 4 4 4 375 MS Spike Conc. 49.8 49.8	L0 Re 9 9 9 9 9 9 9 9 9 9 9 9 9	CS esult 46.7 48.0 47.6 47.3 47.0 4164876 MS Result 2 48.7 44.8	LCS % Rec 9 9 9 9 9 9 9	% F Lim 5 7 7 6 % Rec 88 89	Rec hits ( 80-120 80-120 80-120 80-120 80-120 80-120 MSD % Rec 84 84 86	Qualifiers % Rec Limits 75-125		RPD 20 20	Qual
LABORATORY CONTRO Parameter Arsenic Cadmium Copper Lead Zinc MATRIX SPIKE & MATRI Parameter Arsenic Cadmium Copper	X SPIKE DUPLI Units mg/kg mg/kg mg/kg	Units mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg 10586277001 Result - 5.0 0.33 49.9	Conc. 4 4 4 4 4 375 MS Spike Conc. 49.8 49.8 49.8	L0 Re 9 9 9 9 9 9 9 9 9 9 9 9 9	CS esult 46.7 48.0 47.6 47.3 47.0 4164876 MS Result 2 48.7 2 44.8 2 100	LCS % Rec 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	% F Lim 5 8 7 7 6 % Rec 88 89 101	Rec hits ( 80-120 80-120 80-120 80-120 80-120 80-120 MSD % Rec 84 86 90	Qualifiers % Rec Limits 75-125 75-125 75-125	3 3 5	RPD 20 20 20	
LABORATORY CONTRO Parameter Arsenic Cadmium Copper Lead Zinc MATRIX SPIKE & MATRI	X SPIKE DUPLI	Units mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg MCATE: 41648 10586277001 <u>Result</u> 5.0 0.33	Conc. 4 4 4 4 4 375 MS Spike Conc. 49.8 49.8	L0 Re 9 9 9 9 9 9 9 9 9 9 9 9 9	CS esult 46.7 48.0 47.6 47.3 47.0 4164876 MS Result 2 48.7 2 44.8 2 100 2 76.1	LCS % Rec 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	% F Lim 5 7 7 6 % Rec 88 89	Rec hits ( 80-120 80-120 80-120 80-120 80-120 MSD % Rec 80-120 80-10	Qualifiers % Rec Limits 75-125 75-125 75-125 75-125 75-125	3	RPD 20 20 20 20 20	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

## **REPORT OF LABORATORY ANALYSIS**

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Project:	BPSOU Unreclaim	ed Sampling						
Pace Project No.:	10586277							
QC Batch:	782118		Analysis Meth	od: As	STM D2974			
QC Batch Method:	ASTM D2974		Analysis Desc	ription: Di	ry Weight / %M by	ASTM D2	974	
			Laboratory:	Pa	ace Analytical Ser	vices - Min	neapolis	
Associated Lab Sar		,	02, 10586277003, 10 09, 10586277010, 10	,	,	,	,	
SAMPLE DUPLICA	TE: 4164950							
			10586277001	Dup		Max		
Parar	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Percent Moisture		%	5.2	5.9	12		30 N2	
SAMPLE DUPLICA	TE: 4164951							
			10586277011	Dup		Max		
Parar	neter	Units	Result	Result	RPD	RPD	Qualifiers	
		%	4.2					

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



## QUALIFIERS

#### Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586277

#### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD** - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### ANALYTE QUALIFIERS

- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
- R1 RPD value was outside control limits.



# QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	BPSOU Unreclaimed Sampling
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Pace Project No.: 10586277

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10586277001	 BPSOU-UR01SS19-110221-1	EPA 3050B	782084	EPA 6010D	782952
10586277002	BPSOU-UR01SS19-110221-2	EPA 3050B	782084	EPA 6010D	782952
10586277003	BPSOU-UR01SS19-110221-3	EPA 3050B	782084	EPA 6010D	782952
10586277004	BPSOU-UR01SS18-110221-1	EPA 3050B	782084	EPA 6010D	782952
10586277005	BPSOU-UR01SS18-110221-2	EPA 3050B	782084	EPA 6010D	782952
10586277006	BPSOU-UR01SS18-110221-3	EPA 3050B	782084	EPA 6010D	782952
10586277007	BPSOU-UR01SS16-110221-2	EPA 3050B	782084	EPA 6010D	782952
10586277008	BPSOU-UR01SS16-110221-3	EPA 3050B	782084	EPA 6010D	782952
10586277009	BPSOU-UR01SS15-110221-1	EPA 3050B	782084	EPA 6010D	782952
10586277010	BPSOU-UR01SS15-110221-2	EPA 3050B	782084	EPA 6010D	782952
10586277011	BPSOU-UR01SS15-110221-3	EPA 3050B	782084	EPA 6010D	782952
10586277012	BPSOU-UR01SS01-110321-2	EPA 3050B	782084	EPA 6010D	782952
10586277013	BPSOU-UR01SS01-110321-3	EPA 3050B	782084	EPA 6010D	782952
10586277014	BPSOU-UR01SS01-110321-3-FD	EPA 3050B	782084	EPA 6010D	782952
10586277001	BPSOU-UR01SS19-110221-1	EPA 7471B	782131	EPA 7471B	783167
10586277002	BPSOU-UR01SS19-110221-2	EPA 7471B	782131	EPA 7471B	783167
10586277003	BPSOU-UR01SS19-110221-3	EPA 7471B	782131	EPA 7471B	783167
10586277004	BPSOU-UR01SS18-110221-1	EPA 7471B	782131	EPA 7471B	783167
10586277005	BPSOU-UR01SS18-110221-2	EPA 7471B	782131	EPA 7471B	783167
10586277006	BPSOU-UR01SS18-110221-3	EPA 7471B	782131	EPA 7471B	783167
10586277007	BPSOU-UR01SS16-110221-2	EPA 7471B	782131	EPA 7471B	783167
10586277008	BPSOU-UR01SS16-110221-3	EPA 7471B	782131	EPA 7471B	783167
10586277009	BPSOU-UR01SS15-110221-1	EPA 7471B	782131	EPA 7471B	783167
10586277010	BPSOU-UR01SS15-110221-2	EPA 7471B	782131	EPA 7471B	783167
10586277011	BPSOU-UR01SS15-110221-3	EPA 7471B	782131	EPA 7471B	783167
10586277012	BPSOU-UR01SS01-110321-2	EPA 7471B	782131	EPA 7471B	783167
10586277013	BPSOU-UR01SS01-110321-3	EPA 7471B	784057	EPA 7471B	784116
10586277014	BPSOU-UR01SS01-110321-3-FD	EPA 7471B	782131	EPA 7471B	783167
10586277001	BPSOU-UR01SS19-110221-1	ASTM D2974	782118		
10586277002	BPSOU-UR01SS19-110221-2	ASTM D2974	782118		
10586277003	BPSOU-UR01SS19-110221-3	ASTM D2974	782118		
10586277004	BPSOU-UR01SS18-110221-1	ASTM D2974	782118		
10586277005	BPSOU-UR01SS18-110221-2	ASTM D2974	782118		
10586277006	BPSOU-UR01SS18-110221-3	ASTM D2974	782118		
10586277007	BPSOU-UR01SS16-110221-2	ASTM D2974	782118		
10586277008	BPSOU-UR01SS16-110221-3	ASTM D2974	782118		
10586277009	BPSOU-UR01SS15-110221-1	ASTM D2974	782118		
10586277010	BPSOU-UR01SS15-110221-2	ASTM D2974	782118		
10586277011	BPSOU-UR01SS15-110221-3	ASTM D2974	782118		
10586277012	BPSOU-UR01SS01-110321-2	ASTM D2974	782118		
10586277013	BPSOU-UR01SS01-110321-3	ASTM D2974	782118		
10586277014	BPSOU-UR01SS01-110321-3-FD	ASTM D2974	782118		

Laboratory M	Soil, Sedimer	BP Site Node Path:	BP/RM Facility No:
			and a state of the

Laboratory Management Program (LaMP) Chain of Custody Record

soil, Sediment and Groundwater Samples

Page \_1\_ of \_2\_ T Yes 14 day No

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Req Due Date	Lab Work Or

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BPSOU-URDISS19-110221-1         13:30         in         c         1         soil         x </td <td>Fuil Package Level 2 WO#: 10586277 10586277 10586277</td>	Fuil Package Level 2 WO#: 10586277 10586277 10586277				
BPSOU-URDISS19-110221-2       13:25       in       ic       1       soil       ic       i       ic       i       ic       i       ic	col				
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Lab Address: 1700 Elm Stre	t SE, Minneapolis, MN 55414	City, State, ZIP Code:	Code:							Con	Consultant/Contractor Project No:	r Project No:	BPSOU U	BPSOU Unreclaimed Sampling	BL
- C		Lead Regulatory Agency:	Agency:							Add	Address:		1101	1101 S. Montana St.	
:e:		California Global ID No .:	I ID No.:							Cor	Consultant/Contractor PM:	r PM:	Scott Sampson	ipson	
A		Enfos Proposal No:	No:							Phone:		406-697-0946 Email:		ssampson@pioneer-technical.com	chnical.co
Lab Bottle Order No:		Accounting Mode:	e: Provision		OOC-BU		8	OOC-RM		Sen	Send/Submit EDD to:		Scott Sampson	uosdi	
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	BPSOU-UR01SS15-110221-2		13:10	<u>,</u>	c 1	soil		×	×	-			010		
	BPSOU-UR01SS15-110221-3		13:05	. <u>e</u>	c 1	soil		×	×			-	00		
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-	BPSOU-UR01SS01-110321-3-FD		10:10	. <u>e</u>	- -	soil	-	×	×				DIH		
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Proprietary and Confidential Property of BP and its Affiliates

	Pace Analytical	Sample	Condition U	pent Nam pon Rece ment No.	eipt (SC	CUR) - ESI		Pa	evised: 12Aug2( <b>ge 1 of 1</b>	
	1	E	NV-FRM-M			1			lytical Services - n <b>neapolis</b>	
Sample Co Upon Recei Tech Sp	ipt – ESI Decs	WOMMAL SIZ	hVILA (	Proje	ect #:				86277	
Courier:	Fed Ex	UPS USPS	Clie	ent ee Exception	15 🗌		ima IT: BP-I		le Date: 11/ R	17/21
Tracking N	lumber: <u>4778993</u>	46440	EN	IV-FRM-MIN	4-0142					
Custody Se	eal on Cooler/Box Present?	Yes 🗌 No	Seal	s Intact?	<b>∑</b> Ye	s 🗌 No	Biolo	gical Tis	sue Frozen? 🗌 Y	es 🗌 No 🕅 N/A
Packing Ma	aterial: 🔤 Bubble Wrap	Bubble Bags	None	Other	:			Те	mp Blank? 🛛 💭	Yes 🗌 No
Thermomet	D≰14(0254) ∐ T5(04	489)	Type of Ice		Vet	Blue	None	Dŋ	Melted	
	11:112	ooler Temp Read w/		12			⁰C ⁰C		e Corrected no temp blank °C	See Exceptions ENV-FRM-MIN4-0142
	ated Soil: ( 🗌 N/A, water sa	and the second se	the second s		Date/I	nitials of P	erson Exa		/1	MID.12
Did samples o	originate in a quarantine zone C, NM, NY, OK, OR, SC, TN, TX	within the United Sta	tes: AL, AR, C/	A, FL, GA,	Did sa Hawa	amples origi aii and Puert	inate from a to Rico)?	foreign s	ource (international Yes No	ly, including
Chaine ( Chain								COMM	IENTS:	
	ody Present and Filled Out? ody Relinguished?		Yes No		1.					
	e and/or Signature on COC?	10.55	Yes No Yes No	□n/A	2.					
	ed within Hold Time?		Yes No		3. 4.					
Short Hold Tin	ne Analysis (<72 hr)?		Yes 🖾 No		5.	Fecal Colifor Turbidity	m 🗌 HPC 🗌 Nitrate 🗌 N	]Total Coli itrite 🔲 O	form/E coli 🗌 BOD/c rthophos 🔲	BOD 🗌 Hex Chrome
- company of the second second second	ound Time Requested?		Yes No		6.					
Sufficient Samp	Provided for MS/MSD (if more t		Yes No P	HL104-4	7.					
Correct Contai			Yes INO		8.					
-Pace Conta	iners Used?		Yes No							
Containers Inta			Yes 🗌 No		9.					
	olume Received for Dissolved		Yes 🗌 No	SN/A	10. Is	sediment	visible in th	e dissolv	ed container? 🗌 Ye	es 🗌 No
	mation available to reconcile the er Soil 🗌 Oil 🗌 Other	samples to the COC ``	Yes 🗌 No		11. lf n	o, write ID/ I	Date/Time o	n Contain	er Below:	See Exception
All containers r checked?	needing acid/base preservatio	on have been	Yes 🗌 No		12. San	nple #				
All containers r	needing preservation are four	nd to be in				NaOH	Пн	NO <sub>2</sub>	H <sub>2</sub> SO <sub>4</sub>	Zinc Acetate
compliance wit	th EPA recommendation? <2pH, NaOH >9 Sulfide, NaOH		Yes 🗌 No	A/N/A				1103		
DRO/8015 (wat	A, Coliform, TOC/DOC Oil and ter) and Dioxin/PFAS *If addin	g preservative to			Chlorin	e? [	Yes No	pH Pap	er Lot#	See Exception
	ust be added to associated field				Res. Chl	orine	0-6 Roll		0-6 Strip	0-14 Strip
	'OA Vials (greater than 6mm)			N/A	13.					See Exception
3 Trip Blanks Pr	resent?				14.					
Trip Blank Custo	ody Seals Present?	ים	′es 🗌 No	N/A	Pa	ce Trip Blar	nk Lot # (if <sub>l</sub>	purchase	d):	
20 mins	nust be maintained at <6°C during k		CLIENT NO		N/RESC	DLUTION			Data Required?	Yes No
Opened Time: 12		rrected Temp:( - 4	Person Con					Date	/Time:	
Time: 12-21	put in cooler	rrected Temp: 1. 4	Comments,	Resolutio	n:					
Project Man	ager Review:	10-11	w				Date		1/07/2021	
	there is a discrepancy affecting reservative, out of temp, inclure	Nocer Carolina complia est containers)	ance samples, a	a copy of th	his form	will be sent	to the Nort	h Carolina	DEHNR Certificatio	on Office ( i.e out o

Labeled by:	A	TR	1
Lapeled by:	1-+	11	١.

Page 30 of 30



November 17, 2021

Scott Sampson Pioneer Technical Services 1101 S. Montana Street Butte, MT 59701

RE: Project: BPSOU Unreclaimed Sampling Pace Project No.: 10586396

Dear Scott Sampson:

Enclosed are the analytical results for sample(s) received by the laboratory on November 04, 2021. The results relate only to the samples included in this report. Results contained within this report conform to the most current version of the TNI standards, BP LaMP Technical Requirements Revision 12.1, and any applicable Quality Assurance Project Plan (QAPP), or Work Plan unless otherwise narrated in the body of this report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network: • Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Indera

Jennifer Anderson jennifer.anderson@pacelabs.com (612)607-6436 Project Manager

Enclosures





Pace Analytical Services, LLC 1700 Elm Street Minneapolis, MN 55414 (612)607-1700

## CERTIFICATIONS

Project: BPSOU Unreclaimed Sampling Pace Project No.: 10586396

#### Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414 A2LA Certification #: 2926.01\* 1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab Alabama Certification #: 40770 Alaska Contaminated Sites Certification #: 17-009\* Alaska DW Certification #: MN00064 Arizona Certification #: AZ0014\* Arkansas DW Certification #: MN00064 Arkansas WW Certification #: 88-0680 California Certification #: 2929 Colorado Certification #: MN00064 Connecticut Certification #: PH-0256 EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137 Florida Certification #: E87605\* Georgia Certification #: 959 Hawaii Certification #: MN00064 Idaho Certification #: MN00064 Illinois Certification #: 200011 Indiana Certification #: C-MN-01 Iowa Certification #: 368 Kansas Certification #: E-10167 Kentucky DW Certification #: 90062 Kentucky WW Certification #: 90062 Louisiana DEQ Certification #: AI-03086\* Louisiana DW Certification #: MN00064 Maine Certification #: MN00064\* Maryland Certification #: 322 Michigan Certification #: 9909 Minnesota Certification #: 027-053-137\* Minnesota Dept of Ag Approval: via MN 027-053-137 Minnesota Petrofund Registration #: 1240\* Mississippi Certification #: MN00064

Missouri Certification #: 10100 Montana Certification #: CERT0092 Nebraska Certification #: NE-OS-18-06 Nevada Certification #: MN00064 New Hampshire Certification #: 2081\* New Jersey Certification #: MN002 New York Certification #: 11647\* North Carolina DW Certification #: 27700 North Carolina WW Certification #: 530 North Dakota Certification #: R-036 Ohio DW Certification #: 41244 Ohio VAP Certification (1700) #: CL101 Ohio VAP Certification (1800) #: CL110\* Oklahoma Certification #: 9507\* Oregon Primary Certification #: MN300001 Oregon Secondary Certification #: MN200001\* Pennsylvania Certification #: 68-00563\* Puerto Rico Certification #: MN00064 South Carolina Certification #:74003001 Tennessee Certification #: TN02818 Texas Certification #: T104704192\* Utah Certification #: MN00064\* Vermont Certification #: VT-027053137 Virginia Certification #: 460163\* Washington Certification #: C486\* West Virginia DEP Certification #: 382 West Virginia DW Certification #: 9952 C Wisconsin Certification #: 999407970 Wyoming UST Certification #: via A2LA 2926.01 USDA Permit #: P330-19-00208 \*Please Note: Applicable air certifications are denoted with an asterisk (\*).



# SAMPLE SUMMARY

Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10

10586396

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10586396001	BPSOU-UR01SS13-110221-1	Solid	11/02/21 15:00	11/04/21 08:50
10586396002	BPSOU-UR01SS13-110221-2	Solid	11/02/21 14:55	11/04/21 08:50
10586396003	BPSOU-UR01SS13-110221-3	Solid	11/02/21 14:50	11/04/21 08:50
10586396004	BPSOU-UR01SS12-110221-2	Solid	11/02/21 15:20	11/04/21 08:50
10586396005	BPSOU-UR01SS11-110221-2	Solid	11/02/21 15:20	11/04/21 08:50
10586396006	BPSOU-UR01SS11-110221-3	Solid	11/02/21 15:15	11/04/21 08:50
10586396007	BPSOU-UR01SS10-110221-2	Solid	11/02/21 15:00	11/04/21 08:50
10586396008	BPSOU-UR01SS10-110221-3	Solid	11/02/21 14:55	11/04/21 08:50
10586396009	BPSOU-UR01SS08-110221-1	Solid	11/02/21 14:35	11/04/21 08:50
10586396010	BPSOU-UR01SS08-110221-2	Solid	11/02/21 14:30	11/04/21 08:50
10586396011	BPSOU-UR01SS08-110221-3	Solid	11/02/21 14:25	11/04/21 08:50
10586396012	BPSOU-UR01SS02-110321-2	Solid	11/03/21 10:25	11/04/21 08:50
10586396013	BPSOU-UR01SS02-110321-2-FD	Solid	11/03/21 10:20	11/04/21 08:50



# SAMPLE ANALYTE COUNT

Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586396

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10586396001	BPSOU-UR01SS13-110221-1	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
10586396002	BPSOU-UR01SS13-110221-2	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
10586396003	BPSOU-UR01SS13-110221-3	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
10586396004	BPSOU-UR01SS12-110221-2	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
10586396005	BPSOU-UR01SS11-110221-2	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
10586396006	BPSOU-UR01SS11-110221-3	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
0586396007	BPSOU-UR01SS10-110221-2	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
0586396008	BPSOU-UR01SS10-110221-3	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
10586396009	BPSOU-UR01SS08-110221-1	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
10586396010	BPSOU-UR01SS08-110221-2	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
10586396011	BPSOU-UR01SS08-110221-3	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
10586396012	BPSOU-UR01SS02-110321-2	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JL5	1
10586396013	BPSOU-UR01SS02-110321-2-FD	EPA 6010D	DM	5



# SAMPLE ANALYTE COUNT

Project:	BPSOU Unreclaimed Sampling
Pace Project No.:	10586396

Sample ID	Method	Analysts	Analytes Reported
	EPA 7471B	LMW	1
	ASTM D2974	JL5	1
	Sample ID	EPA 7471B	EPA 7471B LMW

PASI-M = Pace Analytical Services - Minneapolis



### **PROJECT NARRATIVE**

Project: BPSOU Unreclaimed Sampling

#### Pace Project No.: 10586396

Method:EPA 6010DDescription:6010D MET ICPClient:BPAR-PIONEER-MTDate:November 17, 2021

#### **General Information:**

13 samples were analyzed for EPA 6010D by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

#### Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Sample Preparation:

The samples were prepared in accordance with EPA 3050B with any exceptions noted below.

#### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

#### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### Additional Comments:



## **PROJECT NARRATIVE**

Project: BPSOU Unreclaimed Sampling

#### Pace Project No.: 10586396

Method:EPA 7471BDescription:7471B MercuryClient:BPAR-PIONEER-MTDate:November 17, 2021

#### **General Information:**

13 samples were analyzed for EPA 7471B by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

#### Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Sample Preparation:

The samples were prepared in accordance with EPA 7471B with any exceptions noted below.

#### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

#### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### QC Batch: 782132

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10586396001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 4164997)
  - Mercury

#### Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586396

Sample: BPSOU-UR01SS13-11022	1- Lab ID:	10586396001	Collected	d: 11/02/21	15:00	Received: 11/	04/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight"	' basis and are	e adjusted for	percent mo	oisture, san	nple si	ze and any diluti	ons.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prepa	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	- Minneapol	lis					
Arsenic	9.4	mg/kg	2.0	0.31	2	11/09/21 10:03	11/15/21 14:00	7440-38-2	
Cadmium	0.30	mg/kg	0.30	0.069	2	11/09/21 10:03	11/15/21 14:00	7440-43-9	
Copper	59.2	mg/kg	1.0	0.15	2	11/09/21 10:03	11/15/21 14:00	7440-50-8	
Lead	25.5	mg/kg	1.0	0.21	2	11/09/21 10:03	11/15/21 14:00	7439-92-1	
Zinc	113	mg/kg	4.0	0.45	2	11/09/21 10:03	11/15/21 14:00	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prepa	aration Metl	hod: El	PA 7471B			
	Pace Anal	ytical Services	- Minneapol	lis					
Mercury	0.032	mg/kg	0.022	0.0094	1	11/09/21 10:19	11/16/21 13:39	7439-97-6	M1
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapol	lis					
Percent Moisture	7.4	%	0.10	0.10	1		11/08/21 11:40		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586396

Sample: BPSOU-UR01SS13-11022 2	1- Lab ID:	10586396002	Collected	d: 11/02/21	14:55	Received: 11/	04/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight'	' basis and are	adjusted for p	percent mo	oisture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	Minneapo	lis					
Arsenic	4.9	mg/kg	1.0	0.16	1	11/09/21 10:03	11/15/21 14:35	7440-38-2	
Cadmium	0.14J	mg/kg	0.16	0.035	1	11/09/21 10:03	11/15/21 14:35	7440-43-9	
Copper	48.8	mg/kg	0.52	0.076	1	11/09/21 10:03	11/15/21 14:35	7440-50-8	
Lead	12.1	mg/kg	1.0	0.21	2	11/09/21 10:03	11/15/21 14:12	7439-92-1	
Zinc	78.3	mg/kg	2.1	0.23	1	11/09/21 10:03	11/15/21 14:35	7440-66-6	
7471B Mercury	Analytical	Method: EPA 74	471B Prepa	aration Met	nod: El	PA 7471B			
-	Pace Anal	ytical Services	Minneapo	lis					
Mercury	0.010J	mg/kg	0.020	0.0087	1	11/09/21 10:19	11/16/21 13:44	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	Minneapo	lis					
Percent Moisture	6.2	%	0.10	0.10	1		11/08/21 11:40		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586396

Sample: BPSOU-UR01SS13-11022 3	1- Lab ID:	10586396003	Collected	d: 11/02/21	14:50	Received: 11/	04/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight"	basis and are	adjusted for	percent mo	oisture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	Minneapo	lis					
Arsenic	2.7	mg/kg	1.0	0.16	1	11/09/21 10:03	11/15/21 14:38	7440-38-2	
Cadmium	0.24	mg/kg	0.15	0.035	1	11/09/21 10:03	11/15/21 14:38	7440-43-9	
Copper	45.9	mg/kg	0.51	0.074	1	11/09/21 10:03	11/15/21 14:38	7440-50-8	
Lead	7.8	mg/kg	1.0	0.21	2	11/09/21 10:03	11/15/21 14:13	7439-92-1	
Zinc	79.3	mg/kg	2.0	0.23	1	11/09/21 10:03	11/15/21 14:38	7440-66-6	
7471B Mercury	Analytical	Method: EPA 74	471B Prep	aration Met	nod: El	PA 7471B			
-	Pace Anal	ytical Services	Minneapo	lis					
Mercury	0.012J	mg/kg	0.018	0.0079	1	11/09/21 10:19	11/16/21 13:46	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	Minneapo	lis					
Percent Moisture	6.3	%	0.10	0.10	1		11/08/21 11:40		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586396

Sample: BPSOU-UR01SS12-11022 2	1- Lab ID:	10586396004	Collected	d: 11/02/21	15:20	Received: 11/	04/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight'	' basis and are	e adjusted for <sub>l</sub>	percent mo	oisture, san	nple si	ze and any diluti	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	- Minneapo	lis					
Arsenic	18.0	mg/kg	1.2	0.18	1	11/09/21 10:03	11/15/21 14:40	7440-38-2	
Cadmium	0.30	mg/kg	0.17	0.039	1	11/09/21 10:03	11/15/21 14:40	7440-43-9	
Copper	35.0	mg/kg	0.58	0.084	1	11/09/21 10:03	11/15/21 14:40	7440-50-8	
Lead	20.6	mg/kg	0.58	0.12	1	11/09/21 10:03	11/15/21 14:40	7439-92-1	
Zinc	144	mg/kg	2.3	0.26	1	11/09/21 10:03	11/15/21 14:40	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prep	aration Metl	nod: El	PA 7471B			
-	Pace Anal	ytical Services	- Minneapo	lis					
Mercury	0.014J	mg/kg	0.025	0.011	1	11/09/21 10:19	11/16/21 13:47	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapo	lis					
Percent Moisture	19.8	%	0.10	0.10	1		11/08/21 11:41		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586396

Sample: BPSOU-UR01SS11-11022 2	1- Lab ID:	10586396005	Collected	d: 11/02/21	15:20	Received: 11/	04/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight'	' basis and are	adjusted for	percent mo	oisture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	vtical Services	Minneapo	lis					
Arsenic	4.7	mg/kg	1.0	0.15	1	11/09/21 10:03	11/15/21 14:42	7440-38-2	
Cadmium	0.26	mg/kg	0.15	0.034	1	11/09/21 10:03	11/15/21 14:42	7440-43-9	
Copper	44.6	mg/kg	0.50	0.073	1	11/09/21 10:03	11/15/21 14:42	7440-50-8	
Lead	26.7	mg/kg	1.0	0.21	2	11/09/21 10:03	11/15/21 14:17	7439-92-1	
Zinc	83.1	mg/kg	2.0	0.22	1	11/09/21 10:03	11/15/21 14:42	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prep	aration Met	nod: El	PA 7471B			
-	Pace Anal	ytical Services	Minneapo	lis					
Mercury	0.020	mg/kg	0.018	0.0079	1	11/09/21 10:19	11/16/21 13:49	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	Minneapo	lis					
Percent Moisture	3.5	%	0.10	0.10	1		11/08/21 11:41		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586396

Sample: BPSOU-UR01SS11-11022 3	1- Lab ID:	10586396006	Collected	d: 11/02/21	15:15	Received: 11/	04/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight"	basis and are	adjusted for	percent mo	oisture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	Minneapo	lis					
Arsenic	7.3	mg/kg	2.0	0.30	2	11/09/21 10:03	11/15/21 14:18	7440-38-2	
Cadmium	0.58	mg/kg	0.30	0.068	2	11/09/21 10:03	11/15/21 14:18	7440-43-9	
Copper	61.8	mg/kg	0.99	0.15	2	11/09/21 10:03	11/15/21 14:18	7440-50-8	
Lead	88.7	mg/kg	0.99	0.20	2	11/09/21 10:03	11/15/21 14:18	7439-92-1	
Zinc	167	mg/kg	4.0	0.44	2	11/09/21 10:03	11/15/21 14:18	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prepa	aration Met	hod: El	PA 7471B			
	Pace Anal	ytical Services	Minneapo	lis					
Mercury	0.097	mg/kg	0.017	0.0075	1	11/09/21 10:19	11/16/21 13:54	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	Minneapo	lis					
Percent Moisture	3.3	%	0.10	0.10	1		11/08/21 11:41		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586396

Sample: BPSOU-UR01SS10-11022 2	1- Lab ID:	10586396007	Collected	d: 11/02/21	15:00	Received: 11/	04/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight"	basis and are	e adjusted for	percent mo	oisture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	- Minneapo	lis					
Arsenic	4.9	mg/kg	2.0	0.31	2	11/09/21 10:03	11/15/21 14:20	7440-38-2	
Cadmium	0.33	mg/kg	0.30	0.068	2	11/09/21 10:03	11/15/21 14:20	7440-43-9	
Copper	47.4	mg/kg	1.0	0.15	2	11/09/21 10:03	11/15/21 14:20	7440-50-8	
Lead	15.0	mg/kg	1.0	0.21	2	11/09/21 10:03	11/15/21 14:20	7439-92-1	
Zinc	78.5	mg/kg	4.0	0.45	2	11/09/21 10:03	11/15/21 14:20	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prep	aration Met	nod: El	PA 7471B			
-	Pace Anal	ytical Services	- Minneapo	lis					
Mercury	0.23	mg/kg	0.017	0.0075	1	11/09/21 10:19	11/16/21 13:55	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapo	lis					
Percent Moisture	3.8	%	0.10	0.10	1		11/08/21 11:41		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586396

Sample: BPSOU-UR01SS10-11022	1- Lab ID:	10586396008	Collected	d: 11/02/21	14:55	Received: 11/	04/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight"	basis and are	adjusted for	percent mo	oisture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	vtical Services	- Minneapo	lis					
Arsenic	4.3	mg/kg	2.4	0.36	2	11/09/21 10:03	11/15/21 14:22	7440-38-2	
Cadmium	0.43	mg/kg	0.35	0.080	2	11/09/21 10:03	11/15/21 14:22	7440-43-9	
Copper	64.8	mg/kg	1.2	0.17	2	11/09/21 10:03	11/15/21 14:22	7440-50-8	
Lead	17.7	mg/kg	1.2	0.24	2	11/09/21 10:03	11/15/21 14:22	7439-92-1	
Zinc	110	mg/kg	4.7	0.53	2	11/09/21 10:03	11/15/21 14:22	7440-66-6	
7471B Mercury	Analytical	Method: EPA 74	471B Prep	aration Met	nod: El	PA 7471B			
-	Pace Anal	vtical Services	- Minneapo	lis					
Mercury	0.55	mg/kg	0.022	0.0097	1	11/09/21 10:19	11/16/21 13:57	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	vtical Services	- Minneapo	lis					
Percent Moisture	16.1	%	0.10	0.10	1		11/08/21 11:41		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586396

Sample: BPSOU-UR01SS08-11022 1	1- Lab ID:	10586396009	Collected	: 11/02/21	14:35	Received: 11/	04/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight"	basis and are	e adjusted for p	percent mo	isture, san	nple si	ze and any diluti	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prepa	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	- Minneapoli	is					
Arsenic	3.5	mg/kg	1.1	0.17	1	11/09/21 10:03	11/15/21 14:43	7440-38-2	
Cadmium	0.12J	mg/kg	0.16	0.037	1	11/09/21 10:03	11/15/21 14:43	7440-43-9	
Copper	41.7	mg/kg	0.54	0.079	1	11/09/21 10:03	11/15/21 14:43	7440-50-8	
Lead	18.9	mg/kg	1.1	0.22	2	11/09/21 10:03	11/15/21 14:23	7439-92-1	
Zinc	58.9	mg/kg	2.2	0.24	1	11/09/21 10:03	11/15/21 14:43	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prepa	aration Met	hod: EF	PA 7471B			
-	Pace Anal	ytical Services	- Minneapol	is					
Mercury	0.019	mg/kg	0.019	0.0085	1	11/09/21 10:19	11/16/21 13:59	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapol	is					
Percent Moisture	12.0	%	0.10	0.10	1		11/08/21 11:42		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586396

Sample: BPSOU-UR01SS08-11022 2	1- Lab ID:	10586396010	Collected	d: 11/02/21	14:30	Received: 11/	04/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight'	' basis and are	e adjusted for	percent mo	oisture, san	nple si	ize and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	- Minneapo	lis					
Arsenic	4.2	mg/kg	1.0	0.16	1	11/09/21 10:03	11/15/21 14:45	7440-38-2	
Cadmium	0.14J	mg/kg	0.15	0.035	1	11/09/21 10:03	11/15/21 14:45	7440-43-9	
Copper	32.6	mg/kg	0.51	0.075	1	11/09/21 10:03	11/15/21 14:45	7440-50-8	
Lead	11.7	mg/kg	1.0	0.21	2	11/09/21 10:03	11/15/21 14:29	7439-92-1	
Zinc	51.6	mg/kg	2.1	0.23	1	11/09/21 10:03	11/15/21 14:45	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prep	aration Met	nod: El	PA 7471B			
-	Pace Anal	ytical Services	- Minneapo	lis					
Mercury	0.025	mg/kg	0.019	0.0083	1	11/09/21 10:19	11/16/21 14:00	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapo	lis					
Percent Moisture	4.6	%	0.10	0.10	1		11/08/21 11:42		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586396

Sample: BPSOU-UR01SS08-11022 3	1- Lab ID:	10586396011	Collected	d: 11/02/21	14:25	Received: 11/	04/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight"	basis and are	adjusted for	percent mo	oisture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	- Minneapo	lis					
Arsenic	4.1	mg/kg	2.1	0.33	2	11/09/21 10:03	11/15/21 14:30	7440-38-2	
Cadmium	0.40	mg/kg	0.32	0.073	2	11/09/21 10:03	11/15/21 14:30	7440-43-9	
Copper	40.1	mg/kg	1.1	0.16	2	11/09/21 10:03	11/15/21 14:30	7440-50-8	
Lead	12.1	mg/kg	1.1	0.22	2	11/09/21 10:03	11/15/21 14:30	7439-92-1	
Zinc	73.9	mg/kg	4.3	0.48	2	11/09/21 10:03	11/15/21 14:30	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prep	aration Met	hod: El	PA 7471B			
	Pace Anal	ytical Services	- Minneapo	lis					
Mercury	0.012J	mg/kg	0.020	0.0088	1	11/09/21 10:19	11/16/21 14:02	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapo	lis					
Percent Moisture	10.7	%	0.10	0.10	1		11/08/21 11:42		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586396

Sample: BPSOU-UR01SS02-11032 2	1- Lab ID:	10586396012	Collected	d: 11/03/21	10:25	Received: 11/	04/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight"	basis and are	adjusted for p	percent mo	oisture, san	nple si	ze and any diluti	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	Minneapo	lis					
Arsenic	2.4	mg/kg	1.0	0.15	1	11/09/21 10:03	11/15/21 14:50	7440-38-2	
Cadmium	0.11J	mg/kg	0.15	0.034	1	11/09/21 10:03	11/15/21 14:50	7440-43-9	
Copper	41.5	mg/kg	0.50	0.073	1	11/09/21 10:03	11/15/21 14:50	7440-50-8	
Lead	6.1	mg/kg	1.0	0.21	2	11/09/21 10:03	11/15/21 14:32	7439-92-1	
Zinc	46.1	mg/kg	2.0	0.22	1	11/09/21 10:03	11/15/21 14:50	7440-66-6	
7471B Mercury	Analytical	Method: EPA 74	471B Prepa	aration Met	nod: El	PA 7471B			
	Pace Anal	ytical Services	Minneapo	lis					
Mercury	0.010J	mg/kg	0.020	0.0088	1	11/09/21 10:19	11/16/21 14:04	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	Minneapo	lis					
Percent Moisture	4.6	%	0.10	0.10	1		11/08/21 11:42		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586396

Sample: BPSOU-UR01SS02-11032 2-FD	1- Lab ID:	10586396013	Collected	l: 11/03/21	10:20	Received: 11/	04/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight"	' basis and are	adjusted for p	percent mo	isture, san	nple si	ze and any diluti	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prepa	aration Met	nod: El	PA 3050B			
	Pace Anal	ytical Services	Minneapol	is					
Arsenic	2.3	mg/kg	1.0	0.16	1	11/09/21 10:03	11/15/21 14:52	7440-38-2	
Cadmium	0.14J	mg/kg	0.15	0.035	1	11/09/21 10:03	11/15/21 14:52	7440-43-9	
Copper	42.2	mg/kg	0.51	0.075	1	11/09/21 10:03	11/15/21 14:52	7440-50-8	
Lead	31.0	mg/kg	1.0	0.21	2	11/09/21 10:03	11/15/21 14:34	7439-92-1	
Zinc	53.1	mg/kg	2.1	0.23	1	11/09/21 10:03	11/15/21 14:52	7440-66-6	
7471B Mercury	Analytical	Method: EPA 74	471B Prepa	aration Metl	nod: El	PA 7471B			
	Pace Anal	ytical Services	Minneapol	is					
Mercury	<0.0080	mg/kg	0.019	0.0080	1	11/09/21 10:19	11/16/21 14:05	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	Minneapol	is					
Percent Moisture	4.7	%	0.10	0.10	1		11/08/21 11:43		N2



Project:	BPSOU Unre	claimed \$	Sampling										
Pace Project No.:	10586396												
QC Batch:	782132			Analy	sis Metho	d:	EPA 7471B						
QC Batch Method:	EPA 7471B			Analy	sis Descri	ption:	7471B Merc	ury Solid	s				
				Laboratory:			Pace Analyt						
Associated Lab San		,	10586396002 10586396009	,	,			,		586396007	7,		
METHOD BLANK:	4164994				Matrix: So	olid							
Associated Lab San	•	,	10586396002 10586396009	·	,			,	,	586396007	7,		
				Blan	k	Reporting							
Paran	neter		Units	Resu	ult	Limit	MDI	-	Analyzed	Qı	ualifiers		
Mercury			mg/kg	<0	0.0079	0.0	18 0	.0079	11/16/21 13:	:36			
LABORATORY CON	NTROL SAMPI	LE: 416	64995										
				Spike	LC	s	LCS	%	Rec				
Paran	neter		Units	Conc.	Res	sult	% Rec	Lin	nits	Qualifiers			
Mercury			mg/kg	0.4	5	0.45	100	)	80-120				
MATRIX SPIKE & M	IATRIX SPIKE	DUPLIC	ATE: 416499	96		416499	7						
				MS	MSD								
Parameter	.	10 Units		Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	r	ng/kg	0.032	0.46	0.54	0.41	0.41	82	2 71	80-120	1	20	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



	BP300	Unreclaime	d Sampling										
Pace Project No.:	105863	96											
QC Batch:	78208	5		Analysis Method:			PA 6010D						
QC Batch Method: EPA 3050B			Analysis Description:			6010D Solids							
				F	Pace Analytical Services - Minneapolis								
Associated Lab Sar	nples:		01, 10586396002 08, 10586396009							586396007	',		
METHOD BLANK:	416487	7			Matrix: Sc	olid							
Associated Lab Sar	nples:		01, 10586396002 08, 10586396009		96010, 1058					586396007	, ,		
Parameter		Units	Result		Limit	MDL	-	Analyzed		Qualifiers			
Arsenic			mg/kg		<0.15	0.99	 9	0.15 1	11/15/21 13	:57			
Cadmium			mg/kg		<0.034	0.15			11/15/21 13				
Copper			mg/kg		<0.072	0.50			11/15/21 13				
Lead			mg/kg		<0.10	0.50			11/15/21 13				
Zinc			mg/kg		<0.22	2.0	)	0.22 1	11/15/21 13	:57			
LABORATORY CO	NTROL S	AMPLE: 4	1164878										
Parameter			Units	Spike Conc.	LC Res		LCS % Rec	% F Lim		Qualifiers			
Arsenic			mg/kg	45	.9	43.8	96	5	80-120		_		
Cadmium			mg/kg	45.		45.7	100		80-120				
Copper			mg/kg	45		44.4	97		80-120 80-120				
Lead			mg/kg mg/kg	45. 45.		44.6 44.6							
Zinc			mg/kg	43.	.9	44.0	91		80-120				
Zinc													
	MATRIX S	PIKE DUPL	ICATE: 41648			4164880							
	MATRIX S	PIKE DUPL		MS	MSD Spike		MSD		MED	9/ Doo		Max	
MATRIX SPIKE & N			10586396001	MS Spike	Spike	MS	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qu
MATRIX SPIKE & N Paramete		Units	10586396001 Result	MS Spike Conc.	Spike Conc.	MS Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qu
Arsenic		Units mg/kg	10586396001 Result 9.4	MS Spike Conc. 50.4	Spike Conc. 49.6	MS Result 51.1	Result 53.4	% Rec 83	3 % Rec 8	Limits 75-125	4	RPD 20	Qu
MATRIX SPIKE & M Paramete Arsenic Cadmium		Units mg/kg mg/kg	10586396001 Result	MS Spike Conc.	Spike Conc.	MS Result	Result	% Rec	% Rec 8 89 8 91	Limits 75-125 75-125		RPD 20 20	Qu
MATRIX SPIKE & M Paramete Arsenic		Units mg/kg	10586396001 Result 9.4 0.30	MS Spike Conc. 50.4 50.4	Spike Conc. 49.6 49.6	MS Result 51.1 44.8	Result 53.4 45.3	% Rec 83 88	89 80 83 83 83 83 83 83 83 83 83 83 83 83 83	Limits 75-125 75-125 75-125 75-125	4 1	RPD 20 20 20 20	Qu

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

## **REPORT OF LABORATORY ANALYSIS**

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Project:	BPSOU Unrecla	imed Sampling						
Pace Project No .:	10586396							
QC Batch:	782119		Analysis Meth	od: A	STM D2974			
QC Batch Method:	ASTM D2974		Analysis Desc	ription: D	ry Weight / %I	I by ASTM D	2974	
			Laboratory:		ace Analytical		•	
Associated Lab Sar		,	)2, 10586396003, 10 )9, 10586396010, 10	,	,		, ,	
SAMPLE DUPLICA	TE: 4164952							
			10586396001	Dup		Max		
Paran	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Percent Moisture		%	7.4	8.1		9	30 N2	
SAMPLE DUPLICA	TE: 4164953							
			10586396011	Dup		Max		
Paran	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Percent Moisture		%	10.7	10.6		1	30 N2	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### QUALIFIERS

### Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10586396

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD** - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	BPSOU Unreclaimed Sampling
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Pace Project No.:

10586396

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10586396001	BPSOU-UR01SS13-110221-1	EPA 3050B	782085	EPA 6010D	782656
10586396002	BPSOU-UR01SS13-110221-2	EPA 3050B	782085	EPA 6010D	782656
10586396003	BPSOU-UR01SS13-110221-3	EPA 3050B	782085	EPA 6010D	782656
10586396004	BPSOU-UR01SS12-110221-2	EPA 3050B	782085	EPA 6010D	782656
10586396005	BPSOU-UR01SS11-110221-2	EPA 3050B	782085	EPA 6010D	782656
10586396006	BPSOU-UR01SS11-110221-3	EPA 3050B	782085	EPA 6010D	782656
0586396007	BPSOU-UR01SS10-110221-2	EPA 3050B	782085	EPA 6010D	782656
0586396008	BPSOU-UR01SS10-110221-3	EPA 3050B	782085	EPA 6010D	782656
0586396009	BPSOU-UR01SS08-110221-1	EPA 3050B	782085	EPA 6010D	782656
0586396010	BPSOU-UR01SS08-110221-2	EPA 3050B	782085	EPA 6010D	782656
0586396011	BPSOU-UR01SS08-110221-3	EPA 3050B	782085	EPA 6010D	782656
0586396012	BPSOU-UR01SS02-110321-2	EPA 3050B	782085	EPA 6010D	782656
10586396013	BPSOU-UR01SS02-110321-2-FD	EPA 3050B	782085	EPA 6010D	782656
10586396001	BPSOU-UR01SS13-110221-1	EPA 7471B	782132	EPA 7471B	782860
0586396002	BPSOU-UR01SS13-110221-2	EPA 7471B	782132	EPA 7471B	782860
0586396003	BPSOU-UR01SS13-110221-3	EPA 7471B	782132	EPA 7471B	782860
0586396004	BPSOU-UR01SS12-110221-2	EPA 7471B	782132	EPA 7471B	782860
0586396005	BPSOU-UR01SS11-110221-2	EPA 7471B	782132	EPA 7471B	782860
0586396006	BPSOU-UR01SS11-110221-3	EPA 7471B	782132	EPA 7471B	782860
0586396007	BPSOU-UR01SS10-110221-2	EPA 7471B	782132	EPA 7471B	782860
0586396008	BPSOU-UR01SS10-110221-3	EPA 7471B	782132	EPA 7471B	782860
0586396009	BPSOU-UR01SS08-110221-1	EPA 7471B	782132	EPA 7471B	782860
0586396010	BPSOU-UR01SS08-110221-2	EPA 7471B	782132	EPA 7471B	782860
0586396011	BPSOU-UR01SS08-110221-3	EPA 7471B	782132	EPA 7471B	782860
0586396012	BPSOU-UR01SS02-110321-2	EPA 7471B	782132	EPA 7471B	782860
0586396013	BPSOU-UR01SS02-110321-2-FD	EPA 7471B	782132	EPA 7471B	782860
0586396001	BPSOU-UR01SS13-110221-1	ASTM D2974	782119		
0586396002	BPSOU-UR01SS13-110221-2	ASTM D2974	782119		
0586396003	BPSOU-UR01SS13-110221-3	ASTM D2974	782119		
0586396004	BPSOU-UR01SS12-110221-2	ASTM D2974	782119		
0586396005	BPSOU-UR01SS11-110221-2	ASTM D2974	782119		
0586396006	BPSOU-UR01SS11-110221-3	ASTM D2974	782119		
0586396007	BPSOU-UR01SS10-110221-2	ASTM D2974	782119		
0586396008	BPSOU-UR01SS10-110221-3	ASTM D2974	782119		
0586396009	BPSOU-UR01SS08-110221-1	ASTM D2974	782119		
0586396010	BPSOU-UR01SS08-110221-2	ASTM D2974	782119		
0586396011	BPSOU-UR01SS08-110221-3	ASTM D2974	782119		
0586396012	BPSOU-UR01SS02-110321-2	ASTM D2974	782119		
0586396013	BPSOU-UR01SS02-110321-2-FD	ASTM D2974	782119		

	1 absorbable	and Mana	Illin 1/ more Dummer // mille) // more and for more series of the series	0.00		011 0	CINE.	20		0	- 6 - J.	6				
	PPL PS Soil, Se	Soil, Sediment and Groundwater Samples	Jd Grou	whor	ater	San	ple	5 0		in o	si cru	200		08000	Page	_1 of2
	BP Site Node Path:	e Path:				I	Red D	ue Da	tte (mm	Req Due Date (mm/dd/yy):			11/17/21		73	ay No
-	BP/RM Facility No:	ity No:				1	Lab V	Vork C	Lab Work Order Number:	umber:				8		
Lab Name: Pace	Pace Analytical	BP/ARC Facility Address:	Address:							Consult	Consultant/Contractor	actor:		Pionee	Pioneer Technical Services	es
Lab Address: 1700	1700 Elm Street SE, Minneapolis, MN 55414	City, State, ZIP Code:	Code:							Consult	Consultant/Contractor Project No.	actor Pro	ject No:	BPSO	BPSOU Unreclaimed Sampling	npling
	Jennifer Anderson	Lead Regulatory Agency:	Agency:							Address:	16			1	1101 S. Montana St.	
Lab Phone: 612-6	612-607-6436	California Global ID No .:	I ID No.:							Consult	Consultant/Contractor PM:	actor PM		Scott S	Scott Sampson	
Lab Shipping Accnt:		Enfos Proposal No:	No:							Phone:		406-697-0946		Email: ssam	ssampson@pioneer-technical.com	-technical.co
Lab Bottle Order No:		Accounting Mode:	e: Provision		OOC-BU		00	OOC-RM		Send/St	Send/Submit EDD to:	O to:		Scott S	Scott Sampson	
Other Info:		Stage		Activity						Invoice To:	To:			BP-RM	BP-Other	
BP/RM PM: Mike I	Mike Mc Anulty						Ω.	eques	<b>Requested Analyses</b>	alyses				Re	Report Type & QC Level	Level
PM Phone: 406-7	406-723-1822				Filter	Filtered (Y/N)								Limited	Limited (Standard) Package	ge
PM Email: mca	mcanumc@bp.com				Prei	Preservation								1	Limited Plus Package	ge
					SJ			uz							Full Packa	Full Package Level 2
Lab Unique Sar No.	Unique Sample ID, must follow format of SAMPLENAMEYYYYMMDD Examples: MW01_20190101; BH01_3-5_20190101	ddmmYYY	Time	Depth Unit	(C) or Composite (C) Total Number of Containe	xitteM	sisylenA	Total Metals 6010 As, Cd, Cu, Pb,	YuDiaM 1747				2	2	Comments	
	BPSOU-UR01SS13-110221-1		15:00	-	-			-	×						5	F
	BPSOU-UR01SS13-110221-2		14:55	. <u>E</u>	۲- د	soil		×	×							14
	BPSOU-UR01SS13-110221-3		14:50	. <u>c</u>	۲ 0	soil		×	×							202
	BPSOU-UR01SS12-110221-2		15:20	. <u>E</u>	۲ υ	soil		×	×							Su
	BPSOU-UR01SS11-110221-2		15:20	.⊑	- -	soil		×	×							Cell,
	BPSOU-UR01SS11-110221-3		15:15	.⊑	-	soil		×	×							600
	BPSOU-UR01SS10-110221-2		15:00	. <u>E</u>	- -	soil		×	×							CW7
Sampler's Name:	Jesse Sims	Relin	Relinquished By / Affiliation	Affilia	tion		Date		Time		Acc	epted E	Accepted By / Affiliation	ion	Date	Time
Sampler's Company:	Pioneer Technical Services	Jesse Sims/PTS					11/3/2021	021	1600	R	2 mg	BIPH	PACE		17/4/11	829
Ship Method: FedE)	FedEx Overnight 11/3/2021															
Shipment Tracking No:	o: 4278 9934 6406															
Special Instructions:	ns: *Maximum 14 day TAT															

Proprietary and Confidential Property of BP and its Affiliates

Laboratory Management Program (LaMP) Chain of Custody Record

Soil, Sediment and Groundwater Samples BP Site Node Path:

Req Due Date (mm/dd/yy):

Page \_2\_ of \_2\_ °N N Rush TAT Yes 14 day

11/17/21

ss:         1700 Elm Street SE, Minneapolis, MN 55414         City. State, ZIP Code:           Jennifer Anderson         Lead Regulatory Agency:         Lead Regulatory Agency:           0 Accnt:         Enfos Proposal IN No:         California Global ID No:           0 Accnt:         Accounting Mode:         Proposal IN No:           0 Accnt:         Accounting Mode:         Provision           0 Accnt:         Stage         Activity           1 Addition         Stage         Activity           1 Addition         Stage         Activity           1 Addition         Stage         Activity           1 Addition         Time         Intervision           1 Addition         Time         Intervision           1 Addition         Examples         Intervision           1 Addition         Examples         Intervision <tr< th=""><th></th><th></th><th></th><th>Consultant/Contractor:</th><th>Pioneer Technical Services</th></tr<>				Consultant/Contractor:	Pioneer Technical Services
Jennifer Anderson         Lead Regulatory Agency:           612-607-6436         California Global ID No:           ng Accnt:         Enfos Proposal No:           Order No:         Accounting Mode:           Provision         Stage           Acritory         Stage           Acritory         Stage           Acritory         Stage           Acritory         Acritory           Acritory         Stage           Acritory         Acritory           Acritory         Stage           Acritory         Acritory           Acriory         Acritory				Consultant/Contractor Project No:	BPSOU Unreclaimed Sampling
: 612-607-6436       California Global ID No::         Ing Accrit:       Errfos Proposal No:         Order No:       Accounting Mode: Provision 00         Order No:       Stage         Accrit:       Stage         : Mike Mc Anulty       Stage         :: Mike Mc Anulty       Stage         :: Mike Mc Anulty       Stage         :: Mike Mc Anulty       Accounting Mode: Provision 00         :: A06-723-1822       Image: Accounting Mode: Provision 00         :: Mike Mc Anulty       Accounting Mode: Provision 00         :: Mike Mc Anulty       Image: Accounting Mode: Provision 00         :: A06-723-1822       Image: Accounting Mode: Provision 00         :: Mike Mc Anulty       Image: Accounting Mode: Provision 00         : A06-723-1822       Image: Accounting Mode: Provision 00         : A07-13-5_20190101       Image: Accounting Provision 00         : BPSOU-UR0ISS08-110221-3       Image: Accounting Provision 00         : BPSOU-UR0ISS08-110221-3       Image: Accounting Provision 00         : BPSOU-UR0ISS08-110221-3       Image: Accounting Provision 00				Address:	1101 S. Montana St.
пg Accrit         Enfose Proposal No:           Order No:         Accounting Mode:         Provision         00           Fisage         Accounting Mode:         Provision         00           1:<				Consultant/Contractor PM:	Scott Sampson
vo:         Accounting Mode:         Provision         OO           Re MC Anulty         Stage         Activity         Activity           Be-723-1822         Activity         Activity         Activity           Be-723-1822         Image         Activity         Activity           Be-723-1822         Image         Activity         Activity           Be-723-1822         Image         Activity         Activity           Image         Image         Activity         Activity           Be-723-1822         Image         Activity         Image           Image         Image         Image         Activity         Image           Image         Image         Image         Image         Image         Image           Image         Image         Image         Image         Image         Image         Image           Image         <				Phone: 406-697-0946 Email:	ssampson@pioneer-technical.com
Stage         Activity           I:         Mike Mc Anulty         Activity           I:         406-723-1822         Activity           ImcanumC@bb.com         ImcanumC@bb.com         ImcanumC@bb.com           Imple ID, must follow format of SAMPLENAMEYYYMMDD         Imme         Imme           Imple ID, must follow format of SAMPLENAMEYYYMMDD         Imme         Imme           Imple ID, must follow format of Sample ID, must follow follow         Imme         Imme           Imple ID         Imme         Imme         Imme         Imme           Imme         Imme         Imme			OOC-RM	Send/Submit EDD to:	Scott Sampson
I: Mike Mc Anuly       406.723-1822       Imcanumc@bp.com         i: 406.723-1822       Imcanumc@bp.com         Imcanumc@bp.com       Imcanumc@bp.com         iii due Sample ID, must follow format of SAMPLENAMEYYYMMDD       Imee         BH01_3.5_20190101       Imee         BH01_3.5_20190101       Imee         BPSOU-UR01SS10-110221-3       14:55         I: BPSOU-UR01SS08-110221-1       14:55         I: BPSOU-UR01SS08-110221-2       14:55         I: BPSOU-UR01SS08-110221-3       14:55         I: BPSOU-UR01SS08-110221-3       14:55         I: BPSOU-UR01SS08-110221-3       14:55         I: BPSOU-UR01SS08-110221-3       14:26         I: BPSOU-UR01SS08-110221-3       14:25         I: BPSOU-UR01SS08-110221-3       14:26         I: BPSOU-UR01SS08-110221-3       14:26         I: BPSOU-UR01SS08-110221-3       14:26         I: BPSOU-UR01SS08-110221-3       16:20         I: BPSOU-UR01SS08-110221-3       16:26         I: BPSOU-UR01SS02-110221-2       10:26         I: BPSOU-UR01	Activity			Invoice To: BP-RM	tM BP-Other
106-723-1822         106-723-1822           Incanumc@bp.com         Incanumc@bp.com           Incanumc@bp.com         Incanumc@bp.com           Incanumc@bp.com         Incanumc@bp.com           Emple ID, must follow format of SAMPLENAMEYYYMMDD         Incanumc@bp.com           Emple ID, must follow format of SAMPLENAMEYYYMMDD         Incanumc@bp.com           BH01_3-5_20190101         Incanumc@bp.com           BPSOU-UR01SS10-110221-3         14:55           Incanumc@bp.com         10:20           Incanumc@bp.com         10:21           Incanumc@bp.com         10:25           Incanumc@bp.com         10:26           Incanu			Requested Analyses	Analyses	Report Type & QC Level
Incanumc@bp.com         Time         Imcanumc@bp.com           nique Sample ID, must follow format of SAMPLENAMEYYYMMDD         Time         Important           EH01_3-5_20190101         Time         Important         Important           BH01_3-5_20190101         Time         Important         Important           BH01_3-5_20190101         Time         Important         Important           BH01_3-5_20190101         Time         Important         Important           BPSOU-UR0ISSI0-110221-3         14:35         Important         Important           BPSOU-UR0ISS08-110221-1         14:35         Important         Important           BPSOU-UR0ISS08-110221-2         14:35         Important         Important           BPSOU-UR0ISS08-110221-3         14:36         Important         Important           BPSOU-UR0ISS08-110221-2         14:36         Important         Important           BPSOU-UR0ISS08-110221-2         10:25         Important         Important           BPSOU-UR0ISS08-110221-2         10:26         Important         Important	Filter	Filtered (Y/N)			Limited (Standard) Package
Sample ID, must foliow format of SAMPLENAMEYYYYMMDD Examples: MW01_20190101; Examples: MW01_20190101; BH01_3.5_20190101 1020101 BPSOU-UR01SS08-110221-3 14:55 in c BPSOU-UR01SS08-110221-1 14:35 in c BPSOU-UR01SS08-110221-1 14:35 in c BPSOU-UR01SS08-110221-2 14:35 in c BPSOU-UR01SS08-110221-2 14:35 in c BPSOU-UR01SS08-110221-2 14:35 in c BPSOU-UR01SS08-110221-2 14:35 in c	Pres	Preservation			Limited Plus Package
Sample ID, must follow format of SAMPLENAMEYYYYMMDD Examples: MW01_20190101; BH01_3-5_20190101 BH01_3-5_20190101 BPSOU-UR01SS08-110221-3 BPSOU-UR01SS08-110221-3 BPSOU-UR01SS08-110221-1 BPSOU-UR01SS08-110221-1 BPSOU-UR01SS08-110221-1 BPSOU-UR01SS08-110221-1 BPSOU-UR01SS08-110221-2 BPSOU-UR01SS08-1002 BPSOU-DEBDSOU-DEB	12		uz		Full Package Level 2
BPSOU-UR01SS10-110221-3       14:55       in       c         BPSOU-UR01SS08-110221-1       14:35       in       c         BPSOU-UR01SS08-110221-2       14:35       in       c         BPSOU-UR01SS08-110221-2       14:35       in       c         BPSOU-UR01SS08-110221-3       14:25       in       c         BPSOU-UR01SS08-110221-3       14:25       in       c         BPSOU-UR01SS02-110221-2       10:20       in       c         BPSOU-UR01SS02-110221-2-FD       10:20       in       c         BPSOU-UR01SS02-110221-2-FD       10:20       in       c	Depth Unit Grab (G) or Composite (C)	xnisM sisylenA	Aritatyeis Total Metals 6010 As, Cd, Cu, Pb, ک ۲۹۲۱ Metcury	3	Comments
BPSOU-UR01SS08-110221-1       14:35       in       c         BPSOU-UR01SS08-110221-2       14:35       in       c         BPSOU-UR01SS08-110221-3       14:25       in       c         BPSOU-UR01SS02-110221-2       10:25       in       c         BPSOU-UR01SS02-110221-2       10:20       in       c         BPSOU-UR01SS02-110221-2-FD       10:20       in       c         Jesse Sims       Relinquished By / Affiliation       Affiliation	о Е	soil	×		COX X
BPSOU-UR01SS08-110221-2       14:30       in       c         BPSOU-UR01SS08-110221-3       14:25       in       c         BPSOU-UR01SS02-110221-2       10:25       in       c         BPSOU-UR01SS02-110221-2-FD       10:26       in       c         Jesse Sims       Affiliation	in C	soil	××		697
BPSOU-UR01SS08-110221-3       14:25       in       c         BPSOU-UR01SS02-110221-2       10:25       in       c         BPSOU-UR01SS02-110221-2-FD       10:20       in       c         Jesse Sims       Relinquished By / Affiliation	υ	soil	××		0/0
BPSOU-UR0ISS02-110221-2         10:25         in         c           BPSOU-UR0ISS02-110221-2-FD         10:20         in         c           Jesse Sims         Relinquished By / Affiliation	υ	soil	×		0NI
BPSOU-UR01SS02-110221-2-FD 10:20 in c Jesse Sims Relinquished By / Affiliation	υ	soil	××		7,10
Jesse Sims	υ	soil	×		CD.
Jesse Sims					art 1"e
	By / Affiliation		Date Time	e Accepted By / Affiliation	Date Time
Sampler's Company: Pioneer Technical Services Jesse Sims/PTS		1	11/3/2021 1600	o gallace	11/4/21 850
Ship Method: FedEx Overnight 11/3/2021					
Shipment Tracking No: 4278 9934 6406					
Special Instructions: "Maximum 14 day TAT					

### Property of BP and its Affiliates Proprietary and Confidential

N

	Document	Name:	Document Revised: 12Aug2020	
Pace Analytical S	ample Condition Upon	Receipt (SCUR) - ESI	Page 1 of 1	
-	Document	: No.:	Pace Analytical Services -	
	ENV-FRM-MIN4-	0149 Rev.01	Minneapolis	
Sample Condition Client Name:		Project #:		
Upon Receipt – ESI				
BP - Ptoneer Tell	well Samires	WO WO	#:10586396	
		PM:	and the second	7/21
Courier: Pace SpeeDee	USPS Client	and the second	NT: BP-PIONEER	. // 21
			T. BP-PIONEER	
Tracking Number: 4278 9934 6406		1-MIN4-0142		
Custody Seal on Cooler/Box Present?	No Seals Inta	ct? 🖉 Yes 🗌 No	Biological Tissue Frozen?	
Packing Material: Bubble Wrap Bubbl	e Bags 🖾 None 🔲 C	)ther:	Temp Blank?	s 🗌 No
T1/0461) T2/1336) T3/04	(59)			
T4(0254) T5(0489)	Type of ice:	Wet Blue	None Dry Melted	
Temp should be above freezing to 6°C Cooler Temp	Read w/temp blank: 2.5	3		See Exceptions
Correction Factor: true Cooler Temp Corre	ected w/temp blank :	5		V-FRM-MIN4-0142 1 Container
USDA Regulated Soil: ( N/A, water sample/Other:			rson Examining Contents: HB UI	
Did samples originate in a quarantine zone within the	the second se		ate from a foreign source (internationally,	
ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (chec				including.
		(F-MN-Q-338) and incl	ude with SCUR/COC paperwork.	
			COMMENTS:	
Chain of Custody Present and Filled Out?	Yes No	1.		
Chain of Custody Relinquished? Sampler Name and/or Signature on COC?	Yes No	2. N/A 3.		
Samples Arrived within Hold Time?		4.	A STATE OF A	12
Short Hold Time Analysis (<72 hr)?		5. Fecal Coliforn	HPC Total Coliform/E coli BOD/cBO	D Hex Chrome
Rush Turn Around Time Requested?	Yes No	6. 14 day	litrate Nitrite Orthophos	
Sufficient Sample Volume?	Ares No	0. (Trang		
Triple Volume Provided for MS/MSD (if more than 10 samp		N/A 7.		
Correct Containers Used?	Yes No	8.		
-Pace Containers Used? Containers Intact?	Yes No	9.		
Field Filtered Volume Received for Dissolved Tests?			isible in the dissolved container? Yes	No
Is sufficient information available to reconcile the samples to t	he COC 🛛 Yes 🗌 No	11. If no, write ID/ D		See Exception 🗌
Matrix: Water Soil Oil Other			Er	NV-FRM-MIN4-0142
All containers needing acid/base preservation have bee				
and a second sec	n	12. Sample #		
checked?		12. Sample # N/A		
checked?		N/A		JZine Acotata
	□Yes □No Ø	N/A	☐ HNO3 ☐H2SO4 [	]Zinc Acetate
checked? All containers needing preservation are found to be in	□Yes □No Ø			
checked? All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>10 Cyanio Exceptions: VOA, Coliform, TOC/DOC Oil and Grease,	□Yes □No Ø □Yes □No Ø □Yes □No Ø	N/A NaOH	Yes	See Exception 🗌
checked? All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>10 Cyanie Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS *If adding preservation	□Yes □No Ø □Yes □No Ø de) □Yes □No Ø ve to	N/A Dositive for Res.	]Yes ]No pH Paper Lot# EN	See Exception
checked? All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>10 Cyanio Exceptions: VOA, Coliform, TOC/DOC Oil and Grease,	□Yes □No Ø □Yes □No Ø de) □Yes □No Ø ve to	N/A Dositive for Res.	Yes	See Exception 🗌
checked? All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>10 Cyanic Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS *If adding preservati a container it must be added to associated field and equipt Extra labels present on soil VOA or WIDRO contaners?	Yes No A Yes No A de) Yes No A ve to nent blanks (verify with PM fir	N/A Dositive for Res. Chlorine? N/A Res. Chlorine N/A 13.	Yes No pH Paper Lot# EN 0-6 Roll 0-6 Strip	See Exception IV-FRM-MIN4-0142 0-14 Strip See Exception
checked? All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanio Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS *If adding preservati a container it must be added to associated field and equipt Extra labels present on soil VOA or WIDRO contaners? Headspace in VOA Vials (greater than 6mm)?	☐ Yes       No       ♀         ☐ Yes       No       ♀         de)       ☐ Yes       No       ♀         we to       No       ♀       ∩         nent blanks (verify with PM fir       ☐ Yes       No       ♀         ☐ Yes       ☐ No       ♀       ♀         ☐ Yes       ☐ No       ♀       ♀         ☐ Yes       ☐ No       ♀       ♀	N/A Distribution N/A Di	Yes No pH Paper Lot# EN 0-6 Roll 0-6 Strip	See Exception IV-FRM-MIN4-0142 0-14 Strip See Exception
checked? All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>10 Cyanic Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS *If adding preservati a container it must be added to associated field and equipt Extra labels present on soil VOA or WIDRO contaners?	Yes     No     No       Yes     No     No       de)     Yes     No       Yes     No     No       ve to     No     No       nent blanks (verify with PM fir       Yes     No       Yes     No       Yes     No	N/A Distribution N/A Di	Yes No pH Paper Lot# EN 0-6 Roll 0-6 Strip	See Exception IV-FRM-MIN4-0142 0-14 Strip See Exception
checked? All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanio Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS *If adding preservati a container it must be added to associated field and equipt Extra labels present on soil VOA or WIDRO contaners? Headspace in VOA Vials (greater than 6mm)? 3 Trip Blanks Present?	Yes     No     No	N/A Distribution N/A Distribution N/A Distribution N/A Distribution Provided All All All All All All All All All Al	Yes No pH Paper Lot# EN 0-6 Roll 0-6 Strip EN hk Lot # (if purchased):	See Exception IV-FRM-MIN4-0142 0-14 Strip See Exception IV-FRM-MIN4-0140
checked? All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>10 Cyania Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS *If adding preservati a container it must be added to associated field and equips Extra labels present on soil VOA or WIDRO contaners? Headspace in VOA Vials (greater than 6mm)? 3 Trip Blanks Present? Trip Blank Custody Seals Present? Temp Log: Temp must be maintained at <6°C during login, record t 20 mins	Yes     No     Image: Constraint of the second seco	N/A Distribution N/A Distribution N/A Distribution N/A Distribution Provided All All All All All All All All All Al	Yes No pH Paper Lot# EN 0-6 Roll 0-6 Strip EN hk Lot # (if purchased): Field Data Required?	See Exception IV-FRM-MIN4-0142 0-14 Strip See Exception
checked? All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>10 Cyanio Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS *If adding preservation a container it must be added to associated field and equipted Extra labels present on soil VOA or WIDRO contaners? Headspace in VOA Vials (greater than 6mm)? 3 Trip Blanks Present? Trip Blank Custody Seals Present? Temp Log: Temp must be maintained at <6°C during login, record to 20 mins Opened Time: [350 Temp: 2-8 Corrected Temp	Yes     No     Image: Constraint of the second seco	N/A Distribution NaOH N/A Positive for Res. Chlorine? St) Res. Chlorine N/A 13. N/A 14. N/A Pace Trip Blan CATION/RESOLUTION ted:	Yes No pH Paper Lot# EN 0-6 Roll 0-6 Strip EN Nk Lot # (if purchased): Field Data Required? Date/Time:	See Exception IV-FRM-MIN4-0142 0-14 Strip See Exception IV-FRM-MIN4-0140
checked? All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>10 Cyania Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS *If adding preservati a container it must be added to associated field and equips Extra labels present on soil VOA or WIDRO contaners? Headspace in VOA Vials (greater than 6mm)? 3 Trip Blanks Present? Trip Blank Custody Seals Present? Temp Log: Temp must be maintained at <6°C during login, record t 20 mins	Yes     No     Image: Constraint of the second seco	N/A Distribution NaOH N/A Positive for Res. Chlorine? St) Res. Chlorine N/A 13. N/A 14. N/A 14. N/A Pace Trip Blan CATION/RESOLUTION ted:	Yes No pH Paper Lot# EN 0-6 Roll 0-6 Strip EN hk Lot # (if purchased): Field Data Required?	See Exception    IV-FRM-MIN4-0142 0-14 Strip See Exception    IV-FRM-MIN4-0140    Yes    No

Hote: Whenever there is a discrepant dance ing iterational compliance samples, a copy of this form will be sent to	the North Carolina Dernit Certification office (i.e. out
hold, incorrect preservative, rut of temp, incorrect containers)	
	n

> /Page 28 of 29

FIU

From:	Jesse Sims
То:	Jennifer Anderson
Subject:	COC error
Date:	Thursday, November 4, 2021 9:08:37 AM

CAUTION: This email originated from outside Pace Analytical. Do not click links or open attachments unless you recognize the sender and know the content is safe. Hello.

I just found an error on a COC we sent yesterday tracking number 427899346406 page 2, BPSOU-UR01SS02-110221-2 and BPSOU-UR01SS02-110221-2-FD need to be updated to BPSOU-UR01SS02-110321-2 and BPSOU-UR01SS02-110321-2-FD. Wanted you to be aware because the sample bags will not match the COC.

### Jesse Sims

Butte Staff Engineer

This e-mail and any attachments are intended only for the named recipient(s) and may contain information that is legally privileged, confidential, or exempt from disclosure under applicable law. If you have received this message in error, or are not the named recipient(s), you may not retain copy or use this e-mail or any attachment for any purpose or disclose all or any part of the contents to any other person. Any such dissemination, distribution or copying of this e-mail or its attachments is strictly prohibited. Please do not send any information via e-mail that is subject to relevant export controls, sanction requirements, or that is classified as covered defense information, as that term is defined in DFARS 252.204-7012. Pioneer Technical Services observes all NIST protocols as it pertains to electronic mail systems. Please contact it@pioneer-technical.com with any questions or concerns.



November 22, 2021

Scott Sampson Pioneer Technical Services 1101 S. Montana Street Butte, MT 59701

RE: Project: BPSOU Unreclaimed Sampling Pace Project No.: 10587272

Dear Scott Sampson:

Enclosed are the analytical results for sample(s) received by the laboratory on November 11, 2021. The results relate only to the samples included in this report. Results contained within this report conform to the most current version of the TNI standards, BP LaMP Technical Requirements Revision 12.1, and any applicable Quality Assurance Project Plan (QAPP), or Work Plan unless otherwise narrated in the body of this report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network: • Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Inder

Jennifer Anderson jennifer.anderson@pacelabs.com (612)607-6436 Project Manager

Enclosures





Pace Analytical Services, LLC 1700 Elm Street Minneapolis, MN 55414 (612)607-1700

### CERTIFICATIONS

Project: BPSOU Unreclaimed Sampling Pace Project No.: 10587272

### Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414 A2LA Certification #: 2926.01\* 1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab Alabama Certification #: 40770 Alaska Contaminated Sites Certification #: 17-009\* Alaska DW Certification #: MN00064 Arizona Certification #: AZ0014\* Arkansas DW Certification #: MN00064 Arkansas WW Certification #: 88-0680 California Certification #: 2929 Colorado Certification #: MN00064 Connecticut Certification #: PH-0256 EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137 Florida Certification #: E87605\* Georgia Certification #: 959 Hawaii Certification #: MN00064 Idaho Certification #: MN00064 Illinois Certification #: 200011 Indiana Certification #: C-MN-01 Iowa Certification #: 368 Kansas Certification #: E-10167 Kentucky DW Certification #: 90062 Kentucky WW Certification #: 90062 Louisiana DEQ Certification #: AI-03086\* Louisiana DW Certification #: MN00064 Maine Certification #: MN00064\* Maryland Certification #: 322 Michigan Certification #: 9909 Minnesota Certification #: 027-053-137\* Minnesota Dept of Ag Approval: via MN 027-053-137 Minnesota Petrofund Registration #: 1240\* Mississippi Certification #: MN00064

Missouri Certification #: 10100 Montana Certification #: CERT0092 Nebraska Certification #: NE-OS-18-06 Nevada Certification #: MN00064 New Hampshire Certification #: 2081\* New Jersey Certification #: MN002 New York Certification #: 11647\* North Carolina DW Certification #: 27700 North Carolina WW Certification #: 530 North Dakota Certification #: R-036 Ohio DW Certification #: 41244 Ohio VAP Certification (1700) #: CL101 Ohio VAP Certification (1800) #: CL110\* Oklahoma Certification #: 9507\* Oregon Primary Certification #: MN300001 Oregon Secondary Certification #: MN200001\* Pennsylvania Certification #: 68-00563\* Puerto Rico Certification #: MN00064 South Carolina Certification #:74003001 Tennessee Certification #: TN02818 Texas Certification #: T104704192\* Utah Certification #: MN00064\* Vermont Certification #: VT-027053137 Virginia Certification #: 460163\* Washington Certification #: C486\* West Virginia DEP Certification #: 382 West Virginia DW Certification #: 9952 C Wisconsin Certification #: 999407970 Wyoming UST Certification #: via A2LA 2926.01 USDA Permit #: P330-19-00208 \*Please Note: Applicable air certifications are denoted with an asterisk (\*).



### SAMPLE SUMMARY

Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10

10587272

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10587272001	BPSOU-UR01SS03-110321-1	Solid	11/03/21 09:45	11/11/21 08:50
10587272002	BPSOU-UR01SS03-110321-2	Solid	11/03/21 09:40	11/11/21 08:50
10587272003	BPSOU-UR01SS03-110321-3	Solid	11/03/21 09:35	11/11/21 08:50
10587272004	BPSOU-UR01SS04-110321-1	Solid	11/03/21 09:55	11/11/21 08:50
10587272005	BPSOU-UR01SS04-110321-2	Solid	11/03/21 09:50	11/11/21 08:50
10587272006	BPSOU-UR01SS04-110321-3	Solid	11/03/21 09:45	11/11/21 08:50
10587272007	BPSOU-UR01SS05-110321-1	Solid	11/03/21 11:05	11/11/21 08:50
10587272008	BPSOU-UR01SS05-110321-2	Solid	11/03/21 11:00	11/11/21 08:50
10587272009	BPSOU-UR01SS05-110321-3	Solid	11/03/21 10:55	11/11/21 08:50
10587272010	BPSOU-UR01SS06-110321-1	Solid	11/03/21 10:55	11/11/21 08:50
10587272011	BPSOU-UR01SS06-110321-1-FD	Solid	11/03/21 11:00	11/11/21 08:50
10587272012	BPSOU-UR01SS06-110321-2	Solid	11/03/21 10:50	11/11/21 08:50
10587272013	BPSOU-UR01SS07-110321-1	Solid	11/03/21 10:50	11/11/21 08:50
10587272014	BPSOU-UR01SS07-110321-2	Solid	11/03/21 10:40	11/11/21 08:50



### SAMPLE ANALYTE COUNT

Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587272

10587272001 B	PSOU-UR01SS03-110321-1	EPA 6010D EPA 7471B	DM	5
		EPA 7471B		
			LMW	1
		ASTM D2974	JDL	1
10587272002 B	PSOU-UR01SS03-110321-2	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10587272003 B	PSOU-UR01SS03-110321-3	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10587272004 B	PSOU-UR01SS04-110321-1	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10587272005 B	PSOU-UR01SS04-110321-2	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10587272006 B	PSOU-UR01SS04-110321-3	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10587272007 B	PSOU-UR01SS05-110321-1	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10587272008 B	PSOU-UR01SS05-110321-2	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10587272009 B	PSOU-UR01SS05-110321-3	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10587272010 B	PSOU-UR01SS06-110321-1	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10587272011 B	PSOU-UR01SS06-110321-1-FD	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10587272012 B	PSOU-UR01SS06-110321-2	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10587272013 B	PSOU-UR01SS07-110321-1	EPA 6010D	DM	5



### SAMPLE ANALYTE COUNT

Project:BPSOU Unreclaimed SamplingPace Project No.:10587272

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10587272014	BPSOU-UR01SS07-110321-2	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1

PASI-M = Pace Analytical Services - Minneapolis



### **PROJECT NARRATIVE**

Project: BPSOU Unreclaimed Sampling

### Pace Project No.: 10587272

Method:EPA 6010DDescription:6010D MET ICPClient:BPAR-PIONEER-MTDate:November 22, 2021

### **General Information:**

14 samples were analyzed for EPA 6010D by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

### Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

### Sample Preparation:

The samples were prepared in accordance with EPA 3050B with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### QC Batch: 783304

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10587272001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

• MSD (Lab ID: 4170175)

• Zinc

Additional Comments:



### **PROJECT NARRATIVE**

Project: BPSOU Unreclaimed Sampling

### Pace Project No.: 10587272

Method:EPA 7471BDescription:7471B MercuryClient:BPAR-PIONEER-MTDate:November 22, 2021

### **General Information:**

14 samples were analyzed for EPA 7471B by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

### Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

### Sample Preparation:

The samples were prepared in accordance with EPA 7471B with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### QC Batch: 783306

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10587272001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4170182)
  - Mercury
- MSD (Lab ID: 4170183)
  - Mercury

### Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587272

Sample: BPSOU-UR01SS03-11032	1- Lab ID:	10587272001	Collected	1: 11/03/21	09:45	Received: 11/	11/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight"	' basis and are	adjusted for	percent mo	oisture, san	nple si	ize and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prepa	aration Met	hod: E	PA 3050B			
	Pace Anal	ytical Services	- Minneapol	is					
Arsenic	3.7	mg/kg	1.3	0.20	1	11/12/21 14:18	11/17/21 13:24	7440-38-2	
Cadmium	0.23	mg/kg	0.19	0.044	1	11/12/21 14:18	11/17/21 13:24	7440-43-9	
Copper	68.6	mg/kg	0.64	0.093	1	11/12/21 14:18	11/17/21 13:24	7440-50-8	
Lead	13.8	mg/kg	1.3	0.26	2	11/12/21 14:18	11/17/21 12:37	7439-92-1	
Zinc	71.7	mg/kg	2.6	0.29	1	11/12/21 14:18	11/17/21 13:24	7440-66-6	M1
7471B Mercury	Analytical	Method: EPA 7	471B Prepa	aration Metl	hod: El	PA 7471B			
-	Pace Anal	ytical Services	- Minneapol	is					
Mercury	<0.010	mg/kg	0.023	0.010	1	11/12/21 15:07	11/21/21 11:23	7439-97-6	M1
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
-	Pace Anal	ytical Services	- Minneapol	is					
Percent Moisture	26.2	%	0.10	0.10	1		11/12/21 13:03		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587272

Sample: BPSOU-UR01SS03-11032 2	1- Lab ID:	10587272002	Collected	I: 11/03/21	09:40	Received: 11/	11/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight'	' basis and are	e adjusted for <sub>l</sub>	percent mo	isture, san	nple si	ze and any diluti	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prepa	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	- Minneapol	is					
Arsenic	9.2	mg/kg	1.1	0.17	1	11/12/21 14:18	11/17/21 13:38	7440-38-2	
Cadmium	0.24	mg/kg	0.16	0.037	1	11/12/21 14:18	11/17/21 13:38	7440-43-9	
Copper	63.1	mg/kg	0.55	0.080	1	11/12/21 14:18	11/17/21 13:38	7440-50-8	
Lead	10.7	mg/kg	1.1	0.23	2	11/12/21 14:18	11/17/21 12:49	7439-92-1	
Zinc	92.0	mg/kg	2.2	0.24	1	11/12/21 14:18	11/17/21 13:38	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prepa	aration Met	nod: El	PA 7471B			
-	Pace Anal	ytical Services	- Minneapol	is					
Mercury	<0.0088	mg/kg	0.020	0.0088	1	11/12/21 15:07	11/21/21 11:28	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapol	is					
Percent Moisture	15.4	%	0.10	0.10	1		11/12/21 13:03		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587272

Sample: BPSOU-UR01SS03-11032	1- Lab ID:	10587272003	Collected	: 11/03/21	09:35	Received: 11/	(11/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight"	' basis and are	e adjusted for	percent mo	isture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prepa	ration Met	hod: Ef	PA 3050B			
	Pace Anal	ytical Services	- Minneapoli	s					
Arsenic	2.3	mg/kg	1.1	0.17	1	11/12/21 14:18	11/17/21 13:39	7440-38-2	
Cadmium	0.18	mg/kg	0.17	0.038	1	11/12/21 14:18	11/17/21 13:39	7440-43-9	
Copper	39.5	mg/kg	0.56	0.082	1	11/12/21 14:18	11/17/21 13:39	7440-50-8	
Lead	8.3	mg/kg	1.1	0.23	2	11/12/21 14:18	11/17/21 12:50	7439-92-1	
Zinc	65.7	mg/kg	2.2	0.25	1	11/12/21 14:18	11/17/21 13:39	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prepa	ration Met	hod: EF	PA 7471B			
	Pace Anal	ytical Services	- Minneapoli	s					
Mercury	<0.0088	mg/kg	0.020	0.0088	1	11/12/21 15:07	11/21/21 11:30	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapoli	s					
Percent Moisture	15.2	%	0.10	0.10	1		11/12/21 13:03		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587272

Sample: BPSOU-UR01SS04-11032	1- Lab ID:	10587272004	Collected	: 11/03/21	09:55	Received: 11/	11/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight"	basis and are	adjusted for p	percent mo	isture, san	nple si	ze and any diluti	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 60	010D Prepa	aration Met	nod: El	PA 3050B			
	Pace Anal	vtical Services	Minneapoli	S					
Arsenic	2.8	mg/kg	1.0	0.16	1	11/12/21 14:18	11/17/21 13:41	7440-38-2	
Cadmium	0.18	mg/kg	0.15	0.035	1	11/12/21 14:18	11/17/21 13:41	7440-43-9	
Copper	49.7	mg/kg	0.51	0.075	1	11/12/21 14:18	11/17/21 13:41	7440-50-8	
Lead	16.9	mg/kg	1.0	0.21	2	11/12/21 14:18	11/17/21 12:52	7439-92-1	
Zinc	73.6	mg/kg	2.0	0.23	1	11/12/21 14:18	11/17/21 13:41	7440-66-6	
7471B Mercury	Analytical	Method: EPA 74	471B Prepa	aration Metl	nod: El	PA 7471B			
-	Pace Anal	vtical Services ·	Minneapoli	S					
Mercury	<0.0088	mg/kg	0.020	0.0088	1	11/12/21 10:58	11/18/21 12:35	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	vtical Services ·	Minneapoli	s					
Percent Moisture	7.9	%	0.10	0.10	1		11/12/21 13:04		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587272

Sample: BPSOU-UR01SS04-11032 2	1- Lab ID:	10587272005	Collected	1: 11/03/21	09:50	Received: 11/	11/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight"	basis and are	e adjusted for p	percent mo	oisture, san	nple si	ze and any diluti	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	Minneapo	is					
Arsenic	3.0	mg/kg	1.0	0.16	1	11/12/21 14:18	11/17/21 13:43	7440-38-2	
Cadmium	0.13J	mg/kg	0.16	0.035	1	11/12/21 14:18	11/17/21 13:43	7440-43-9	
Copper	61.4	mg/kg	0.52	0.076	1	11/12/21 14:18	11/17/21 13:43	7440-50-8	
Lead	13.5	mg/kg	1.0	0.21	2	11/12/21 14:18	11/17/21 12:54	7439-92-1	
Zinc	59.0	mg/kg	2.1	0.23	1	11/12/21 14:18	11/17/21 13:43	7440-66-6	
7471B Mercury	Analytical	Method: EPA 74	471B Prepa	aration Met	hod: El	PA 7471B			
-	Pace Anal	ytical Services	Minneapo	is					
Mercury	<0.0084	mg/kg	0.019	0.0084	1	11/12/21 10:58	11/18/21 12:36	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	Minneapo	lis					
Percent Moisture	6.5	%	0.10	0.10	1		11/12/21 13:04		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587272

Sample: BPSOU-UR01SS04-11032 3	1- Lab ID:	10587272006	Collected	I: 11/03/21	09:45	Received: 11/	11/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight'	basis and are	adjusted for	percent mo	isture, san	nple si	ze and any diluti	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prepa	aration Met	hod: El	PA 3050B			
	Pace Anal	vtical Services	- Minneapol	is					
Arsenic	1.7	mg/kg	1.0	0.15	1	11/12/21 14:18	11/17/21 13:44	7440-38-2	
Cadmium	0.065J	mg/kg	0.15	0.035	1	11/12/21 14:18	11/17/21 13:44	7440-43-9	
Copper	35.9	mg/kg	0.51	0.074	1	11/12/21 14:18	11/17/21 13:44	7440-50-8	
Lead	3.9	mg/kg	1.0	0.21	2	11/12/21 14:18	11/17/21 12:55	7439-92-1	
Zinc	42.8	mg/kg	2.0	0.23	1	11/12/21 14:18	11/17/21 13:44	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prepa	aration Met	nod: El	PA 7471B			
-	-	vtical Services							
Mercury	<0.0090	mg/kg	0.021	0.0090	1	11/12/21 15:07	11/21/21 11:31	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	vtical Services	- Minneapol	is					
Percent Moisture	6.9	%	0.10	0.10	1		11/12/21 13:04		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587272

Sample: BPSOU-UR01SS05-11032	1- Lab ID:	10587272007	Collected	I: 11/03/21	11:05	Received: 11/	(11/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight"	basis and are	adjusted for	percent mo	isture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prepa	aration Met	nod: El	PA 3050B			
	Pace Anal	tical Services	- Minneapoli	is					
Arsenic	5.2	mg/kg	1.1	0.16	1	11/12/21 14:18	11/17/21 13:46	7440-38-2	
Cadmium	0.56	mg/kg	0.16	0.037	1	11/12/21 14:18	11/17/21 13:46	7440-43-9	
Copper	41.8	mg/kg	0.54	0.079	1	11/12/21 14:18	11/17/21 13:46	7440-50-8	
Lead	56.2	mg/kg	1.1	0.22	2	11/12/21 14:18	11/17/21 12:57	7439-92-1	
Zinc	158	mg/kg	2.2	0.24	1	11/12/21 14:18	11/17/21 13:46	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prepa	aration Metl	nod: EF	PA 7471B			
-	Pace Anal	tical Services	Minneapol	is					
Mercury	0.24	mg/kg	0.019	0.0084	1	11/12/21 15:07	11/21/21 11:36	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	tical Services	- Minneapol	is					
Percent Moisture	8.8	%	0.10	0.10	1		11/12/21 13:04		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587272

Sample: BPSOU-UR01SS05-11032 2	1- Lab ID:	10587272008	Collected	d: 11/03/21	11:00	Received: 11/	11/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight'	basis and are	e adjusted for <sub>l</sub>	percent mo	oisture, san	nple si	ze and any diluti	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	- Minneapo	lis					
Arsenic	4.3	mg/kg	0.99	0.15	1	11/12/21 14:18	11/17/21 13:48	7440-38-2	
Cadmium	0.40	mg/kg	0.15	0.034	1	11/12/21 14:18	11/17/21 13:48	7440-43-9	
Copper	42.1	mg/kg	0.50	0.073	1	11/12/21 14:18	11/17/21 13:48	7440-50-8	
Lead	58.7	mg/kg	0.99	0.20	2	11/12/21 14:18	11/17/21 12:59	7439-92-1	
Zinc	152	mg/kg	2.0	0.22	1	11/12/21 14:18	11/17/21 13:48	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prep	aration Met	hod: El	PA 7471B			
-	Pace Anal	ytical Services	- Minneapo	lis					
Mercury	0.35	mg/kg	0.019	0.0081	1	11/12/21 15:07	11/21/21 11:38	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapo	lis					
Percent Moisture	5.1	%	0.10	0.10	1		11/12/21 13:04		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587272

Sample: BPSOU-UR01SS05-11032	1- Lab ID:	10587272009	Collected	d: 11/03/21	10:55	Received: 11/	11/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight"	basis and are	e adjusted for <sub>l</sub>	percent mo	oisture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	- Minneapo	lis					
Arsenic	4.4	mg/kg	1.2	0.18	1	11/12/21 14:18	11/17/21 13:49	7440-38-2	
Cadmium	0.52	mg/kg	0.18	0.040	1	11/12/21 14:18	11/17/21 13:49	7440-43-9	
Copper	37.8	mg/kg	0.59	0.086	1	11/12/21 14:18	11/17/21 13:49	7440-50-8	
Lead	40.6	mg/kg	1.2	0.24	2	11/12/21 14:18	11/17/21 13:00	7439-92-1	
Zinc	141	mg/kg	2.4	0.26	1	11/12/21 14:18	11/17/21 13:49	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prep	aration Met	nod: El	PA 7471B			
	Pace Anal	ytical Services	- Minneapo	lis					
Mercury	0.84	mg/kg	0.022	0.0094	1	11/12/21 15:07	11/21/21 11:39	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapo	lis					
Percent Moisture	18.4	%	0.10	0.10	1		11/12/21 13:05		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587272

Sample: BPSOU-UR01SS06-11032	1- Lab ID:	10587272010	Collected	: 11/03/21	10:55	Received: 11/	(11/21 08:50 M	atrix: Solid	
Results reported on a "dry weight"	basis and are	adjusted for	percent mo	isture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prepa	aration Met	nod: EF	PA 3050B			
	Pace Anal	ytical Services	- Minneapoli	S					
Arsenic	3.2	mg/kg	1.0	0.16	1	11/12/21 14:18	11/17/21 13:51	7440-38-2	
Cadmium	0.14J	mg/kg	0.16	0.035	1	11/12/21 14:18	11/17/21 13:51	7440-43-9	
Copper	40.0	mg/kg	0.52	0.076	1	11/12/21 14:18	11/17/21 13:51	7440-50-8	
Lead	22.4	mg/kg	1.0	0.21	2	11/12/21 14:18	11/17/21 13:02	7439-92-1	
Zinc	53.5	mg/kg	2.1	0.23	1	11/12/21 14:18	11/17/21 13:51	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prepa	ration Metl	nod: EF	PA 7471B			
-	Pace Anal	ytical Services	- Minneapoli	s					
Mercury	0.016J	mg/kg	0.018	0.0080	1	11/12/21 15:07	11/21/21 11:41	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapoli	s					
Percent Moisture	7.1	%	0.10	0.10	1		11/12/21 13:05		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587272

Sample: BPSOU-UR01SS06-11032 1-FD	1- Lab ID:	10587272011	Collected	d: 11/03/21	11:00	Received: 11/	11/21 08:50 M	atrix: Solid	
Results reported on a "dry weight"	basis and are	adjusted for	percent mo	oisture, san	nple si	ze and any diluti	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	nod: El	PA 3050B			
	Pace Anal	vtical Services	- Minneapo	lis					
Arsenic	3.2	mg/kg	1.0	0.15	1	11/12/21 14:18	11/17/21 13:53	7440-38-2	
Cadmium	0.13J	mg/kg	0.15	0.035	1	11/12/21 14:18	11/17/21 13:53	7440-43-9	
Copper	42.8	mg/kg	0.51	0.074	1	11/12/21 14:18	11/17/21 13:53	7440-50-8	
Lead	18.6	mg/kg	1.0	0.21	2	11/12/21 14:18	11/17/21 13:04	7439-92-1	
Zinc	55.5	mg/kg	2.0	0.23	1	11/12/21 14:18	11/17/21 13:53	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prepa	aration Metl	nod: El	PA 7471B			
-	Pace Anal	vtical Services	- Minneapo	lis					
Mercury	0.017J	mg/kg	0.018	0.0080	1	11/12/21 15:07	11/21/21 11:42	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
-	Pace Anal	vtical Services	- Minneapo	lis					
Percent Moisture	6.8	%	0.10	0.10	1		11/12/21 13:05		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587272

Sample: BPSOU-UR01SS06-11032 2	1- Lab ID:	10587272012	Collected	d: 11/03/21	10:50	Received: 11/	11/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight"	basis and are	e adjusted for p	percent mo	oisture, san	nple si	ze and any diluti	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	Minneapo	lis					
Arsenic	3.4	mg/kg	1.0	0.16	1	11/12/21 14:18	11/17/21 13:58	7440-38-2	
Cadmium	0.18	mg/kg	0.15	0.035	1	11/12/21 14:18	11/17/21 13:58	7440-43-9	
Copper	38.2	mg/kg	0.51	0.075	1	11/12/21 14:18	11/17/21 13:58	7440-50-8	
Lead	9.1	mg/kg	1.0	0.21	2	11/12/21 14:18	11/17/21 13:09	7439-92-1	
Zinc	49.9	mg/kg	2.1	0.23	1	11/12/21 14:18	11/17/21 13:58	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prep	aration Met	hod: El	PA 7471B			
-	Pace Anal	ytical Services	Minneapo	lis					
Mercury	0.022	mg/kg	0.018	0.0079	1	11/12/21 15:07	11/21/21 11:44	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	Minneapo	lis					
Percent Moisture	5.4	%	0.10	0.10	1		11/12/21 13:05		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587272

Sample: BPSOU-UR01SS07-11032 1	1- Lab ID:	10587272013	Collected	1: 11/03/21	10:50	Received: 11/	(11/21 08:50 M	atrix: Solid	
Results reported on a "dry weight"	basis and are	e adjusted for	percent mo	oisture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prepa	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	- Minneapol	is					
Arsenic	2.0	mg/kg	1.0	0.16	1	11/12/21 14:18	11/17/21 13:59	7440-38-2	
Cadmium	0.17	mg/kg	0.15	0.035	1	11/12/21 14:18	11/17/21 13:59	7440-43-9	
Copper	31.2	mg/kg	0.51	0.074	1	11/12/21 14:18	11/17/21 13:59	7440-50-8	
Lead	9.2	mg/kg	1.0	0.21	2	11/12/21 14:18	11/17/21 13:11	7439-92-1	
Zinc	55.5	mg/kg	2.0	0.23	1	11/12/21 14:18	11/17/21 13:59	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prepa	aration Met	nod: El	PA 7471B			
-	Pace Anal	ytical Services	- Minneapol	is					
Mercury	0.013J	mg/kg	0.020	0.0086	1	11/12/21 15:07	11/21/21 11:46	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
-	Pace Anal	ytical Services	- Minneapol	is					
Percent Moisture	5.1	%	0.10	0.10	1		11/12/21 13:05		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587272

Sample: BPSOU-UR01SS07-11032 2	1- Lab ID:	10587272014	Collected	d: 11/03/21	10:40	Received: 11/	11/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight'	' basis and are	adjusted for p	percent mo	oisture, san	nple si	ze and any diluti	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	- Minneapo	lis					
Arsenic	1.5	mg/kg	1.0	0.16	1	11/12/21 14:18	11/17/21 14:01	7440-38-2	
Cadmium	0.18	mg/kg	0.15	0.035	1	11/12/21 14:18	11/17/21 14:01	7440-43-9	
Copper	29.5	mg/kg	0.51	0.075	1	11/12/21 14:18	11/17/21 14:01	7440-50-8	
Lead	5.8	mg/kg	1.0	0.21	2	11/12/21 14:18	11/17/21 13:14	7439-92-1	
Zinc	46.6	mg/kg	2.1	0.23	1	11/12/21 14:18	11/17/21 14:01	7440-66-6	
7471B Mercury	Analytical	Method: EPA 74	471B Prep	aration Met	nod: El	PA 7471B			
-	Pace Anal	ytical Services	- Minneapo	lis					
Mercury	<0.0084	mg/kg	0.019	0.0084	1	11/12/21 15:07	11/21/21 11:49	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapo	lis					
Percent Moisture	3.7	%	0.10	0.10	1		11/12/21 13:06		N2



Project: Pace Project No.:	BPSOU Unreclain 10587272	ned Sampling										
QC Batch:	783302		Anal	ysis Metho	d:	EPA 7471B						
QC Batch Method:	EPA 7471B			, ysis Descri		7471B Merc	cury Solids					
				oratory:	•	Pace Analyt			apolis			
Associated Lab Sar	mples: 10587272	004, 1058727200	)5									
METHOD BLANK:	4170164			Matrix: S	olid							
Associated Lab Sar	mples: 10587272	004, 1058727200	)5									
			Bla	nk	Reporting							
Parar	meter	Units	Res	ult	Limit	MD	L	Analyzed	Qı	ualifiers		
Mercury		mg/kg	<	0.0079	0.01	8 (	0.0079 1	1/18/21 11:	57			
LABORATORY CO Parar	NTROL SAMPLE:	4170165 Units	Spike Conc.	LC	-	LCS % Rec	% R Lim		Qualifiers			
Mercury		mg/kg	0.4	47	0.46	99	9	80-120				
MATRIX SPIKE & M	MATRIX SPIKE DUF	PLICATE: 4170	166 MS	MSD	4170167	7						
		10587279001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
				•								
Paramete	r Units		Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:	BPSOU Unrecla	imed Sampling										
Pace Project No .:	10587272											
QC Batch:	783306		Analys	sis Metho	d:	EPA 7471B						
QC Batch Method:	EPA 7471B		Analy	sis Descri	ption:	7471B Merc	ury Solids					
			Labor	atory:		Pace Analyti	cal Servic	es - Minnea	apolis			
Associated Lab San		72001, 10587272002 72010, 10587272011	,	,	,		,	272008, 10	587272009	),		
METHOD BLANK:	4170180			Matrix: So	olid							
Associated Lab San		72001, 10587272002 72010, 10587272011		2012, 105				272008, 10	587272009	),		
Paran	neter	Units	Resu		Limit	MDL	-	Analyzed	Qu	ualifiers		
Mercury		mg/kg	<0	.0079	0.01	18 0	.0079 1	1/21/21 11::	20			
LABORATORY COM	NTROL SAMPLE:	4170181										
			Spike	LC	S	LCS	% F	lec				
Paran	neter	Units	Conc.	Res	sult	% Rec	Lim	its (	Qualifiers			
Mercury		mg/kg	0.47	7	0.48	102	2	80-120				
MATRIX SPIKE & M	IATRIX SPIKE DU	JPLICATE: 41701			417018	3						
			MS	MSD								
Parameter	. Un	10587272001 its Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:	BPSOU Unreclaimed Sampling

	700004		A	ala Marti								
	783304			sis Metho		PA 6010D						
QC Batch Method:	EPA 3050B			sis Descri	•	010D Solic						
				ratory:		Pace Analyt			•			
Associated Lab Samp		001, 10587272002 008, 10587272009										
METHOD BLANK: 4	170172			Matrix: So	olid							
Associated Lab Samp		001, 10587272002 008, 10587272009		2010, 105								
Paramet	ter	Units	Resu	ult	Limit	MDI	_	Analyze	ed Qu	alifiers		
Arsenic		mg/kg		<0.15	0.97	7	0.15	11/17/21 1	2:34			
Cadmium		mg/kg	<	<0.033	0.15	5	0.033	11/17/21 1	2:34			
Copper		mg/kg		<0.071	0.49	9	0.071	11/17/21 1	2:34			
Lead		mg/kg		<0.10	0.49			11/17/21 1	-			
Zinc		mg/kg		<0.22	1.9	)	0.22	11/17/21 1	2:34			
LABORATORY CONT	ROL SAMPLE:	4170173										
LABORATORY CONT	ROL SAMPLE:	4170173	Spike	LC	s	LCS	%	Rec				
LABORATORY CONT Parame		4170173 Units	Spike Conc.	LC		LCS % Rec		Rec mits	Qualifiers			
Parame			•	Res			Lir		Qualifiers	_		
Parame		Units	Conc.		sult	% Rec	Lir 2	mits 80-120 80-120	Qualifiers	_		
Parame Arsenic Cadmium		Units mg/kg mg/kg mg/kg	Conc. 46. 46. 46.	Res 7 7 7	sult 42.8 46.4 45.2	% Rec 92 93 95	Lir 2 9 7	mits 80-120 80-120 80-120	Qualifiers	_		
Paramer Arsenic Cadmium Copper Lead		Units mg/kg mg/kg mg/kg mg/kg	Conc. 46. 46. 46. 46.	Res 7 7 7 7 7	42.8 46.4 45.2 45.1	% Rec 92 92 93 97 97	Lir 2 2 2 7 7 7	mits 80-120 80-120 80-120 80-120	Qualifiers	_		
Paramer Arsenic Cadmium Copper Lead		Units mg/kg mg/kg mg/kg	Conc. 46. 46. 46.	Res 7 7 7 7 7	sult 42.8 46.4 45.2	% Rec 92 93 95	Lir 2 2 2 7 7 7	mits 80-120 80-120 80-120	Qualifiers			
Parame Arsenic Cadmium Copper Lead Zinc	ter	Units mg/kg mg/kg mg/kg mg/kg mg/kg	Conc. 46. 46. 46. 46. 46.	Res 7 7 7 7 7	42.8 46.4 45.2 45.1	% Rec 92 92 93 97 97	Lir 2 2 2 7 7 7	mits 80-120 80-120 80-120 80-120	Qualifiers			
Parame Arsenic Cadmium Copper Lead Zinc	ter	Units mg/kg mg/kg mg/kg mg/kg mg/kg	Conc. 46. 46. 46. 46. 46.	Res 7 7 7 7 7	42.8 46.4 45.2 45.1 45.4	% Rec 92 95 97 97 97	Lir 2 2 2 7 7 7	mits 80-120 80-120 80-120 80-120 80-120		_		
Parame Arsenic Cadmium Copper Lead Zinc MATRIX SPIKE & MA <sup>T</sup>	TRIX SPIKE DUPI	Units mg/kg mg/kg mg/kg mg/kg LICATE: 41701	Conc. 46. 46. 46. 46. 46. 46. 46. 74 MS Spike	Res 7 7 7 7 7 7 7 7 7 7 7 7 8 9 8 9 8 9 8 9	42.8 46.4 45.2 45.1 45.4 4170175 MS	% Rec 92 93 97 97 97 97	Lir 2 3 7 7 7 7 8 8	mits 80-120 80-120 80-120 80-120 80-120 MSD	% Rec	_	Max	
Parame Arsenic Cadmium Copper Lead Zinc	ter	Units mg/kg mg/kg mg/kg mg/kg mg/kg	Conc. 46. 46. 46. 46. 46. 46. 46. 74 MS	Res 7 7 7 7 7 7 7 7 7 7 8 8 8 8 8 8 8 8 8	42.8 46.4 45.2 45.1 45.4 4170175	% Rec 92 95 97 97 97	Lir 2 3 7 7 7	mits 80-120 80-120 80-120 80-120 80-120	% Rec	RPD	Max RPD	Qua
Paramer Arsenic Cadmium Copper Lead Zinc MATRIX SPIKE & MA <sup>T</sup> Parameter	TRIX SPIKE DUPI	Units mg/kg mg/kg mg/kg mg/kg LICATE: 41701 10587272001 Result	Conc. 46. 46. 46. 46. 46. 46. 46. 74 MS Spike	Res 7 7 7 7 7 7 7 7 7 7 7 7 8 9 8 9 8 9 8 9	42.8 46.4 45.2 45.1 45.4 4170175 MS	% Rec 92 93 97 97 97 97	Lir 2 3 7 7 7 7 8 8	Mits 80-120 80-120 80-120 80-120 80-120 MSD % Rec	% Rec		RPD	Qua
Paramer Arsenic Cadmium Copper Lead Zinc MATRIX SPIKE & MA <sup>T</sup> Parameter Arsenic	TRIX SPIKE DUPI	Units mg/kg mg/kg mg/kg mg/kg LICATE: 41701 10587272001 Result 3.7	Conc. 46. 46. 46. 46. 46. 46. 74 MS Spike Conc. 65.2 65.2	Res 7 7 7 7 7 7 7 7 7 7 7 8 8 8 8 8 8 8 8	sult 42.8 46.4 45.2 45.1 45.4 4170175 MS Result 54.5 53.5	% Rec 92 93 93 93 95 95 95 95 95 95 95 95 95 95 95 95 95	Lir 2 3 7 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Mits 80-120 80-120 80-120 80-120 80-120 MSD <u>% Rec</u> 8 7	% Rec Limits 77 75-125 32 75-125		RPD 20 20	Qua
Paramer Arsenic Cadmium Copper Lead Zinc MATRIX SPIKE & MA <sup>T</sup> Parameter Arsenic Cadmium Copper	ter TRIX SPIKE DUPI Units mg/kg mg/kg mg/kg	Units mg/kg mg/kg mg/kg mg/kg mg/kg LICATE: 41701 10587272001 Result 3.7 0.23 68.6	Conc. 46. 46. 46. 46. 46. 46. 74 MS Spike Conc. 65.2 65.2 65.2 65.2	Res 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	sult 42.8 46.4 45.2 45.1 45.4 4170175 MS Result 54.5 53.5 123	% Rec 92 93 97 97 97 97 97 97 97 97 97 97 97 97 97	Lir 2 3 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Mits 80-120 80-120 80-120 80-120 80-120 MSD % Rec 8 7 2 4 8 8 7 2 8 4 8 8 7 8 8 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8	% Rec Limits 77 75-125 32 75-125 33 75-125	2 2 1	RPD 20 20 20	Qua
Arsenic Cadmium Copper Lead Zinc MATRIX SPIKE & MA <sup>T</sup>	ter TRIX SPIKE DUPI Units mg/kg mg/kg	Units mg/kg mg/kg mg/kg mg/kg LICATE: 41701 10587272001 Result 3.7 0.23	Conc. 46. 46. 46. 46. 46. 46. 74 MS Spike Conc. 65.2 65.2	Res 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	sult 42.8 46.4 45.2 45.1 45.4 4170175 MS Result 54.5 53.5	% Rec 92 93 93 93 95 95 95 95 95 95 95 95 95 95 95 95 95	Lir 2 7 7 7 8 8	Mits 80-120 80-120 80-120 80-120 80-120 MSD % Rec 8 7 2 8 7 2 8 9 5 5 5 5 5 5 5 5 5 5 5 5 5	% Rec Limits 77 75-125 32 75-125	2 2	RPD 20 20 20 20 20	

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### **REPORT OF LABORATORY ANALYSIS**

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Project:	BPSOU Unreclai	med Sampling						
Pace Project No.:	10587272							
QC Batch:	783390		Analysis Meth	od: A	STM D2974			
QC Batch Method:	ASTM D2974		Analysis Desc	ription: D	Dry Weight / %M	by ASTM D2	2974	
			Laboratory:	F	Pace Analytical Se	ervices - Mir	nneapolis	
Associated Lab Sar		,	2, 10587272003, 10 9, 10587272010, 10	,	,		· ·	
SAMPLE DUPLICA	TE: 4170570							
			10587272001	Dup		Max		
Paran	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Percent Moisture		%	26.2	24.5	5 7		30 N2	
SAMPLE DUPLICA	TE: 4170674							
			10586923013	Dup		Max		
Paran	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Percent Moisture		%	17.1	17.2	2 0		30 N2	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### QUALIFIERS

### Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587272

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD** - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### WORKORDER QUALIFIERS

WO: 10587272

[1] The samples were received outside of required temperature range. Analysis was completed upon client approval.

### ANALYTE QUALIFIERS

- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Pace Project No.:

ng 10587272

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
10587272001	BPSOU-UR01SS03-110321-1	EPA 3050B	783304	EPA 6010D	783590
0587272002	BPSOU-UR01SS03-110321-2	EPA 3050B	783304	EPA 6010D	783590
0587272003	BPSOU-UR01SS03-110321-3	EPA 3050B	783304	EPA 6010D	783590
0587272004	BPSOU-UR01SS04-110321-1	EPA 3050B	783304	EPA 6010D	783590
0587272005	BPSOU-UR01SS04-110321-2	EPA 3050B	783304	EPA 6010D	783590
0587272006	BPSOU-UR01SS04-110321-3	EPA 3050B	783304	EPA 6010D	783590
0587272007	BPSOU-UR01SS05-110321-1	EPA 3050B	783304	EPA 6010D	783590
0587272008	BPSOU-UR01SS05-110321-2	EPA 3050B	783304	EPA 6010D	783590
0587272009	BPSOU-UR01SS05-110321-3	EPA 3050B	783304	EPA 6010D	783590
0587272010	BPSOU-UR01SS06-110321-1	EPA 3050B	783304	EPA 6010D	783590
0587272011	BPSOU-UR01SS06-110321-1-FD	EPA 3050B	783304	EPA 6010D	783590
0587272012	BPSOU-UR01SS06-110321-2	EPA 3050B	783304	EPA 6010D	783590
0587272013	BPSOU-UR01SS07-110321-1	EPA 3050B	783304	EPA 6010D	783590
10587272014	BPSOU-UR01SS07-110321-2	EPA 3050B	783304	EPA 6010D	783590
0587272001	BPSOU-UR01SS03-110321-1	EPA 7471B	783306	EPA 7471B	783726
0587272002	BPSOU-UR01SS03-110321-2	EPA 7471B	783306	EPA 7471B	783726
0587272003	BPSOU-UR01SS03-110321-3	EPA 7471B	783306	EPA 7471B	783726
0587272004	BPSOU-UR01SS04-110321-1	EPA 7471B	783302	EPA 7471B	783727
0587272005	BPSOU-UR01SS04-110321-2	EPA 7471B	783302	EPA 7471B	783727
0587272006	BPSOU-UR01SS04-110321-3	EPA 7471B	783306	EPA 7471B	783726
0587272007	BPSOU-UR01SS05-110321-1	EPA 7471B	783306	EPA 7471B	783726
0587272008	BPSOU-UR01SS05-110321-2	EPA 7471B	783306	EPA 7471B	783726
0587272009	BPSOU-UR01SS05-110321-3	EPA 7471B	783306	EPA 7471B	783726
0587272010	BPSOU-UR01SS06-110321-1	EPA 7471B	783306	EPA 7471B	783726
0587272011	BPSOU-UR01SS06-110321-1-FD	EPA 7471B	783306	EPA 7471B	783726
0587272012	BPSOU-UR01SS06-110321-2	EPA 7471B	783306	EPA 7471B	783726
0587272013	BPSOU-UR01SS07-110321-1	EPA 7471B	783306	EPA 7471B	783726
0587272014	BPSOU-UR01SS07-110321-2	EPA 7471B	783306	EPA 7471B	783726
0587272001	BPSOU-UR01SS03-110321-1	ASTM D2974	783390		
0587272002	BPSOU-UR01SS03-110321-2	ASTM D2974	783390		
0587272003	BPSOU-UR01SS03-110321-3	ASTM D2974	783390		
0587272004	BPSOU-UR01SS04-110321-1	ASTM D2974	783390		
0587272005	BPSOU-UR01SS04-110321-2	ASTM D2974	783390		
0587272006	BPSOU-UR01SS04-110321-3	ASTM D2974	783390		
0587272007	BPSOU-UR01SS05-110321-1	ASTM D2974	783390		
0587272008	BPSOU-UR01SS05-110321-2	ASTM D2974	783390		
0587272009	BPSOU-UR01SS05-110321-3	ASTM D2974	783390		
0587272010	BPSOU-UR01SS06-110321-1	ASTM D2974	783390		
0587272011	BPSOU-UR01SS06-110321-1-FD	ASTM D2974	783390		
0587272012	BPSOU-UR01SS06-110321-2	ASTM D2974	783390		
0587272013	BPSOU-UR01SS07-110321-1	ASTM D2974	783390		
0587272014	BPSOU-UR01SS07-110321-2	ASTM D2974	783390		

BP/RM Facility No:       Pace Analytical     BP/ARC Facility Address:       1700 Elm Street SE, Minneapolis, MN 55414     City, State, ZIP Code:       Jennifer Anderson     Lead Regulatory Agency:       612-607-6436     California Global ID No.:       ccnt:     Enfos Proposal No:       r No:     Accounting Mode: Provision.							
BP/ARC Facility Add BP/ARC Facility Add City. State, ZIP Codd Lead Regulatory Ago Lead Regulatory Ago California Global ID Enfos Proposal No: Accounting Mode:		- Req I	Req Due Date (mm/dd/yy):	(mm/dd/	y):	11/22/21	Rush TAT Yes 14 day No
BP/ARC Facility Add City, State, ZIP Codd Lead Regulatory Age California Global ID I Enfos Proposal No: Accounting Mode:		- Lab V	Lab Work Order Number:	er Numbe			
City. State, ZIP Cod. Lead Regulatory Agr California Global ID I Enfos Proposal No: Accounting Mode:				Con	Consultant/Contractor:		Pioneer Technical Services
Lead Regulatory Age California Global ID I Enfos Proposal No: Accounting Mode:				Con	Consultant/Contractor Project No:		BPSOU Unreclaimed Sampling
nia Global ID   Proposal No: hting Mode:				Address:	ess:		1101 S. Montana St.
roposal No: ting Mode:				Con	Consultant/Contractor PM:		Scott Sampson
ting Mode:				Phone:	le: 406-697-0946	Email:	ssampson@pioneer-technical rom
	on 00C-BU		OOC-RM	- Send	Send/Submit EDD to:	1	Scott Sampson
Stage	Activity			Invoi	Invoice To:	BP-RM	BP-Other
		£	<b>Requested Analyses</b>	Analyse	s		Report Type & OC Level
	Filterer	Filtered (V/M)		-			imited /Standards
mcanumc@bp.com		(http://www.	-	_			Liriited (Standard) Package
	Preser	Preservation	-	+			Limited Plus Package
Unique Sample ID, must follow format of SAMPLENAMEYYYYMMDD Examples: MW01_20190101; BH01_3-5_20190101	Jepth Unit Grab (G) or Composite (C) Total Number of Containers	xitjen sisylenA	otal Metals 6010 As, Cd, Cu, Pb, Zn 471 Mercury				Ful Package Level 2 WO# : 10587272 10587272
BPSOU-UR01SS03-110321-1 9:45			-				
BPSOU-UR01SS03-110321-2 9:40	- ت ا	soil	×				
BPSOU-UR01SS03-110321-3 9:35	in c	soil	×				38
BPSOU-UR01SS04-110321-1 9:55	in c 1	soil	×	-			
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BPSOU-UR01SS05-110321-1 11:05	۔ د آ	soil	×				25
Jesse Sims Relinquished By / Affiliation	y / Affiliation	Date	Time		Accepted By / Affiliation	' Affiliation	
Pioneer Technical Services Jesse Sims/PTS		11/8/2021	21 1600	$\square$		1415	
Ship Method: FedEx Overnight Ship Date: 11/8/21			-				
Shipment Tracking No: 4378 9934 6428				-			
*Maximum 14 day TAT							

Proprietary and Confidential Property of BP and its Affiliates

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# Laboratory Management Program (LaMP) Chain of Custody Record

soil, Sediment and Groundwater Samples

PI-NCT FacIlity Address:     Lab Work Order Number:       PI-NCT FacIlity Address:     Consultant/Contractor Pinit       Early State:     Consultant/Contractor Pinit       California Global ID No:     Consultant/Contractor Pinit       Fendes Proposal No:     Address:       Activity     Prono:       Address:     Consultant/Contractor Pinit       Address:     Address:       Address:     Prono:       Address:     Address:       Address:     Address	BIOR Facility No.         Constrained operating No.         And very set at the management operating oper	W	BP Site Node Path:	2		,		}	200	, etc. C			. '		Page	- of
Op/Edit         Description         Description         Description           In Street ES. Minnapoliti, MN 5644         Div, State, ZP Coder         Description         Consultantification           AnARDER         Califier         Div, State, ZP Coder         Consultantification         Consultantification           AnARDER         Califier         Consultantification         Consultantification         Consultantification           AnARDER         Califier         Consultantification         Consultantification         Consultantification           AnARDER         Califier         Consultantification         Consultantification         Consultantification           AnARDE         Califier         Consultantification         Consultantification         Consultantification           AnARDE         Califier         Califier         Consultantification         Consultantification           AnARDE         Califier         Califier         Canifier         Consultantification           AnARDE         Califier         Califier         Califier         Califier           AnARDE         Califier         Califier         Califier         Califier           AnARDE         Califier         Califier         Califier         Califier           Anary Califier         Califier <td>Op/Rel         Description         Description         Description           In Strate St. Mineapolis In MI SG44         Description         Description         Description           In Strate St. Mineapolis In MI SG44         Description         Description         Description           In Strate St. Mineapolis In MI SG44         Description         Description         Description           In Strate St. Mineapolis In MI SG44         Description         Description         Description           In Strate S</td> <td>4</td> <td>BP/RM Facility No.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>) and the l</td> <td></td> <td>   </td> <td></td> <td>1/22/21</td> <td>Rush TAT Yes 14 day</td> <td>No</td>	Op/Rel         Description         Description         Description           In Strate St. Mineapolis In MI SG44         Description         Description         Description           In Strate St. Mineapolis In MI SG44         Description         Description         Description           In Strate St. Mineapolis In MI SG44         Description         Description         Description           In Strate St. Mineapolis In MI SG44         Description         Description         Description           In Strate S	4	BP/RM Facility No.							) and the l		 		1/22/21	Rush TAT Yes 14 day	No
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74466         Califoria (calif L) No.         Califoria (calif L) No.         Consultant/Contractor PN:           Free Properation:         Entre Properation:         EntreProperation:         Entre Properation: <td>74466         Cathonia Gabair Dike:         Consultant/Contractor Pix.         Consultant/Contractor Pix.           Andrew         Action Provide         Provide         Consultant/Contractor Pix.         Provide         Pro</td> <td>B</td> <td></td> <td>Lead Regulatory Ag</td> <td>ency:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Addr</td> <td>ess:</td> <td></td> <td></td> <td></td> <td><u>p</u></td>	74466         Cathonia Gabair Dike:         Consultant/Contractor Pix.         Consultant/Contractor Pix.           Andrew         Action Provide         Provide         Consultant/Contractor Pix.         Provide         Pro	B		Lead Regulatory Ag	ency:						Addr	ess:				<u>p</u>
Endors         Endors         Endors         Province in comment commentecomment comment commentecomment comment commentecom	Effore         Effore         Processes Nor.         Processes Nor.         Processes Nor.           Advity         Association         Accounting Mode:         Provide         Processes	Lab L		California Global ID	No.:						202	ultont/Co.			1 101 S. MONTANA ST.	
Maily         Mocontring Mode:         Provision         OCC_RM         Mode: To:         Uncontring To:         Uncontri:         Uncontring To:         Uncontring To:<	Andress         Accounting Mode:         Periodism         OCC.R.M.         Series         Accounting Mode:         Periodism         Decounting Mode:         Decounting Mode: <th< td=""><td>Lab</td><td>Shipping Accnt:</td><td>Enfos Proposal No:</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>ITACTOR PIN:</td><td></td><td>Scott Sampson</td><td></td></th<>	Lab	Shipping Accnt:	Enfos Proposal No:									ITACTOR PIN:		Scott Sampson	
Stand         Stand <tt< td=""><td>Sounds         Sage         Anny         Common         Sector         Sector</td><td>Lab</td><td>Bottle Order No:</td><td>Accounting Mode:</td><td>Provision</td><td>C</td><td></td><td></td><td></td><td>NO</td><td></td><td></td><td>06-697-094</td><td></td><td>ssampson@pioneer-te</td><td>chnical.com</td></tt<>	Sounds         Sage         Anny         Common         Sector	Lab	Bottle Order No:	Accounting Mode:	Provision	C				NO			06-697-094		ssampson@pioneer-te	chnical.com
Christy         Immode To:         Description         Description <thdescrin< th=""> <thdescrin< th="">         Descrin&lt;</thdescrin<></thdescrin<>	CARRING         Control         Control         Decrete         Decrete <t< td=""><td>Othe</td><td>r Info:</td><td>Starre</td><td></td><td></td><td></td><td></td><td>5</td><td></td><td>Send</td><td>/Submit E</td><td>DD to:</td><td></td><td>Scott Sam</td><td></td></t<>	Othe	r Info:	Starre					5		Send	/Submit E	DD to:		Scott Sam	
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BPSOU-UR0ISS07-110321-1       10:50       in       c       1       soil       x       x       n       n       1	BPSOU-UR0JSS07-110321-1         10:50         in         c         1         soil         x </td <td></td> <td>BPSOU-UR01SS06-110321-2</td> <td>-</td> <td></td> <td></td> <td>-</td> <td>soil</td> <td>×</td> <td>×</td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td>		BPSOU-UR01SS06-110321-2	-			-	soil	×	×		-				
BPSOU-UR0ISS07-110321-2         10.40         in         c         1         soil         x </td <td>BPSOU-UR01SS07-110321-2       10:40       in       c       1       solid       x</td> <td></td> <td>BPSOU-UR01SS07-110321-1</td> <td></td> <td></td> <td> </td> <td>-</td> <td>soil</td> <td>×</td> <td>×</td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td>	BPSOU-UR01SS07-110321-2       10:40       in       c       1       solid       x		BPSOU-UR01SS07-110321-1				-	soil	×	×		-				
Jesse Sims     Relinquished By / Affiliation     Date     Time     Accepted By / Affiliation     Date       Pioneer Technical Services     Jesse Sims/PTS     11/8/201     1600     Accepted By / Affiliation     Date       Vernight     Ship Date: 11/8/21     Jesse Sims/PTS     11/8/2021     1600     Accepted By / Affiliation     Date       Vernight     Ship Date: 11/8/21     Jesse Sims/PTS     11/8/2021     1600     Accepted By / Affiliation     Date       Variation     Ship Date: 11/8/21     Jesse Sims/PTS     11/8/202     1600     Accepted By / Affiliation     Date       Variation     Ship Date: 11/8/21     Jesse Sims/PTS     Jesse Simple Submitted Yes / No     Jesse Simple Submitted Yes / No     Jesse Simple Submitted Yes / No	Jesse Sims     Relinquished By / Affiliation     Date     Time     Accepted By / Affiliation       Pioneer Technical Services     Jesse Sims/PTS     11/8/2021     1600     Accepted By / Affiliation       Version     Ship Date: 11/8/21     Jesse Sims/PTS     11/8/2021     1600     Accepted By / Affiliation       Version     Ship Date: 11/8/21     Jesse Sims/PTS     11/8/2021     1600     Accepted By / Affiliation       Version     Ship Date: 11/8/21     Jesse Sims/PTS     11/8/2021     1600     Accepted By / Affiliation       Version     Ship Date: 11/8/21     Jesse Sims/PTS     11/8/2021     1600     Accepted By / Affiliation       Version     Ship Date: 11/8/21     Interview     Interview     Interview     Accepted By / Affiliation       Version     Ship Date: 11/8/21     Interview     Interview     Interview     Accepted By / Affiliation       Version     Ship Date: 11/8/21     Interview     Interview     Interview     Accepted By / Affiliation       Maximum 14 day TAT     Interview     Interview     Interview     Interview     Interview       F. LAB USE ONLY: Custody Seals In Place: Yes / No     I Temp Blank: Yes / No     I Temp Blank: Yes / No     I Model Stample Stample		BPSOU-UR01SS07-110321-2	7			-	soil	×	×		-	+			
Pioneer Technical Services     Jesse Sims/PTS     11/8/2021     1600     M     M     M     M       Overnight     Ship Date: 11/8/21     It/11/71     D     It/11/71     D       VA 7 8 93 4 6 4 3 8     6 4 3 8     6 4 3 8     It/11/71     D       I: "Maximum 14 day TAT     It mp Blank: Yes / No     I coller Temp on Receipt:     "F/C     T rip Blank: Yes / No     MSNSD Sample Submitted 'Yes / No	Pioneer Technical Services     Jesse Sims/PTS     T1/8/2021     1600     M     M       Overnight     Ship Date: 11/8/21     Interview     Interview     Interview     Interview       VAZ 7 8 93 34     6 4 3 34     6 4 3 34     6 4 3 34     Interview     Interview       Interview     Interview     Interview     Interview     Interview     Interview       Interview     Interview     Interview     Interview     Interview     Interview	Samp		Relinquis	hed By / Al	filiatio	_	_	Date	Time		Acc	epted By / A	ffiliation	Date	Time
vernight Ship Date: 1/8/21	vernight Ship Date: 1/8/21 <u> </u>	Samp		Jesse Sims/PTS				1	1/8/2021		/	7	101	J.	12/11/12	K K
リスフタイ3 (6 イス名) : *Maximum 14 day TAT E - LAB USE ONLY: Custody Seats In Place: Yes / No   Temp Blank: Yes / No   Cooler Temp on Receipt: **/C   Trip Blank: Yes / No	サスフタ 993 5 (6 サス 8) : * * * * * * * * * * * * * * * * * * *	Ship .									}	∮		3		2000
•Maximum 14 day TAT - LAB USE ONLY: Custody Seals In Place: Yes / No   Temp Blank: Yes / No   Cooler Temp on Receipt:9F/C   Trip Blank: Yes / No	*Maximum 14 day TAT - LAB USE ONLY: Custody Seals In Place: Yes / No   Temp Blank: Yes / No   MS/MSD Sample S - LAB USE ONLY: Custody Seals In Place: Yes / No   Temp Blank: Yes / No   MS/MSD Sample S	Shipn	4278 9934													
Temp Blank: Yes / No   Cooler Temp on Receipt:	Temp Blank: Yes / No   Cooler Temp on Receipt:	Spec									ļ					T
			THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No	-	es / No	Coole	Temp	on Rec	eipt:	Ů	F/C	Trip Blar	k: Yes / No	MS/MSL	Sample Submitted: Vec / Me	T

## Proprietary and Confidential Property of BP and its Affiliates

	Pace Analyti	cal <sup>°</sup> Sampl	Document Name: Sample Condition Upon Receipt (SCUR) - ESI					Document Revised: 12Aug2020 Page 1 of 1			
	/		ENV-		iment No <b>11N4-01</b> 4		01	Pa		lytical Services nneapolis	-
Sample Co Upon Recei		e:			Pro	ject #:					
Tech Sp		manni	) )					)#:1	05	87272	2
Courier:	☐ Fed Ex ☐ Pace		mercial					JMA ENT: BP-		Due Date: 1 ER	1/24/21
Tracking N	lumber: <u>427899</u>	346428			ee Exceptic NV-FRM-MI					a	87 - 1
Custody Se	eal on Cooler/Box Prese	nt? Ves 🗆 No	o	Sea	is Intact?	ŹÝ	es 🗌 No	Biolo	gical Tis	sue Frozen? 🔲	Yes No N/A
Packing Ma	aterial: 🖾 Bubble Wr	ap Bubble Bags	匃	None	[]]Othe	er:			Те	emp Blank? 🔎	Yes 🗌 No
Thermomet	ter:	Т2(1336) [⁄]Т3(0459) Г5(0489)	1	Cype of Ic		Wet	Blue	None	Dŋ	y 🗌 Melted	
Temp should b	e above freezing to 6°C	Cooler Temp Read	w/tem	p blank:		3:5		0C		ge Corrected (no temp blank	See Exceptions
Correction F	actor: <u>-0 *  </u> Co	oler Temp Corrected v	v/temp	biank :		Rº0	Ý	0C	only):		ENV-FRM-MIN4-0142
Did samples of	ated Soii: ( 🔄 N/A, wate originate in a quarantine C, NM, NY, OK, OR, SC, TN If Yes to either o	zone within the United	)? 🗌	]Yes	<b>No</b>	Did Hav	samples orig vaii and Pueri	inate from a to Rico)?	foreign s	Contents: ource (internation: YesNo OC paperwork.	II- II - 21 ally, including
Chain of Custo	du Dresent and Filled Ou		-						COMN	IENTS:	
	ody Present and Filled Ou ody Relinguished?		ØYes ØYes			1. 2.					
	e and/or Signature on CO	C?	Ves		□n/A	3.					
Samples Arriv	ed within Hold Time?		Yes	□No		4.				······································	
Short Hold Tir	me Analysis (<72 hr)?		Yes			5. [	Fecal Colifor	rm 🗌 HPC 🗌 Nitrate 🥅 N	Total Coli	iform/E coli 🔲 BOD)	CBOD 🗌 Hex Chrome
	ound Time Requested?		∕ZŸes	No		6.					
Sufficient Samp	ole Volume? Provided for MS/MSD (if m	ore than 10 camples)?	∑ Yes ☐Yes	□No ⊉∕No	□n/a	7.					
Correct Contai		ore than to samples !!	<u>∐ Tes</u> ⊉Ÿes			8.					
	ainers Used?		Yes /				<del></del>				
Containers Int	act? Volume Received for Diss	olyad Tasts?	ØYes □Yes	_ <u>No</u>	ØN/A	9.	1		It		
	rmation available to reconcil				J <u>LIN/A</u>	10. 11. if	no, write ID/			ed container?	Yes Vo See Exception
		e the samples to the COC	<u>,e r</u> es				,				ENV-FRM-MIN4-0142
	néeding acid/base preser	vation have been				12. Sa	mple #				
checked?			Yes	□No	,∕⊡n/a		•				
compliance wit	needing preservation are th EPA recommendation <2pH, NaOH >9 Sulfide, I	)	Yes	□No	,ÉN/A		🗌 NaOH	Пн	INO₃	H <sub>2</sub> SO <sub>4</sub>	Zinc Acetate
	OA, Coliform, TOC/DOC Oi		Yes	ΠNο	ØN/A	Positi	ve for Res. [	Yes			See Exception
DRO/8015 (wa	iter) and Dioxin/PFAS *If a	dding preservative to			1	Chlori		No	pH Pap	per Lot#	ENV-FRM-MIN4-0142
a container it m	nust be added to associated	l field and equipment bla	nks (ver	ify with P	PM first)	Res. C	hlorine	0-6 Roll		0-6 Strip	0-14 Strip
Headspace in V	esent on soil VOA or WID /OA Vials (greater than 61	nm)?	□Yes □Yes	No No		13.		•			See Exception ENV-FRM-MIN4-0140
3 Trip Blanks P Trip Blank Cust	resent? tody Seals Present?		∐Yes ∐Yes	□ No □ No	⊠n/a ⊠n/a	14.	Pace Trip Bla	ınk Lot # (if	purchase	ed):	
	must be maintained at <6°C du		/		4		SOLUTION			d Data Required	Yes No
Opened Time: 🤗	350 Temp: 8-3	Corrected Temp: 8-4	Pe	rson Co	ntacted:				Date	e/Time:	
Time:	put in cooler		Co	mments	s/Resolut	ion: N	lotified c	of tempe	rature	t	
Time: 91	0 Temp: 8-3	Corrected Temp: 원년		• · · ·							
	nager Review: r there is a discrepance of the second se		piiance	samples,	a copy of	this forr	n will be sent	Date to the Nort		VI5/2021 DEHNR Certificat	ion Office ( i.e out of

Labeled by: $( \langle Y \rangle)$		e-0	(-7)	Page 30 of 3
	Labeled by:	70	(Y	

From:	Jennifer Anderson
То:	Scott Sampson
Cc:	Laura Moon
Subject:	RE: Temperature - BPSOU Unreclaimed Sampling Pace Projects 10587272 / 10587273
Date:	Friday, November 12, 2021 4:14:00 PM
Attachments:	image001.png
	image002.png

Sounds good, thank you Scott! We will proceed with the analyses.

# Jennifer Anderson, PMP

Project Manager | Pace Environmental Sciences Direct 612.607.6436 | Main 612.607.6400

Pace Analytical Services will be closed Thursday, November 25<sup>th</sup> and Friday, November 26<sup>th</sup> for the Thanksgiving Holiday. Please coordinate with your project manager to schedule any rush or short hold analyses around these dates.

From: Scott Sampson <ssampson@Pioneer-technical.com>
Sent: Friday, November 12, 2021 11:18 AM
To: Jennifer Anderson <Jennifer.Anderson@pacelabs.com>
Cc: Laura Moon <Imoon@pioneer-technical.com>
Subject: RE: Temperature - BPSOU Unreclaimed Sampling Pace Projects 10587272 / 10587273

CAUTION: This email originated from outside Pace Analytical. Do not click links or open attachments unless you recognize the sender and know the content is safe. Jennifer,

Thank you for the notification. FedEx is making things challenging...

Please proceed with analysis of samples on both COCs.

Thanks, Scott

From: Jennifer Anderson <Jennifer.Anderson@pacelabs.com>
Sent: Friday, November 12, 2021 6:41 AM
To: Scott Sampson <ssampson@Pioneer-technical.com>
Subject: Temperature - BPSOU Unreclaimed Sampling Pace Projects 10587272 / 10587273

Good Morning Scott,

We received the samples for the attached COCs yesterday and it was noted that the samples were over 6 degrees Celsius. The temperature was noted to be 8.4 degrees Celsius. The 6010 metals are not temperature sensitive, but mercury in soils is temperature sensitive.

We can plan to proceed and qualify accordingly, please let me know if it would be preferred to not

proceed with either of these.

Thank you, Jennifer

# Jennifer Anderson, PMP

Project Manager | Pace Environmental Sciences 1700 Elm Street SE Suite 200, Minneapolis, MN 55414 Direct 612.607.6436 | Main 612.607.6400

Pace Analytical Services will be closed Thursday, November 25<sup>th</sup> and Friday, November 26<sup>th</sup> for the Thanksgiving Holiday. Please coordinate with your project manager to schedule any rush or short hold analyses around these dates.

Please let your Project Manager know if your project is related to a permit or if your permit has recently been updated.

Pace Analytical\*

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November 22, 2021

Scott Sampson Pioneer Technical Services 1101 S. Montana Street Butte, MT 59701

RE: Project: BPSOU Unreclaimed Sampling Pace Project No.: 10587273

Dear Scott Sampson:

Enclosed are the analytical results for sample(s) received by the laboratory on November 11, 2021. The results relate only to the samples included in this report. Results contained within this report conform to the most current version of the TNI standards, BP LaMP Technical Requirements Revision 12.1, and any applicable Quality Assurance Project Plan (QAPP), or Work Plan unless otherwise narrated in the body of this report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network: • Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Inder

Jennifer Anderson jennifer.anderson@pacelabs.com (612)607-6436 Project Manager

Enclosures





Pace Analytical Services, LLC 1700 Elm Street Minneapolis, MN 55414 (612)607-1700

#### CERTIFICATIONS

Project: BPSOU Unreclaimed Sampling Pace Project No.: 10587273

#### Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414 A2LA Certification #: 2926.01\* 1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab Alabama Certification #: 40770 Alaska Contaminated Sites Certification #: 17-009\* Alaska DW Certification #: MN00064 Arizona Certification #: AZ0014\* Arkansas DW Certification #: MN00064 Arkansas WW Certification #: 88-0680 California Certification #: 2929 Colorado Certification #: MN00064 Connecticut Certification #: PH-0256 EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137 Florida Certification #: E87605\* Georgia Certification #: 959 Hawaii Certification #: MN00064 Idaho Certification #: MN00064 Illinois Certification #: 200011 Indiana Certification #: C-MN-01 Iowa Certification #: 368 Kansas Certification #: E-10167 Kentucky DW Certification #: 90062 Kentucky WW Certification #: 90062 Louisiana DEQ Certification #: AI-03086\* Louisiana DW Certification #: MN00064 Maine Certification #: MN00064\* Maryland Certification #: 322 Michigan Certification #: 9909 Minnesota Certification #: 027-053-137\* Minnesota Dept of Ag Approval: via MN 027-053-137 Minnesota Petrofund Registration #: 1240\* Mississippi Certification #: MN00064

Missouri Certification #: 10100 Montana Certification #: CERT0092 Nebraska Certification #: NE-OS-18-06 Nevada Certification #: MN00064 New Hampshire Certification #: 2081\* New Jersey Certification #: MN002 New York Certification #: 11647\* North Carolina DW Certification #: 27700 North Carolina WW Certification #: 530 North Dakota Certification #: R-036 Ohio DW Certification #: 41244 Ohio VAP Certification (1700) #: CL101 Ohio VAP Certification (1800) #: CL110\* Oklahoma Certification #: 9507\* Oregon Primary Certification #: MN300001 Oregon Secondary Certification #: MN200001\* Pennsylvania Certification #: 68-00563\* Puerto Rico Certification #: MN00064 South Carolina Certification #:74003001 Tennessee Certification #: TN02818 Texas Certification #: T104704192\* Utah Certification #: MN00064\* Vermont Certification #: VT-027053137 Virginia Certification #: 460163\* Washington Certification #: C486\* West Virginia DEP Certification #: 382 West Virginia DW Certification #: 9952 C Wisconsin Certification #: 999407970 Wyoming UST Certification #: via A2LA 2926.01 USDA Permit #: P330-19-00208 \*Please Note: Applicable air certifications are denoted with an asterisk (\*).



#### SAMPLE SUMMARY

Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10

10587273

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10587273001	BPSOU-UR05SS02-110421-1	Solid	11/04/21 09:20	11/11/21 08:50
10587273002	BPSOU-UR05SS02-110421-1-FD	Solid	11/04/21 09:25	11/11/21 08:50
10587273003	BPSOU-UR05SS02-110421-2	Solid	11/04/21 09:15	11/11/21 08:50
10587273004	BPSOU-UR05SS02-110421-3	Solid	11/04/21 09:10	11/11/21 08:50
10587273005	BPSOU-UR05SS03-110421-1	Solid	11/04/21 09:45	11/11/21 08:50
10587273006	BPSOU-UR05SS03-110421-2	Solid	11/04/21 09:40	11/11/21 08:50
10587273007	BPSOU-UR05SS03-110421-3	Solid	11/04/21 09:35	11/11/21 08:50
10587273008	BPSOU-UR05SS04-110421-1	Solid	11/04/21 09:10	11/11/21 08:50
10587273009	BPSOU-UR05SS04-110421-2	Solid	11/04/21 09:05	11/11/21 08:50
10587273010	BPSOU-UR05SS04-110421-3	Solid	11/04/21 09:00	11/11/21 08:50
10587273011	BPSOU-UR05SS05-110421-1	Solid	11/04/21 10:10	11/11/21 08:50
10587273012	BPSOU-UR05SS05-110421-2	Solid	11/04/21 10:05	11/11/21 08:50
10587273013	BPSOU-UR05SS05-110421-3	Solid	11/04/21 10:00	11/11/21 08:50
10587273014	BPSOU-UR01SS07-110321-3	Solid	11/03/21 10:35	11/11/21 08:50



# SAMPLE ANALYTE COUNT

Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587273

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10587273001		EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
0587273002	BPSOU-UR05SS02-110421-1-FD	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
0587273003	BPSOU-UR05SS02-110421-2	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
)587273004	BPSOU-UR05SS02-110421-3	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
0587273005	BPSOU-UR05SS03-110421-1	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
0587273006	BPSOU-UR05SS03-110421-2	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
587273007	BPSOU-UR05SS03-110421-3	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
587273008	BPSOU-UR05SS04-110421-1	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
0587273009	BPSOU-UR05SS04-110421-2	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
0587273010	BPSOU-UR05SS04-110421-3	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
587273011	BPSOU-UR05SS05-110421-1	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
0587273012	BPSOU-UR05SS05-110421-2	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
0587273013	BPSOU-UR05SS05-110421-3	EPA 6010D	DM	5



#### SAMPLE ANALYTE COUNT

Project:BPSOU Unreclaimed SamplingPace Project No.:10587273

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1
10587273014	BPSOU-UR01SS07-110321-3	EPA 6010D	DM	5
		EPA 7471B	LMW	1
		ASTM D2974	JDL	1

PASI-M = Pace Analytical Services - Minneapolis



#### **PROJECT NARRATIVE**

Project: BPSOU Unreclaimed Sampling

#### Pace Project No.: 10587273

Method:EPA 6010DDescription:6010D MET ICPClient:BPAR-PIONEER-MTDate:November 22, 2021

#### **General Information:**

14 samples were analyzed for EPA 6010D by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

#### Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Sample Preparation:

The samples were prepared in accordance with EPA 3050B with any exceptions noted below.

#### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

#### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### QC Batch: 783304

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10587272001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 4170175)
  - Zinc

QC Batch: 783305

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10587273002

P6: Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

- MS (Lab ID: 4170178)
  - Arsenic
  - Copper
  - Lead
  - Zinc
- MSD (Lab ID: 4170179)
  - Arsenic
  - Copper
  - Lead



#### **PROJECT NARRATIVE**

Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587273

 Method:
 EPA 6010D

 Description:
 6010D MET ICP

 Client:
 BPAR-PIONEER-MT

 Date:
 November 22, 2021

QC Batch: 783305

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10587273002

P6: Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

Zinc

Additional Comments:



#### **PROJECT NARRATIVE**

Project: BPSOU Unreclaimed Sampling

#### Pace Project No.: 10587273

Method:EPA 7471BDescription:7471B MercuryClient:BPAR-PIONEER-MTDate:November 22, 2021

#### **General Information:**

14 samples were analyzed for EPA 7471B by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

#### Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Sample Preparation:

The samples were prepared in accordance with EPA 7471B with any exceptions noted below.

#### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

#### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### QC Batch: 783306

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10587272001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4170182)
  - Mercury
- MSD (Lab ID: 4170183)
  - Mercury

#### Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587273

Sample: BPSOU-UR05SS02-11042	1- Lab ID:	10587273001	Collected	l: 11/04/21	09:20	Received: 11/	11/21 08:50 M	atrix: Solid	
Results reported on a "dry weight"	' basis and are	e adjusted for	percent mo	isture, sar	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prepa	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	- Minneapol	is					
Arsenic	161	mg/kg	2.2	0.34	2	11/12/21 14:18	11/17/21 13:12	7440-38-2	
Cadmium	4.7	mg/kg	0.34	0.076	2	11/12/21 14:18	11/17/21 13:12	7440-43-9	
Copper	359	mg/kg	1.1	0.16	2	11/12/21 14:18	11/17/21 13:12	7440-50-8	
Lead	636	mg/kg	1.1	0.23	2	11/12/21 14:18	11/17/21 13:12	7439-92-1	
Zinc	1520	mg/kg	4.5	0.50	2	11/12/21 14:18	11/17/21 13:12	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prepa	aration Met	nod: EF	PA 7471B			
-	Pace Anal	ytical Services	- Minneapol	is					
Mercury	0.25	mg/kg	0.021	0.0091	1	11/12/21 15:07	11/21/21 11:47	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapol	is					
Percent Moisture	13.4	%	0.10	0.10	1		11/16/21 13:36		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587273

Sample: BPSOU-UR05SS02-11042 1-FD	1- Lab ID:	10587273002	Collected	: 11/04/21	09:25	Received: 11/	(11/21 08:50 M	atrix: Solid	
Results reported on a "dry weight"	basis and are	adjusted for p	percent mo	isture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prepa	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	Minneapoli	is					
Arsenic	203	mg/kg	2.0	0.31	2	11/12/21 14:18	11/18/21 12:57	7440-38-2	P6
Cadmium	4.6	mg/kg	0.30	0.069	2	11/12/21 14:18	11/18/21 12:57	7440-43-9	
Copper	519	mg/kg	1.0	0.15	2	11/12/21 14:18	11/18/21 12:57	7440-50-8	P6
Lead	630	mg/kg	1.0	0.21	2	11/12/21 14:18	11/18/21 12:57	7439-92-1	P6
Zinc	1720	mg/kg	4.1	0.45	2	11/12/21 14:18	11/18/21 12:57	7440-66-6	P6
7471B Mercury	Analytical	Method: EPA 74	471B Prepa	aration Metl	nod: EF	PA 7471B			
-	Pace Anal	vtical Services	Minneapoli	is					
Mercury	0.20	mg/kg	0.019	0.0081	1	11/12/21 15:07	11/21/21 10:47	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	Minneapoli	is					
Percent Moisture	5.1	%	0.10	0.10	1		11/16/21 13:37		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587273

Sample: BPSOU-UR05SS02-11042	21- Lab ID:	10587273003	Collected	: 11/04/21	09:15	Received: 11/	11/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight	" basis and are	adjusted for	percent moi	isture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prepa	ration Met	nod: Ef	PA 3050B			
	Pace Anal	ytical Services	- Minneapoli	s					
Arsenic	145	mg/kg	2.0	0.30	2	11/12/21 14:18	11/18/21 13:09	7440-38-2	
Cadmium	3.6	mg/kg	0.30	0.068	2	11/12/21 14:18	11/18/21 13:09	7440-43-9	
Copper	658	mg/kg	0.99	0.14	2	11/12/21 14:18	11/18/21 13:09	7440-50-8	
Lead	639	mg/kg	0.99	0.20	2	11/12/21 14:18	11/18/21 13:09	7439-92-1	
Zinc	1380	mg/kg	4.0	0.44	2	11/12/21 14:18	11/18/21 13:09	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prepa	ration Metl	nod: EF	PA 7471B			
-	Pace Anal	ytical Services	- Minneapoli	s					
Mercury	0.31	mg/kg	0.020	0.0086	1	11/12/21 15:07	11/21/21 10:52	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapoli	s					
Percent Moisture	5.7	%	0.10	0.10	1		11/16/21 13:37		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587273

Sample: BPSOU-UR05SS02-11042	1- Lab ID:	10587273004	Collected	: 11/04/21	09:10	Received: 11/	11/21 08:50 M	atrix: Solid	
Results reported on a "dry weight"	' basis and are	adjusted for	percent moi	isture, san	nple siz	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prepa	ration Met	nod: EF	PA 3050B			
	Pace Anal	ytical Services	- Minneapoli	s					
Arsenic	62.3	mg/kg	2.7	0.41	2	11/12/21 14:18	11/18/21 13:10	7440-38-2	
Cadmium	3.8	mg/kg	0.40	0.090	2	11/12/21 14:18	11/18/21 13:10	7440-43-9	
Copper	235	mg/kg	1.3	0.19	2	11/12/21 14:18	11/18/21 13:10	7440-50-8	
Lead	756	mg/kg	1.3	0.27	2	11/12/21 14:18	11/18/21 13:10	7439-92-1	
Zinc	1500	mg/kg	5.3	0.59	2	11/12/21 14:18	11/18/21 13:10	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prepa	ration Metl	nod: EF	PA 7471B			
	Pace Anal	ytical Services	- Minneapoli	s					
Mercury	0.26	mg/kg	0.026	0.011	1	11/12/21 15:07	11/21/21 10:54	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapoli	s					
Percent Moisture	26.8	%	0.10	0.10	1		11/16/21 13:37		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587273

Sample: BPSOU-UR05SS03-11042	1- Lab ID:	10587273005	Collected	: 11/04/21	09:45	Received: 11/	/11/21 08:50 M	atrix: Solid	
Results reported on a "dry weight"	basis and are	e adjusted for	percent moi	isture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prepa	ration Met	nod: EF	PA 3050B			
	Pace Anal	ytical Services	- Minneapoli	S					
Arsenic	234	mg/kg	2.5	0.38	2	11/12/21 14:18	11/18/21 13:12	7440-38-2	
Cadmium	8.7	mg/kg	0.37	0.084	2	11/12/21 14:18	11/18/21 13:12	7440-43-9	
Copper	1120	mg/kg	1.2	0.18	2	11/12/21 14:18	11/18/21 13:12	7440-50-8	
Lead	1980	mg/kg	1.2	0.25	2	11/12/21 14:18	11/18/21 13:12	7439-92-1	
Zinc	2450	mg/kg	4.9	0.55	2	11/12/21 14:18	11/18/21 13:12	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prepa	ration Meth	nod: EF	PA 7471B			
	Pace Anal	ytical Services	- Minneapoli	s					
Mercury	0.80	mg/kg	0.024	0.010	1	11/12/21 15:07	11/21/21 10:55	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapoli	s					
Percent Moisture	23.0	%	0.10	0.10	1		11/16/21 13:37		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587273

Sample: BPSOU-UR05SS03-11042	1- Lab ID:	10587273006	Collected	: 11/04/21	09:40	Received: 11/	(11/21 08:50 M	atrix: Solid	
Results reported on a "dry weight"	basis and are	e adjusted for p	percent mo	isture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prepa	aration Met	hod: Ef	PA 3050B			
	Pace Anal	ytical Services	- Minneapoli	s					
Arsenic	145	mg/kg	2.1	0.32	2	11/12/21 14:18	11/18/21 13:14	7440-38-2	
Cadmium	5.3	mg/kg	0.31	0.070	2	11/12/21 14:18	11/18/21 13:14	7440-43-9	
Copper	49500	mg/kg	25.8	3.8	50	11/12/21 14:18	11/18/21 13:45	7440-50-8	
Lead	1190	mg/kg	1.0	0.21	2	11/12/21 14:18	11/18/21 13:14	7439-92-1	
Zinc	1840	mg/kg	4.1	0.46	2	11/12/21 14:18	11/18/21 13:14	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prepa	ration Metl	hod: EF	PA 7471B			
-	Pace Anal	ytical Services	- Minneapoli	s					
Mercury	0.45	mg/kg	0.020	0.0088	1	11/12/21 15:07	11/21/21 10:57	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapoli	s					
Percent Moisture	7.8	%	0.10	0.10	1		11/16/21 13:37		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587273

Sample: BPSOU-UR05SS03-11042	1- Lab ID:	10587273007	Collected	: 11/04/21	09:35	Received: 11/	11/21 08:50 M	atrix: Solid	
Results reported on a "dry weight"	basis and are	e adjusted for	percent moi	isture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prepa	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	- Minneapoli	s					
Arsenic	117	mg/kg	2.3	0.34	2	11/12/21 14:18	11/18/21 13:15	7440-38-2	
Cadmium	4.0	mg/kg	0.34	0.077	2	11/12/21 14:18	11/18/21 13:15	7440-43-9	
Copper	426	mg/kg	1.1	0.16	2	11/12/21 14:18	11/18/21 13:15	7440-50-8	
Lead	944	mg/kg	1.1	0.23	2	11/12/21 14:18	11/18/21 13:15	7439-92-1	
Zinc	1630	mg/kg	4.5	0.50	2	11/12/21 14:18	11/18/21 13:15	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prepa	ration Met	hod: EF	PA 7471B			
	Pace Anal	ytical Services	- Minneapoli	s					
Mercury	0.65	mg/kg	0.023	0.010	1	11/12/21 15:07	11/21/21 11:02	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
-	Pace Anal	ytical Services	- Minneapoli	S					
Percent Moisture	17.0	%	0.10	0.10	1		11/16/21 13:38		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587273

Sample: BPSOU-UR05SS04-11042	1- Lab ID:	10587273008	Collected	d: 11/04/21	09:10	Received: 11/	11/21 08:50 M	atrix: Solid	
Results reported on a "dry weight"	' basis and are	e adjusted for <sub>l</sub>	percent mo	oisture, sar	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	- Minneapo	lis					
Arsenic	37.9	mg/kg	2.0	0.31	2	11/12/21 14:18	11/18/21 13:17	7440-38-2	
Cadmium	1.6	mg/kg	0.30	0.069	2	11/12/21 14:18	11/18/21 13:17	7440-43-9	
Copper	248	mg/kg	1.0	0.15	2	11/12/21 14:18	11/18/21 13:17	7440-50-8	
Lead	216	mg/kg	1.0	0.21	2	11/12/21 14:18	11/18/21 13:17	7439-92-1	
Zinc	506	mg/kg	4.0	0.45	2	11/12/21 14:18	11/18/21 13:17	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prep	aration Met	hod: El	PA 7471B			
-	Pace Anal	ytical Services	- Minneapo	lis					
Mercury	0.15	mg/kg	0.019	0.0082	1	11/12/21 15:07	11/21/21 11:04	7439-97-6	
Dry Weight / %M by ASTM D2974		Method: ASTM ytical Services		lis					
Percent Moisture	4.0	%	0.10	0.10	1		11/16/21 13:38		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587273

Sample: BPSOU-UR05SS04-11042	1- Lab ID:	10587273009	Collected	l: 11/04/21	09:05	Received: 11/	11/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight"	basis and are	adjusted for p	percent mo	isture, san	nple si	ize and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prepa	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	Minneapol	is					
Arsenic	35.5	mg/kg	2.3	0.35	2	11/12/21 14:18	11/18/21 13:19	7440-38-2	
Cadmium	1.6	mg/kg	0.34	0.078	2	11/12/21 14:18	11/18/21 13:19	7440-43-9	
Copper	250	mg/kg	1.1	0.17	2	11/12/21 14:18	11/18/21 13:19	7440-50-8	
Lead	571	mg/kg	1.1	0.24	2	11/12/21 14:18	11/18/21 13:19	7439-92-1	
Zinc	646	mg/kg	4.6	0.51	2	11/12/21 14:18	11/18/21 13:19	7440-66-6	
7471B Mercury	Analytical	Method: EPA 74	471B Prepa	aration Met	nod: El	PA 7471B			
	Pace Anal	ytical Services	Minneapol	is					
Mercury	0.16	mg/kg	0.022	0.0097	1	11/12/21 15:07	11/21/21 11:05	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	Minneapol	is					
Percent Moisture	15.9	%	0.10	0.10	1		11/16/21 13:38		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587273

Sample: BPSOU-UR05SS04-11042 3	1- Lab ID:	10587273010	Collected	d: 11/04/21	09:00	Received: 11/	11/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight"	basis and are	e adjusted for p	percent mo	oisture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	Minneapo	lis					
Arsenic	47.3	mg/kg	2.2	0.33	2	11/12/21 14:18	11/18/21 13:20	7440-38-2	
Cadmium	3.3	mg/kg	0.32	0.074	2	11/12/21 14:18	11/18/21 13:20	7440-43-9	
Copper	238	mg/kg	1.1	0.16	2	11/12/21 14:18	11/18/21 13:20	7440-50-8	
Lead	812	mg/kg	1.1	0.22	2	11/12/21 14:18	11/18/21 13:20	7439-92-1	
Zinc	1180	mg/kg	4.3	0.48	2	11/12/21 14:18	11/18/21 13:20	7440-66-6	
7471B Mercury	Analytical	Method: EPA 74	471B Prepa	aration Met	nod: El	PA 7471B			
-	-	ytical Services							
Mercury	0.26	mg/kg	0.020	0.0088	1	11/12/21 15:07	11/21/21 11:07	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	Minneapo	lis					
Percent Moisture	10	%	0.10	0.10	1		11/16/21 13:38		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587273

Sample: BPSOU-UR05SS05-11042 1	1- Lab ID:	10587273011	Collected	d: 11/04/21	10:10	Received: 11/	11/21 08:50 M	atrix: Solid	
Results reported on a "dry weight"	' basis and are	e adjusted for	percent mo	oisture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	- Minneapo	lis					
Arsenic	12.2	mg/kg	2.0	0.31	2	11/12/21 14:18	11/18/21 13:22	7440-38-2	
Cadmium	0.68	mg/kg	0.30	0.069	2	11/12/21 14:18	11/18/21 13:22	7440-43-9	
Copper	214	mg/kg	1.0	0.15	2	11/12/21 14:18	11/18/21 13:22	7440-50-8	
Lead	43.2	mg/kg	1.0	0.21	2	11/12/21 14:18	11/18/21 13:22	7439-92-1	
Zinc	206	mg/kg	4.0	0.45	2	11/12/21 14:18	11/18/21 13:22	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prep	aration Met	nod: El	PA 7471B			
-	Pace Anal	ytical Services	- Minneapo	lis					
Mercury	0.029	mg/kg	0.019	0.0081	1	11/12/21 15:07	11/21/21 11:08	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapo	lis					
Percent Moisture	5.9	%	0.10	0.10	1		11/16/21 13:38		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587273

Sample: BPSOU-UR05SS05-11042	1- Lab ID:	10587273012	Collected	d: 11/04/21	10:05	Received: 11/	(11/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight"	basis and are	e adjusted for	percent mo	oisture, sar	nple si	ize and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	- Minneapo	lis					
Arsenic	9.3	mg/kg	0.99	0.15	1	11/12/21 14:18	11/18/21 13:41	7440-38-2	
Cadmium	0.27	mg/kg	0.15	0.034	1	11/12/21 14:18	11/18/21 13:41	7440-43-9	
Copper	151	mg/kg	0.50	0.072	1	11/12/21 14:18	11/18/21 13:41	7440-50-8	
Lead	26.6	mg/kg	0.99	0.20	2	11/12/21 14:18	11/18/21 13:27	7439-92-1	
Zinc	58.3	mg/kg	2.0	0.22	1	11/12/21 14:18	11/18/21 13:41	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prep	aration Met	nod: El	PA 7471B			
-	Pace Anal	ytical Services	- Minneapo	lis					
Mercury	0.038	mg/kg	0.019	0.0082	1	11/12/21 15:07	11/21/21 11:10	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapo	lis					
Percent Moisture	3.9	%	0.10	0.10	1		11/16/21 13:39		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587273

Sample: BPSOU-UR05SS05-11042	1- Lab ID:	10587273013	Collected	: 11/04/21	10:00	Received: 11/	(11/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight"	' basis and are	adjusted for	percent mo	isture, san	nple si	ze and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prepa	aration Met	hod: Ef	PA 3050B			
	Pace Anal	ytical Services	- Minneapoli	S					
Arsenic	19.9	mg/kg	2.0	0.30	2	11/12/21 14:18	11/18/21 13:29	7440-38-2	
Cadmium	0.32	mg/kg	0.30	0.067	2	11/12/21 14:18	11/18/21 13:29	7440-43-9	
Copper	146	mg/kg	0.99	0.14	2	11/12/21 14:18	11/18/21 13:29	7440-50-8	
Lead	28.3	mg/kg	0.99	0.20	2	11/12/21 14:18	11/18/21 13:29	7439-92-1	
Zinc	85.0	mg/kg	3.9	0.44	2	11/12/21 14:18	11/18/21 13:29	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prepa	aration Met	hod: EF	PA 7471B			
	Pace Anal	ytical Services	- Minneapoli	S					
Mercury	0.068	mg/kg	0.019	0.0084	1	11/12/21 15:07	11/21/21 11:12	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapoli	s					
Percent Moisture	3.5	%	0.10	0.10	1		11/16/21 13:39		N2



Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587273

Sample: BPSOU-UR01SS07-11032 3	1- Lab ID:	10587273014	Collected	d: 11/03/21	10:35	Received: 11/	11/21 08:50 Ma	atrix: Solid	
Results reported on a "dry weight"	' basis and are	adjusted for	percent mo	oisture, san	nple si	ize and any dilut	ions.		
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3050B			
	Pace Anal	ytical Services	- Minneapo	lis					
Arsenic	2.3	mg/kg	1.0	0.15	1	11/12/21 14:18	11/18/21 13:43	7440-38-2	
Cadmium	0.093J	mg/kg	0.15	0.034	1	11/12/21 14:18	11/18/21 13:43	7440-43-9	
Copper	25.9	mg/kg	0.51	0.074	1	11/12/21 14:18	11/18/21 13:43	7440-50-8	
Lead	4.3	mg/kg	1.0	0.21	2	11/12/21 14:18	11/18/21 13:33	7439-92-1	
Zinc	38.6	mg/kg	2.0	0.23	1	11/12/21 14:18	11/18/21 13:43	7440-66-6	
7471B Mercury	Analytical	Method: EPA 7	471B Prep	aration Met	hod: El	PA 7471B			
-	Pace Anal	ytical Services	Minneapo	lis					
Mercury	<0.0083	mg/kg	0.019	0.0083	1	11/12/21 15:07	11/21/21 11:13	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical	Method: ASTM	D2974						
	Pace Anal	ytical Services	- Minneapo	lis					
Percent Moisture	7.6	%	0.10	0.10	1		11/16/21 13:39		N2



	10587273											
QC Batch:	783306		Anal	ysis Metho	od:	EPA 7471B						
QC Batch Method:	EPA 7471B			, ysis Desci		7471B Mero	cury Solids					
				pratory:	•	Pace Analy			apolis			
Associated Lab Sam	ples: 105872730	01										
METHOD BLANK:	4170180			Matrix: S	Solid							
Associated Lab Sam	ples: 105872730	01										
			Bla	nk	Reporting							
Param	eter	Units	Res	sult	Limit	MD	L	Analyzed	Q	ualifiers	5	
Mercury		mg/kg	<	:0.0079	0.01	8 (	0.0079 1	1/21/21 11	:20			
LABORATORY CON Param		4170181 Units	Spike Conc.		CS esult	LCS % Rec	% R Lim		Qualifiers			
Mercury		mg/kg	0.4	47	0.48	10	2	80-120				
MATRIX SPIKE & M	ATRIX SPIKE DUPL	ICATE: 4170	-	MCD	4170183	3						
		10587272001	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Mercury	mg/kg	<0.010	0.61	0.58	0.49	0.45	78	76	80-120	8	20	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:	BPSOU	Unreclaimed S	ampling										
Pace Project No.:	1058727	3											
QC Batch:	783307			Analy	sis Metho	od:	EPA 7471B						
QC Batch Method:	EPA 74	71B		Analy	sis Desci	iption:	7471B Merc	ury Solids					
				Labo	atory:		Pace Analyt	ical Servic	es - Minnea	apolis			
Associated Lab Sam		,	10587273003 10587273010		,	,		,	,	587273008	8,		
METHOD BLANK:	4170184				Matrix: S	olid							
Associated Lab Sam		,	10587273003 10587273010	1058727	3011, 105	587273012,		,	, -	587273008	8,		
_				Blan		Reporting							
Param	neter		Units	Resu		Limit	MD	L	Analyzed	Qı	alifiers		
Mercury			mg/kg	<(	0.0081	0.01	19 (	0.0081 1	1/21/21 10:	44			
LABORATORY CON		MPLE: 417	0185										
				Spike	L	CS	LCS	% R	lec				
Param	neter		Units	Conc.	Re	sult	% Rec	Lim	its (	Qualifiers			
Mercury			mg/kg	0.4	7	0.48	10	2	80-120				
MATRIX SPIKE & M	IATRIX SF		ATE: 417018	36		417018	7						
				MS	MSD								
Parameter		10 Units		Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury		mg/kg	0.20	0.51	0.5	0.70	0.70	99	101	80-120	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



		Analysis Me	ethod:	EPA 601	DD			
QC Batch Method: EPA 3050B		Analysis De	escription:	6010D S	olids			
		Laboratory		Pace Ana	alytical Ser	vices - Minr	neapolis	
Associated Lab Samples: 1058727	'3001							
METHOD BLANK: 4170172		Matrix	c: Solid					
Associated Lab Samples: 1058727	′3001							
		Blank	Reporting	I				
Parameter	Units	Result	Limit	Ν	/IDL	Analyze	ed	Qualifiers
Arsenic	mg/kg	<0.15	5 0	.97	0.15	11/17/21 1	2:34	
Cadmium	mg/kg	<0.033	3 0	.15	0.033	11/17/21 1	2:34	
Copper	mg/kg	<0.071	0	.49	0.071	11/17/21 1	2:34	
Lead	mg/kg	<0.10	) 0	.49	0.10	11/17/21 1	2:34	
Zinc	mg/kg	<0.22	2	1.9	0.22	11/17/21 1	2:34	
	4170173							
LABORATORY CONTROL SAMPLE:		Calles	LCS	LCS	%	6 Rec		
LABORATORY CONTROL SAMPLE:		Spike				*	0	ers
LABORATORY CONTROL SAMPLE: Parameter	Units	Spike Conc.	Result	% Rec	L	imits	Qualifie	010
Parameter	Units	•	Result 42.8	% Rec	L 92	-imits 	Qualifie	
Parameter		Conc.		% Rec			Quaime	
	mg/kg	Conc. 46.7	42.8	% Rec	92	80-120	Quaime	
Parameter Arsenic Cadmium	mg/kg mg/kg	Conc. 46.7 46.7	42.8 46.4	% Rec	92 99	80-120 80-120	Quaime	

Parameter	Units	10587272001 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	3.7	65.2	64	54.5	53.2	78	77	75-125	2	20	
Cadmium	mg/kg	0.23	65.2	64	53.5	52.4	82	82	75-125	2	20	
Copper	mg/kg	68.6	65.2	64	123	122	84	83	75-125	1	20	
Lead	mg/kg	13.8	65.2	64	71.8	74.0	89	94	75-125	3	20	
Zinc	mg/kg	71.7	65.2	64	123	116	79	69	75-125	6	20	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:	BPSOU I	Unreclaimed	d Sampling										
Pace Project No.:	1058727	3											
QC Batch:	783305	;		Analy	sis Metho	d: I	EPA 6010D						
QC Batch Method:	EPA 30	50B		Analy	sis Descri	otion:	6010D Solid	s					
				Labor	atory:		Pace Analyti	cal Servic	es - Minnea	polis			
Associated Lab Sa			2, 1058727300 9, 1058727301	·	,	,		,	,	587273008	,		
METHOD BLANK:	4170176				Matrix: So	olid							
Associated Lab Sar			2, 1058727300 9, 1058727301	·	,	,		,	,	587273008	,		
				Blan	k	Reporting							
Parar	meter		Units	Resu	ılt	Limit	MDL	-	Analyzed	Qu	alifiers		
Arsenic			mg/kg		<0.15	0.9	6	0.15 1	1/18/21 12:5	53			
Cadmium			mg/kg	<	:0.033	0.1	4	0.033 1	1/18/21 12:5	53			
Copper			mg/kg		:0.070	0.4			1/18/21 12:5				
Lead			mg/kg		:0.099	0.4			1/18/21 12:5				
Zinc			mg/kg		<0.21	1.	9	0.21 1	1/18/21 12:5	53			
LABORATORY CO			170177	Spike	LC	s	LCS	% R	ec				
Para	meter		Units	Conc.	Res	-	% Rec	Lim		Qualifiers	_		
	meter		Units mg/kg	•	Res	-		Lim		Qualifiers	_		
Arsenic	meter		mg/kg mg/kg	Conc. 48.5 48.5	Res 5 5	46.5 49.5	% Rec 96 102	Lim	its 0 80-120 80-120	Qualifiers	_		
Arsenic Cadmium Copper	meter		mg/kg mg/kg mg/kg	Conc. 48.9 48.9 48.9	Res	46.5 49.5 48.0	% Rec 96 102 99	Lim 2	its 0 30-120 30-120 30-120	Qualifiers	_		
Arsenic Cadmium Copper Lead	meter		mg/kg mg/kg mg/kg mg/kg	Conc. 48.9 48.9 48.9 48.9	Res	46.5 49.5 48.0 48.5	% Rec 96 102 99 100	Lim	its C 80-120 80-120 80-120 80-120 80-120	Qualifiers	_		
Arsenic Cadmium Copper	meter		mg/kg mg/kg mg/kg	Conc. 48.9 48.9 48.9	Res	46.5 49.5 48.0	% Rec 96 102 99	Lim	its 0 30-120 30-120 30-120	Qualifiers	_		
Arsenic Cadmium Copper Lead			mg/kg mg/kg mg/kg mg/kg mg/kg CATE: 4170	Conc. 48.9 48.9 48.9 48.9 48.9 48.9 48.9 48.	Res 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	46.5 49.5 48.0 48.5 49.0 4170179	% Rec 96 102 99 100 101	Lim	its C 80-120 80-120 80-120 80-120 80-120 80-120		_	Maria	
Arsenic Cadmium Copper Lead Zinc	MATRIX SF		mg/kg mg/kg mg/kg mg/kg mg/kg	Conc. 48.9 48.9 48.9 48.9 48.9 178	Res	46.5 49.5 48.0 48.5 49.0	% Rec 96 102 99 100 101	Lim	its C 80-120 80-120 80-120 80-120 80-120	Qualifiers % Rec Limits	RPD	Max RPD	Qu
Arsenic Cadmium Copper Lead Zinc MATRIX SPIKE & M Paramete	MATRIX SF		mg/kg mg/kg mg/kg mg/kg mg/kg CATE: 4170	Conc. 48.9 48.9 48.9 48.9 48.9 48.9 48.9 48.	Res 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	46.5 49.5 48.0 48.5 49.0 4170179 MS	% Rec 96 102 99 100 101	Lim 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	tits C 80-120 80-120 80-120 80-120 80-120 80-120 MSD	% Rec	 RPD4		
Arsenic Cadmium Copper Lead Zinc MATRIX SPIKE & M Paramete Arsenic	MATRIX SF	Units	mg/kg mg/kg mg/kg mg/kg CATE: 4170 10587273002 Result	Conc. 48.9 48.9 48.9 48.9 48.9 48.9 48.9 48.	Res 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	46.5 49.5 48.0 48.5 49.0 4170179 MS Result	% Rec 96 102 95 100 101	MS % Rec	tts C 30-120 30-120 30-120 30-120 30-120 30-120 MSD % Rec	% Rec Limits		RPD 20	
Arsenic Cadmium Copper Lead Zinc MATRIX SPIKE & N	MATRIX SF	Units mg/kg	mg/kg mg/kg mg/kg mg/kg CATE: 4170 10587273002 Result 203	Conc. 48.9 48.9 48.9 48.9 48.9 48.9 178 MS Spike Conc. 49.7	Res 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	46.5 49.5 48.0 48.5 49.0 4170179 MS Result 227	% Rec 96 102 98 100 101 01 01 01 01 01 01 01 01 01 01 0	MS % Rec 49	tts C 30-120 30-120 30-120 30-120 30-120 30-120 MSD % Rec 67	% Rec Limits 75-125	4	RPD 20	P6
Arsenic Cadmium Copper Lead Zinc MATRIX SPIKE & M Paramete Arsenic Cadmium	MATRIX SF	Units mg/kg mg/kg	mg/kg mg/kg mg/kg mg/kg CATE: 4170 10587273002 Result 203 4.6	Conc. 48.9 48.9 48.9 48.9 48.9 48.9 178 MS Spike Conc. 49.7 49.7	Res 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	46.5 49.5 48.0 48.5 49.0 4170179 MS Result 227 50.7	% Rec 96 102 99 100 101 101 0 MSD Result 237 50.5	MS % Rec 49 93	tts C 80-120 80-120 80-120 80-120 80-120 80-120 MSD % Rec 67 91	% Rec Limits 75-125 75-125	4	RPD 20 20	P6 P6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

#### **REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



Project:	BPSOU Unreclaim	ned Sampling						
Pace Project No.:	10587273							
QC Batch:	783613		Analysis Meth	od: A	STM D2974			
QC Batch Method:	ASTM D2974		Analysis Desc	ription: D	Dry Weight / %M	by ASTM D2	2974	
			Laboratory:	F	ace Analytical S	ervices - Mi	nneapolis	
Associated Lab Sar		,	02, 10587273003, 10 09, 10587273010, 10	,	,		, ,	
SAMPLE DUPLICA	TE: 4172321							
			10587273001	Dup		Max		
Parar	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Percent Moisture		%	13.4	13.7		2	30 N2	
SAMPLE DUPLICA	TE: 4172322							
			10587273011	Dup		Max		
Parar	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Percent Moisture		%		5.7		1	30 N2	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



#### QUALIFIERS

#### Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587273

#### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD** - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### WORKORDER QUALIFIERS

WO: 10587273

[1] The samples were received outside of required temperature range. Analysis was completed upon client approval.

#### ANALYTE QUALIFIERS

- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
- P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.



#### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BPSOU Unreclaimed Sampling

Pace Project No.: 10587273

Analytical QC Batch Method Lab ID QC Batch Sample ID **Analytical Method** Batch 10587273001 BPSOU-UR05SS02-110421-1 EPA 3050B 783304 EPA 6010D 783590 10587273002 BPSOU-UR05SS02-110421-1-FD EPA 3050B 783305 EPA 6010D 783589 10587273003 BPSOU-UR05SS02-110421-2 EPA 3050B 783305 EPA 6010D 783589 BPSOU-UR05SS02-110421-3 783305 EPA 6010D 10587273004 EPA 3050B 783589 BPSOU-UR05SS03-110421-1 783305 783589 10587273005 EPA 3050B EPA 6010D 10587273006 BPSOU-UR05SS03-110421-2 EPA 3050B 783305 EPA 6010D 783589 10587273007 BPSOU-UR05SS03-110421-3 EPA 3050B 783305 EPA 6010D 783589 10587273008 BPSOU-UR05SS04-110421-1 EPA 3050B 783305 EPA 6010D 783589 10587273009 BPSOU-UR05SS04-110421-2 EPA 3050B 783305 EPA 6010D 783589 10587273010 BPSOU-UR05SS04-110421-3 EPA 3050B 783305 EPA 6010D 783589 10587273011 BPSOU-UR05SS05-110421-1 EPA 3050B 783305 EPA 6010D 783589 10587273012 BPSOU-UR05SS05-110421-2 EPA 3050B 783305 EPA 6010D 783589 BPSOU-UR05SS05-110421-3 783305 EPA 6010D 783589 10587273013 **FPA 3050B** 10587273014 BPSOU-UR01SS07-110321-3 EPA 3050B 783305 EPA 6010D 783589 10587273001 BPSOU-UR05SS02-110421-1 EPA 7471B 783306 EPA 7471B 783726 10587273002 BPSOU-UR05SS02-110421-1-FD EPA 7471B 783307 EPA 7471B 783729 10587273003 BPSOU-UR05SS02-110421-2 EPA 7471B 783307 EPA 7471B 783729 10587273004 BPSOU-UR05SS02-110421-3 EPA 7471B 783307 EPA 7471B 783729 10587273005 BPSOU-UR05SS03-110421-1 EPA 7471B 783307 EPA 7471B 783729 10587273006 BPSOU-UR05SS03-110421-2 EPA 7471B 783307 EPA 7471B 783729 10587273007 BPSOU-UR05SS03-110421-3 EPA 7471B 783307 EPA 7471B 783729 10587273008 BPSOU-UR05SS04-110421-1 EPA 7471B 783307 EPA 7471B 783729 10587273009 BPSOU-UR05SS04-110421-2 EPA 7471B 783307 EPA 7471B 783729 10587273010 BPSOU-UR05SS04-110421-3 FPA 7471B 783307 EPA 7471B 783729 10587273011 BPSOU-UR05SS05-110421-1 EPA 7471B 783307 EPA 7471B 783729 10587273012 BPSOU-UR05SS05-110421-2 EPA 7471B 783307 EPA 7471B 783729 10587273013 BPSOU-UR05SS05-110421-3 EPA 7471B 783307 EPA 7471B 783729 10587273014 BPSOU-UR01SS07-110321-3 EPA 7471B 783307 EPA 7471B 783729 10587273001 BPSOU-UR05SS02-110421-1 ASTM D2974 783613 BPSOU-UR05SS02-110421-1-FD 783613 10587273002 **ASTM D2974** 10587273003 BPSOU-UR05SS02-110421-2 ASTM D2974 783613 10587273004 BPSOU-UR05SS02-110421-3 **ASTM D2974** 783613 10587273005 BPSOU-UR05SS03-110421-1 783613 **ASTM D2974** 10587273006 BPSOU-UR05SS03-110421-2 783613 **ASTM D2974** 783613 10587273007 BPSOU-UR05SS03-110421-3 ASTM D2974 BPSOU-UR05SS04-110421-1 783613 10587273008 **ASTM D2974** 10587273009 BPSOU-UR05SS04-110421-2 **ASTM D2974** 783613 10587273010 BPSOU-UR05SS04-110421-3 **ASTM D2974** 783613 10587273011 BPSOU-UR05SS05-110421-1 **ASTM D2974** 783613 10587273012 BPSOU-UR05SS05-110421-2 **ASTM D2974** 783613 10587273013 BPSOU-UR05SS05-110421-3 **ASTM D2974** 783613 10587273014 BPSOU-UR01SS07-110321-3 **ASTM D2974** 783613

DD L N Soil, Sediment and Groundwater Samples

Laboratory Management Program (LaMP) Chain of Custody Record

2

Page\_\_1\_\_ of

*	BP Site Node Path:					Req I	oue Dat	Req Due Date (mm/dd/yy):	id/yy):		111	11/22/21 Ru	Rush TAT Yes 14 day	lay No
	BP/RM Facility No:				I	Lab V	Vork Or	Lab Work Order Number:	nber:					
Lab I	Lab Name: Pace Analytical	BP/ARC Facility Address:						Γ	Consultar	Consultant/Contractor:	tor:	Pion	Pioneer Technical Services	ces
Lab,	Lab Address: 1700 Elm Street SE, Minneapolis, MN 55414	City, State, ZIP Code:							Consultar	t/Contract	Consultant/Contractor Project No:		BPSOU Unreclaimed Sampling	mpling
Lab PM:		Lead Regulatory Agency:							Address:				1101 S. Montana St.	
Lab	_ab Phone: 612-607-6436	California Global ID No .:							Consultar	Consultant/Contractor PM:	tor PM:	Scot	Scott Sampson	
Lab (	Lab Shipping Accnt:	Enfos Proposal No:							Phone:	406	406-697-0946	Email: Ssar	ssampson@pioneer-technical.com	r-technical.co
Lab (	Lab Bottle Order No:	Accounting Mode: Provision	sion		В <sup>Ч</sup>	8	OOC-RM		Send/Sub	Send/Submit EDD to:		Scot	Scott Sampson	
Othe	Other Info:	Stage	Activity	ity					Invoice To:	ä		BP-RM	BP-Other	
BP/F	BP/RM PM: Mike Mc Anulty					œ	equest	Requested Analyses	yses			E.	Report Type & QC Level	C Level
PMF	PM Phone: 406-723-1822			Ē	Filtered (Y/N)	Î						Limit	Limited (Standard) Package	age
PME	PM Email: <u>mcanumc@bp.com</u>			а. Г	Preservation	u							Limited Plus Package	I age
					ers		υZ						Full Packs	- Full Package Level 2
Lab	Unique Sample ID, must follow format of SAMPLENAMEYYYYMMDD			(C) əfizoq	nistno) i	sisk	Cq' Cn' bp'			ġ		<b>D#:10587273</b>	273	
Ö			tinU dt	b (G) or Com	ix ix	lenA	Mercury Mercury			10587273	<b>     </b>			
		_	Dep	Grat					' <del> </del>					
	BPSOU-UR05SS02-110421-1	9:20	. <u>c</u>	υ	1 soil	1	××					-	<u>8</u>	
	BPSOU-UR05SS02-110421-1-FD	9:25	Ę.	υ	1 soil		×					0	200	
	BPSOU-UR05SS02-110421-2	9:15	Ë	υ	1 soil		×						503	
	BPSOU-UR05SS02-110421-3	9:10	. <u>c</u>	U	1 soil		×				 		100	
	BPSOU-UR05SS03-110421-1	9:45	. <u>E</u>	υ	1 soil		×						005	
	BPSOU-UR05SS03-110421-2	9:40	.⊑	υ	1 soil		×						006	
	BPSOU-UR05SS03-110421-3	9:35	. <u>E</u>	υ	1 soil		×						007	
Samp	Sampler's Name: Jesse Sims	Relinquished By / Affiliation	By / Affi	iation		Date		Time		Accep	Accepted By / Affiliation	filiation	Date	Time
Samp	Sampler's Company: Pioneer Technical Services	Jesse Sims/PTS				11/8/2021		1600		tac	N N		11/11/2/	850
Ship .	Ship Method: FedEx Overnight Ship Date: 11/8/21								þ					) 2 2
Shipr	Shipment Tracking No: イタフタ タタろく しんりょ													
Spec	Special Instructions: *Maximum 14 day TAT													(
	THIS LINE - LAB USE ONLY: Custody Seals In Place Yes DNo	Temp Blank	—	Cooler 7	Cemp or	Cooler Temp on Receipt: 😵 🕂	10	Ô.	-	Trip Blank: Yes (NG	Yes (Ng	MS/MSD Sa	MS/MSD Sample Submitted: Yes / No/	s (No/
						ľ							BP LaMP Soil/	BP LaMP Soil/H2O COC March 2019

Laboratory Management Program (LaMP) Chain of Custody Record Provide Soli, Sediment and Groundwater Samples Rite Node Path:

Page 2\_ of 2\_

T	BP Site Node Path:	th:				Req	Due D	ate (m	Req Due Date (mm/dd/yy):	ا چَ		11/22/21		Rush TAT Yes 14 day	No No
	BP/RM Facility No:	:0			1	Lab	Work (	Drder	Lab Work Order Number:	ا بر					
Lab	Lab Name: Pace Analytical	BP/ARC Facility Address:							Con	Consultant/Contractor:	intractor:		Pioneer	Pioneer Technical Services	
Lab	Lab Address: 1700 Elm Street SE, Minneapolis, MN 55414	City, State, ZIP Code:							Con	sultant/Co	Intractor	Consultant/Contractor Project No:	BPSOU	BPSOU Unreclaimed Sampling	oling
Lab PM:		Lead Regulatory Agency:							Address	ess:			110	1101 S. Montana St.	
Lab	Lab Phone: 612-607-6436	California Global ID No .:							Con	Consultant/Contractor PM:	Intractor	PM:	Scott Sampson	nosqr	
Ľab	Lab Shipping Accnt:	Enfos Proposal No:							Phone:	je:	406-65	406-697-0946 Email:		ssampson@pioneer-technical.com	echnical.com
Lab	Lab Bottle Order No:	Accounting Mode: Provision	5	000-80	р П Р	8	OOC-RM		Sen	Send/Submit EDD to:	EDD to:			nosqu	
Ğţ	Other Info:	Stage	Activity	2					ovul	Invoice To:			BP-RM	BP-Other	
BP/I	BP/RM PM: Mike Mc Anulty		_				seque	sted A	Requested Analyses	s			Rep	Report Type & QC Level	evel
M	PM Phone: 406-723-1822			Ē	Filtered (Y/N)	9							Limited (	Limited (Standard) Package	
Мd	PM Email: <u>mcanumc@bp.com</u>			•	Preservation			$\vdash$					Lin	Limited Plus Package	1
					sis		υZ							Full Package	- Evet 2
Lab No.	Unique Sample ID, must follow format of SAMPLENAMEYYYYMMDD Examples: MW01_20190101 BH01_3-5_20190101	190101; Time	tinU dtqs	(C) ətisoqmoC ro (D) dare	Total Number of Containe Aatrix	sisylenA	otal Metals 6010 As, Cd, Cu, Pb,	471 Mercury			*			Comments	
	BPSOU-UR05SS04-110421-1	9:10	<u>-</u>	υ	1 soil		_	×					109	S	
	BPSOU-UR05SS04-110421-2	9:05	. <u>E</u>	υ	1 soil		×	×					500	0-	
	BPSOU-UR05SS04-110421-3	0:6	. <u>E</u>	υ	1 soil	_	×	×					010	0	
	BPSOU-UR05SS05-110421-1	10:10	Ë	U	1 soil	_	×	×					NQ		
	BPSOU-UR05SS05-110421-2	10:05	Ŀ	υ	1 soil	1	×	×					ÕIZ		
	BPSOU-UR05SS05-110421-3	10:00	Ë	υ	1 soil		×	×					013	~	
	BPSOU-UR01SS07-110321-3	10:35	Ë	υ	1 soil	_	×	×				•	10	****	
Sam	Sampler's Name: Jesse Sims	Relinquished By / Affiliation	y / Affili	ation		Date	و ا	Time		A	ccepteo	Accepted By / Affiliation	u	Date	Time
Sam	Sampler's Company: Pioneer Technical Services	Jesse Sims/PTS				11/8/2021	2021	1600	フ	5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Ĵ			11/1/121	850
Ship	Ship Method: FedEx Overnight Ship Date: 11/8/21														
Ship	Shipment Tracking No: イラフタ タタスタ しん20														
Spe	Special Instructions: *Maximum 14 day TAT														
	THIS LINE - LAB USE ONLY: Custody Seals in Place Yes No	No   Temp Blank (	 9	Coole	r Temp	Cooler Temp on Receipt: 😸 🕂	اند اند	1	°F/C	 -	Trip Blank: Yes / No	es / No	MS/MSD Sarr	MS/MSD Sample Submitted: Yes / No	s / No
			l			l	I		ļ						

# Proprietary and Confidential Property of BP and its Affiliates

BP LaMP Soil/H2O COC March 2019

			Docum	ent Nam	ne:	Document	Revised: 12Aug2	020
	Pace Analytical <sup>®</sup>	Sample Co	ondition U	pon Rec	eipt (SCUR) - ESI		Page 1 of 1	
			Docur	nent No	.:	Pace A	alytical Services	-
	1	EN	IV-FRM-M	IN4-014	9 Rev.01	<u> </u>	Ainneapolis	
Samala Co	Andition Client Name			Droi	a at #.			
Sample Co Upon Rece				Proj	ect #:			
Tech S		44.0	<b>\</b>			#:10	587 <u>273</u>	
	- $0000000$	aMP	)				Due Date: 1	
Courier:	Fed Ex UPS	USPS	Clie	nt	PM:			./ 24/ 21
		e 🗌 Commer	cial		CLIE	NT: BP-PIO	NEER	
Tro okin a l	Number: <u>4278993464</u> 2	Q		e Exceptio				
				IV-FRM-MIN				
	eal on Cooler/Box Present?			s Intact?	Ýes 🛛 No		Fissue Frozen? 🔲	1
Packing M		. –	None	Othe	r:		Temp Blank? 🛛 🖊	ĴYes □No
Thermome	eter:	T3(0459)	Type of Ice	: <u>_</u>	,∕ Wet □Blue	None	Dry Melted	
Temp should		emp Read w/t	emp blank:	é	85	°C Ave	rage Corrected	See Exceptions.
Competing	Factor: Cooler Temp	Courses days to			0~H		p (no temp blank	ENV-FRM-MIN4-0142
		Corrected w/te	inp blank :_		<u>CT '/</u>	ºC   only		1 Container
	lated Soil: (   N/A, water sample/O originate in a quarantine zone within						g Contents: <u></u> n source (internationa	$1^{-}$ $1^{-}$ $4^{-}$
	VC, NM, NY, OK, OR, SC, TN, TX or VA				Hawaii and Puerto	-		any, meruumg
	If Yes to either question, fi			cklist (F-I	MN-Q-338) and inc	ude with SCUR	COC paperwork.	
			/			CO	MMENTS:	
	ody Present and Filled Out?		∕es □No		1.			
	ody Relinquished?	Ź			2.			
the second s	ne and/or Signature on COC?	2	/		3.			
Samples Arriv	ved within Hold Time?	Ź			4.			
Short Hold Ti	ime Analysis (<72 hr)?		es 🖉 No			Nitrate Nitrite	Coliform/E coli 🔲 BOD/ ] Orthophos 🔲	CBOD Hex Chrome
Rush Turn Ar	ound Time Requested?				6.		· · · · · · · · · · · · · · · · · · ·	
Sufficient Sam	•	samples)?	= 4		7			
Correct Conta	Provided for MS/MSD (if more than 10 ainers Used?			□n/a	7.			
1	tainers Used?				5.			
Containers In	tact?	ZÝ	′es Î∏No		9.			
Field Filtered	Volume Received for Dissolved Tests	? (	∕es □No	ǾN/A	10. Is sediment	isible in the diss	olved container? 🔲	Yes 🔲 No
Is sufficient info	ormation available to reconcile the sample	s to the COC	∕es □No		11. If no, write ID/ I	Date/Time on Cont	ainer Below:	See Exception
	ater Soil 🗍 Oil 🗍 Other	,					· .	ENV-FRM-MIN4-0142
All containers	s needing acid/base preservation have			1	12. Sample #	·····		
checked?			′es □No	∕⊡n/a				
All containers	s needing preservation are found to b	e in			NaOH	HNO₃	□H₂SO₄	7ins Asst-t-
1	/ith EPA recommendation?		′es □No	,∕⊡n/a			L_112304	Zinc Acetate
	ı, <2pH, NaOH>9 Sulfide, NaOH>10 C							330 <sup>4</sup> 1
Exceptions: V	OA, Coliform, TOC/DOC Oil and Greas	se, □Y	es 🗌 No	Øn/a	Positive for Res.	]Yes	1	See Exception
	ater) and Dioxin/PFAS *If adding prese			/	Chlorine?		Paper Lot#	ENV-FRM-MIN4-0142
a container it i	must be added to associated field and e	quipment blanks	(verify with P	'M first)	Res. Chlorine	0-6 Roll	0-6 Strip	0-14 Strip
Extra labels p	resent on soil VOA or WIDRO contane	ers?	′es □No		13.			See Exception
	VOA Vials (greater than 6mm)?		_	<u>DN/A</u>		······		ENV-FRM-MIN4-0140
3 Trip Blanks		ים			14.			
	stody Seals Present?		′es 🗌 No		Pace Trip Bla	nk Lot # (if purch	ased):	
Temp Log: Temp 20 mins	o must be maintained at <6°C during login, red	cord temp every		)ΤΙΓΙΛΔΤΙ	ON/RESOLUTION	C	ield Data Required	? Yes No
,	<u>(ジロロ</u> 多長〇 <sup></sup> Temp: 名づう Corrected	Temp: 8-4	Person Co				ate/Time:	
	H II. Putlin cooler				ion: Notified o			
		Temp: 8H		.,	notified o	remperatu	<u>.</u>	
							11/15/2021	
	anager Review:	ere-			Abia farma a illibra a sub	Date:	1/15/2021	

Note: Whenever there is a discrepance meeting worth Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Page 32 of 34

From:	Jennifer Anderson
То:	Scott Sampson
Cc:	Laura Moon
Subject:	RE: Temperature - BPSOU Unreclaimed Sampling Pace Projects 10587272 / 10587273
Date:	Friday, November 12, 2021 4:14:00 PM
Attachments:	image001.png
	image002.png

Sounds good, thank you Scott! We will proceed with the analyses.

# Jennifer Anderson, PMP

Project Manager | Pace Environmental Sciences Direct 612.607.6436 | Main 612.607.6400

Pace Analytical Services will be closed Thursday, November 25<sup>th</sup> and Friday, November 26<sup>th</sup> for the Thanksgiving Holiday. Please coordinate with your project manager to schedule any rush or short hold analyses around these dates.

From: Scott Sampson <ssampson@Pioneer-technical.com>
Sent: Friday, November 12, 2021 11:18 AM
To: Jennifer Anderson <Jennifer.Anderson@pacelabs.com>
Cc: Laura Moon <Imoon@pioneer-technical.com>
Subject: RE: Temperature - BPSOU Unreclaimed Sampling Pace Projects 10587272 / 10587273

CAUTION: This email originated from outside Pace Analytical. Do not click links or open attachments unless you recognize the sender and know the content is safe. Jennifer,

Thank you for the notification. FedEx is making things challenging...

Please proceed with analysis of samples on both COCs.

Thanks, Scott

From: Jennifer Anderson <Jennifer.Anderson@pacelabs.com>
Sent: Friday, November 12, 2021 6:41 AM
To: Scott Sampson <ssampson@Pioneer-technical.com>
Subject: Temperature - BPSOU Unreclaimed Sampling Pace Projects 10587272 / 10587273

Good Morning Scott,

We received the samples for the attached COCs yesterday and it was noted that the samples were over 6 degrees Celsius. The temperature was noted to be 8.4 degrees Celsius. The 6010 metals are not temperature sensitive, but mercury in soils is temperature sensitive.

We can plan to proceed and qualify accordingly, please let me know if it would be preferred to not

proceed with either of these.

Thank you, Jennifer

# Jennifer Anderson, PMP

Project Manager | Pace Environmental Sciences 1700 Elm Street SE Suite 200, Minneapolis, MN 55414 Direct 612.607.6436 | Main 612.607.6400

Pace Analytical Services will be closed Thursday, November 25<sup>th</sup> and Friday, November 26<sup>th</sup> for the Thanksgiving Holiday. Please coordinate with your project manager to schedule any rush or short hold analyses around these dates.

Please let your Project Manager know if your project is related to a permit or if your permit has recently been updated.

Pace Analytical\*

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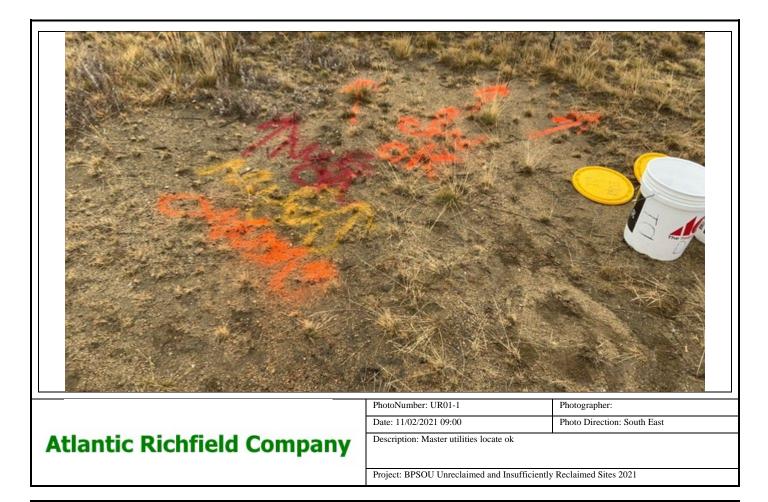
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# Attachment D Electronic Data Deliverable File

Included separately

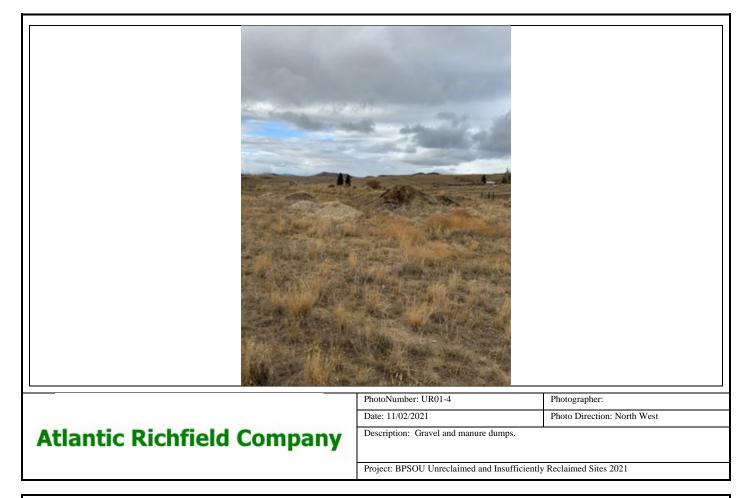
# Appendix B Site Photographs



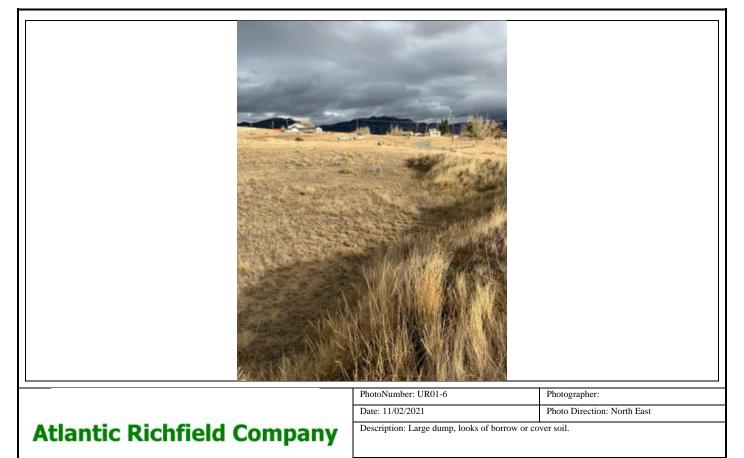


# **Atlantic Richfield Company**

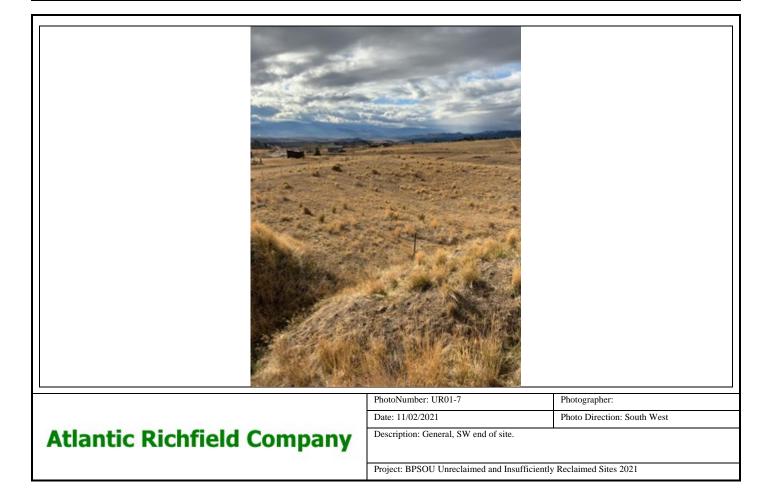
	CONTRACTOR AND A DECEMBER OF A
PhotoNumber: UR01-2	Photographer:
Date: 11/02/2021	Photo Direction: South East
Description: General facing west	
Project: BPSOU Unreclaimed and Insufficiently	Reclaimed Sites 2021







Project: BPSOU Unreclaimed and Insufficiently Reclaimed Sites 2021





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Project: BPSOU Unreclaimed and Insufficiently Reclaimed Sites 2021
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