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Butte Priority Soils Operable Unit (BPSOU) Unreclaimed Sites - Draft Final Field Sampling Plan (FSP) Package #1; UR-23, UR-31, UR-32, and UR-39

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Dear Agency Representatives:

As described in Appendix D, Attachment C to the 2020 Consent Decree, areas listed as Unreclaimed Solid Media Sites within Butte Priority Soils Operable Unite (BPSOU) may have potentially been impacted by historic mining and therefore may pose a threat to human health, contribute metals-impacted sediments to existing or planned wet weather control features, or contribute to the degradation of surface water quality. There are a total of 39 unclaimed sites, multiple sites will be organized in a package for approval. Field sampling plan (FSP) package #1 (FSP Package #1) includes sites UR-23, UR-31, UR-32, and UR-39. Site evaluations will be performed using means and methods provided in the Atlantic Richfield Company Final Unreclaimed Sites Quality Assurance Project Plan (QAPP) published October 12, 2018, which was prepared in accordance with EPA guidance documents EPA QA/R-5 and EPA QA/G-5 for QAPP development. The QAPP was updated in 2021 (referred to as Unreclaimed Sites QAPP) as a component of the BPSOU Solid Media Management Project Plan. Results from site evaluations will be used to prepare site declarations and assist with determination of site remediation requirements. Site evaluations will begin in 2021 and are anticipated to be completed 2022, or as site access allows. Site declarations for sites sampled in 2021 will be provided for Agency review and approval by the end of 2021. Declarations of sites sampled after 2021 will be provided as soon as feasible. Remedial action will be performed following Agency approval of pertinent site-specific remedial action work plans.

A preliminary list of FSP packages, provided below, will be updated to record the status and progress related to FSP package submittals.

Package	Sites	Submittal Date	Approval Date
1	UR-23, 31, 32, and 39	May 19, 2021	TBD
2	UR-24 and 26	TBD	TBD
3	UR-06, 07, 20, 22, 35, and 36	TBD	TBD
4	UR-08, 10, 16N, 16S, and 21	TBD	TBD
5	UR-09, 12, 13, 33, and 38	TBD	TBD
6	UR-05, 27, 28, 29, 30, and 34	TBD	TBD
7	UR-01, 02, 03, 04, 15, 17, and 37	TBD	TBD

The crosswalk list provided below references where pertinent field sample collection and documentation elements are discussed.

	Reference Location	
Element	**FSP**	**UR QAPP**
Title page and approval authority.		Page i
Introduction and appropriate Agency-approved QAPP reference.	X	
Goals and objectives of sampling.		Section 2.4, 3.2
Proposed schedule for field work.	X	
Site figure including sampling locations, number and depth of samples to be collected, and sample field identification.	X	Section 3.2.1
Field activity methods and procedures, standard operating procedures.		Section 3.2, Table 4
Sample labeling and shipping.		Section 3.2.5, Appendix C
Sample analysis, specifying X-ray fluorescence (XRF) vs. laboratory analysis and laboratory name.		Section 3.3
Figure showing the site and/or area represented by a sample, sample ID, and aliquot locations for composite samples.	X	

Soil sampling is proposed for FSP Package #1 that includes 4 Unreclaimed Sites (UR Sites) located in the uptown area of Butte, Montana. The results of the soil sampling will be used to support the site declaration and potential future remediation requirements for each site. This FSP is consistent with Section 3.0 Data Acquisition protocol described in the Unreclaimed Sites QAPP. These 4 UR Sites are each less than 1.5 acres. Sites UR-23, 31, and 39 are in residential areas with the potential of exposure to children playing in the area. Site UR-32 is an unpaved parking lot with daily exposure to pedestrians. Each of the sites is discussed separately below. The attachments at the end of this document include figures for each site showing the proposed soil sampling locations.

Site: UR-23 New and Mahoney St. – Remaining Areas

Background

Site UR-23 consists of approximately 1.1 acres located in a residential area in the east portion of uptown Butte, Montana. The site is referred to as New and Mahoney Streets, based on a nearby intersection. Site UR-23 is one block south of East Mercury Street and two blocks east of the Silver Bow Homes complex. It is bounded on the north by Curtis Street, on the east by the Butte Central practice field, on the south by New Street, and on the west by the lot east of 326 Curtis Street (Figure 1). The property ownership for Site UR-23 includes the Butte Public Housing Authority, City-County of Butte-Silver Bow (BSB) (the portions in the streets), Louis Sterk, and the Central Education Foundation of Silver Bow. Figure 1 shows the five proposed soil sample locations (marked UR-23-SS-01 through UR-23-SS-05) for Site UR-23.

Site UR-23 consists of vacant lots with most of the surface being bare soil. There are some patches of sparse grass and weeds and two remnant areas of asphalt paving. The western lot contains a concrete foundation from a former house. There is no fencing on the site. The slope and drainage are to the south and southeast across the entire site. The site drains into the Berkley Pit Bypass and does not link to Silver Bow Creek.

Previous Sampling Efforts

This site was previously sampled and the results listed under a *Field Survey of Unreclaimed Areas Summary Report* published by CDM in 1997. The approximate location for the previous sample is included on Figure 1 (shown as FSUA-45) and the results are in Table 1 below. Sample FSUA-45 exceeded BPSOU action levels for lead and zinc. The BPSOU action levels are listed in Table 1 and Table 2 of the Unreclaimed Sites QAPP.

Table 1: Previous Sampling Results*

(units are in milligrams per kilogram)

COC	FSUA-45
Arsenic	103
Cadmium	0
Copper	446
Lead	2,660
Zinc	4,410

* Results from CDM 1997 *Field Survey of Unreclaimed Areas Summary Report.* (Sample date was November 1995)
COC: contaminants of concern.

The site was previously remediated in October 2012 to mitigate storm water flows from private properties along Mercury Street as summarized in the Atlantic Richfield Company *Third Cycle Best Management Practices Phase II Source Controls Construction Completion Report (CCR)* published December 13, 2013. The area under consideration is partially owned by a private party and access has not been granted. Soil sampling and/or remediation activities will be dependent on property access.

Site: UR-31 Big Butte VFD – Surrounding Areas

Background

Site UR-31 is approximately 0.7 acres and is located in a residential area in the northwest portion of uptown Butte. The site is the location of the Big Butte Volunteer Fire Department (VFD). Site UR-31 is bounded on the north by Missoula Avenue, on the east by an unnamed two-track dirt road, on the south by Lexington Avenue, and on the west by the parking lot of Montana Tech student housing (Figure 2). It is one block west of North Excelsior Avenue. The property ownership for Site UR-31 includes Ferry Lane Limited and the Big Butte VFD. Figure 2 shows the 3 proposed soil sample locations for the site (identified as UR-31-SS-01 through UR-31-SS-03).

Two fire station buildings are located near the center of Site UR-31 and the remainder of the area is fairly well vegetated with grasses except for bare areas on the north side of the east building. One of the bare areas appears to have a small outcrop of bedrock. In general, Site UR-31 slopes and drains to the south. But in the western one-third of the site there is a small, closed basin. It appears that this basin could hold some water before reaching a depth where it would drain out to the southeast. There is no fencing on the site. There is a playground with an ice-skating rink located due north of the site. The site drains into Missoula Gulch and to catch basins (CB) CB-8 and CB-9.

Previous Sampling Efforts

There is no record of previous soil sampling at Site UR-31 nor in its vicinity.

Site: UR-32 S. Colorado St. and W. Mercury St. – SE Corner

Background

Site UR-32 is approximately 0.3 acres and is located in the business district of uptown Butte. The site is unpaved and is the location of BSB Parking Lot T. Site UR-32 is located at the southeast corner of West Mercury Street and Colorado Street (Figure 3). The alley along the east side of the site is paved with asphalt. On the south side of the site there is an asphalt-paved parking lot for the Human Resources Council building. The property ownership for Site UR-32 includes BSB and the Human Resources Council District XII. Figure 3 shows the 3 proposed soil sample locations for Site UR-32 (identified as UR-32-SS-01 through UR-32-SS-03).

A concrete sidewalk is located along the north and west borders of the site. There is no fencing on the site. The slope and drainage are to the south across the entire site, which is part of the Buffalo Gulch drainage.

Site UR-32 is located in the part of Butte that was once known as Butte's Chinatown. In 2007, a limited archeological excavation was performed in a portion of Site UR-32[1]. The main portion of the excavation only went to a depth of 15 inches in its search for artifacts of the Chinatown era. There was no soil sampling related to this archeological research.

[1] Archaeological Excavation at Mercury Street by Mitzi Rossillon, Renewable Technologies, Inc. 8 W. Park St., Suite 313. Butte, Montana 59701. Submitted to Butte-Silver Bow Urban Revitalization Agency Courthouse, Butte, Montana 59701. August 8, 2008

Previous Sampling Efforts
There is no record of previous soil sampling at Site UR-32 nor in its vicinity.

Site: UR-39 Belle of Butte – Surrounding Areas

Background
Site UR-39 is approximately 0.9 acres located in a residential area in the northeast part of Walkerville. The site is referred to as the Belle of Butte. The capped Belle of Butte shaft is located adjacent to Site UR-39 but is not included within the site boundary because the area around the shaft has been reclaimed. Site UR-39 is bounded on the north by East Clark Street, on the east by a dirt alley, on the south by another dirt alley (north of Academy Street), and on the west by North Main Street and the reclaimed area around the Belle of Butte shaft (Figure 4). Site UR-39 is owned by the Atlantic Richfield Company. Figure 4 shows the 5 proposed soil sample locations for the site (identified as UR-39-SS-01 through UR-39-SS-05).

Playground equipment is located in the east portion of Site UR-39. The playground appears to be in active use based on the presence of bicycles during a site visit. In the northwest part of the site there are several vehicles that appear to be parked there for the long-term. There is a fence around the reclaimed portion of this parcel which acts as a border for the west and northwest portion of the site.

Site UR-39 slopes and drains entirely to the south. There is a north-south oriented drainage channel in the west portion of the site that is fed by a culvert that runs under East Clark Street. An outlet culvert was not visible at the south end of the channel (during the site visit), but it may be obscured by weeds and dirt. The walls and floor of the channel contain concrete chunks and other debris that appear to have been dumped at this site. The site flows south to the Syndicate Pit then to CB-8 then to CB-9.

Previous Sampling Efforts
There is no record of previous soil sampling at Site UR-39. However, there were two samples collected in the lot due north of the site on the north side of East Clark Street. This area is referred to as the Clark Street Dump. These samples were PSERA9304 and 12-01. Results for PSERA9304 were included in the July 1993 Time-Critical Removal Action (TCRA) Sampling Results. Results for sample 12-01 were included as part of the BPSOU April 1994 Soil Sampling data (data obtained from the Geocortex web-based database at https://eis2.woodardcurran.com/Html5Viewer/index.html?viewer=BPButte.BPSOU). Figure 4 shows the locations for these previous samples and the results are in Table 2. Sample 12-01 exceeds BPSOU action levels for lead and zinc. The BPSOU action levels are listed in Tables 1 and 2 of the Unreclaimed Sites QAPP.

Table 2: Previous Sampling Results near Site UR-39
(units are in milligrams per kilogram)

COC	Sample: PSERA9304 April 1993	Sample: #12-01 April 1994
Arsenic	52	115
Cadmium	2	5
Copper	32	196
Lead	672	2530
Zinc	302	1810

COC: contaminants of concern.

Unreclaimed Sites QAPP

All field work and soil analysis will be completed in accordance with the Unreclaimed Sites QAPP. The QAPP will be reviewed annually and updated as needed on Agency review and approval. Soil sampling will be conducted at the 4 UR Sites at depth intervals of 6 to 12 inches, 2 to 6 inches, and 0 to 2 inches. Sampling will take place in that order from the deepest interval (6 to 12 inches) to the shallowest interval (0 to 2 inches). Proposed sample locations for each site are shown on Figures 1 through 4.

Sampling Procedure

All sampling procedures are to be followed according to the Unreclaimed Sites QAPP, which describes the activities necessary to conduct soil sampling and characterization activities on UR Sites within BPSOU. It also describes the quality assurance/quality control policies and procedures to be used during collection and analysis. Implementation of this fieldwork will likely commence in the spring of 2021, assuming that access has been obtained for all subject parcels.

If you have questions or comments, please do not hesitate to call me at (907) 355-3914.

Sincerely,

Mike McAnulty

Mike Mc Anulty
Liability Manager
Remediation Management Services Company
An affiliate of **Atlantic Richfield Company**

Attachments:

Figure 1 Unreclaimed Site UR-23 Proposed Sample Locations
Figure 2 Unreclaimed Site UR-31 Proposed Sample Locations
Figure 3 Unreclaimed Site UR-32 Proposed Sample Locations
Figure 4 Unreclaimed Site UR-39 Proposed Sample Locations

Cc: Patricia Gallery / Atlantic Richfield - email
Chris Greco / Atlantic Richfield – email
Mike Mc Anulty / Atlantic Richfield - email
Loren Burmeister / Atlantic Richfield – email
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Mave Gasaway / DGS - email
John Davis / PRR - email
Joe Vranka / EPA - email
David Shanight / CDM - email
Curt Coover / CDM - email
James Freeman / DOJ - email
John Sither / DOJ - email
Jenny Chambers / DEQ - email
Dave Bowers / DEQ - email
Carolina Balliew / DEQ - email
Matthew Dorrington / DEQ - email
Jim Ford / NRDP - email
Ray Vinkey / NRDP - email
Harley Harris / NRDP - email
Katherine Hausrath / NRDP - email
Meranda Flugge / NRDP - email
Ted Duaime / MBMG - email
Gary Icopini / MBMG - email
Becky Summerville / MR - email
Kristen Stevens / UP - email
Robert Bylsma / UP - email
John Gilmour / Kelley Drye - email
Leo Berry / BNSF - email
Robert Lowry / BNSF - email
Brooke Kuhl / BNSF - email
Jeremie Maehr / Kennedy Jenks - email
Annika Silverman / Kennedy Jenks - email
Matthew Mavrinac / RARUS - email
Harrison Roughton / RARUS - email
Brad Gordon / RARUS - email
Mark Neary / BSB - email
Eric Hassler / BSB - email
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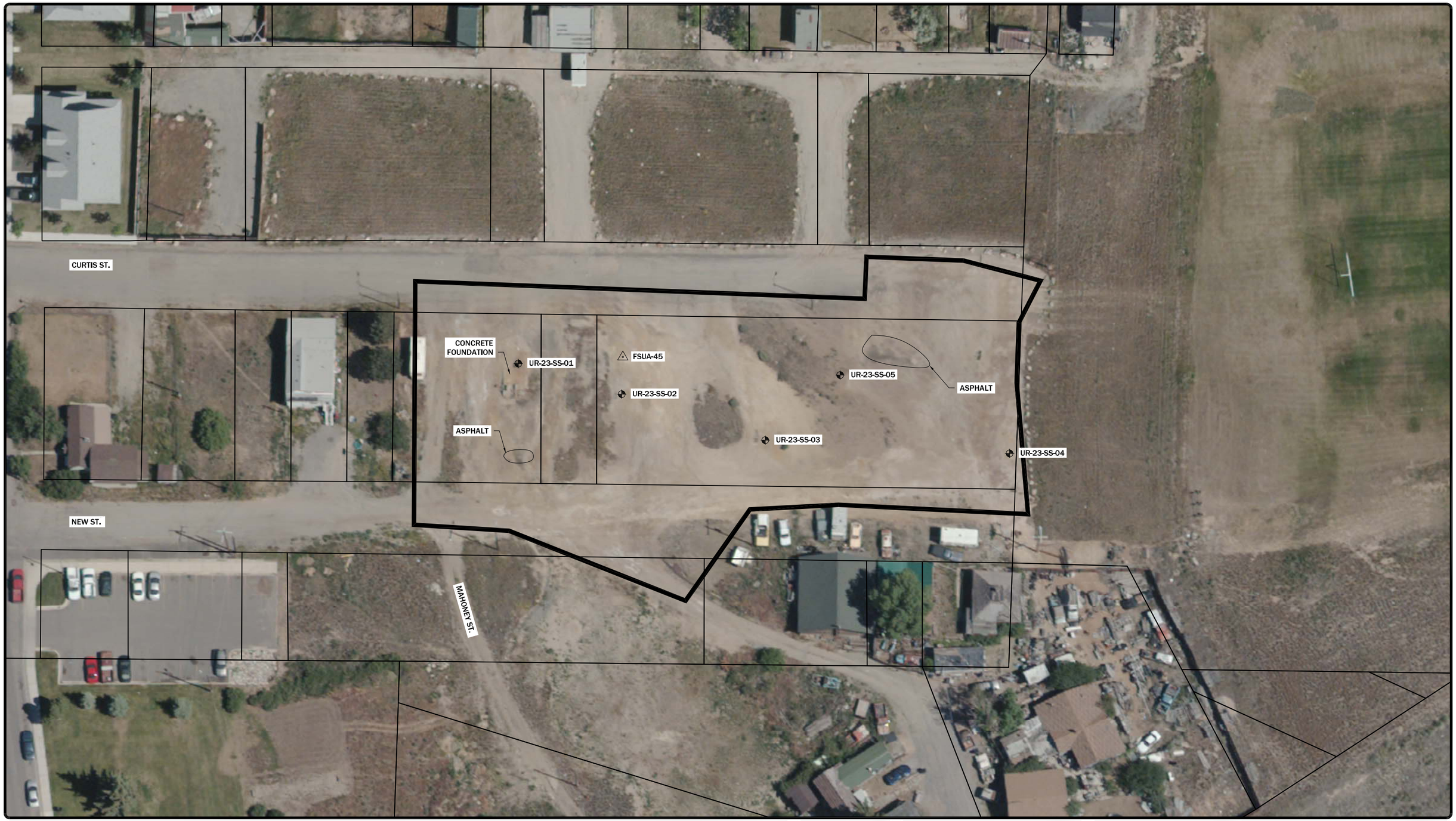
Chad Anderson / BSB - email
Brandon Warner / BSB – email
Abigail Peltomaa / BSB - email
Molly Maffei / BSB - email

Gordon Hart / BSB – email
Jeremy Grotbo / BSB – email
Josh Vincent / WET - email
Craig Deeney / TREC - email
Scott Bradshaw / TREC - email
Brad Archibald / Pioneer - email
Pat Sampson / Pioneer - email
Mike Borduin / Pioneer - email
Joe McElroy / Pioneer – email
Andy Dare / Pioneer – email
Karen Helfrich / Pioneer - email
Leesla Jonart / Pioneer - email
Connie Logan/ Pioneer – email
Ian Magruder/ CTEC- email
CTEC of Butte - email
Scott Juskiewicz / Montana Tech – email

File: MiningSharePoint@bp.com - email
BPSOU SharePoint - upload



LEGEND:

- PROPOSED SOIL SAMPLE LOCATION
- PREVIOUS SOIL SAMPLE LOCATION

UR-23 IS 1.1 ACRES

N

DISPLAYED AS:
COORD SYS/ZONE: MSP
DATUM: NAD 83
UNITS: FEET
SOURCE: PIONEER

SCALE IN FEET
0 25 50

FIGURE 1

UNRECLAIMED SITE
UR-23
PROPOSED
SAMPLE LOCATIONS

PIONEER
TECHNICAL SERVICES, INC.
1101 SOUTH MONTANA
BUTTE, MONTANA 59701
(406) 782-5177

DATE: 10/2018

10/17/2018 11:48:15 AM P:\ARCO\BUTTE\BPSOU\2018\UNRECLAIMED SITES\DRAWINGS\BSB -UR23.DWG

LEGEND:

PROPOSED SOIL SAMPLE LOCATION

UR-31 IS 0.7 ACRES

N

DISPLAYED AS:
COORD SYS/ZONE: MSP
DATUM: NAD 83
UNITS: FEET
SOURCE: PIONEER

SCALE IN FEET
0 25 50

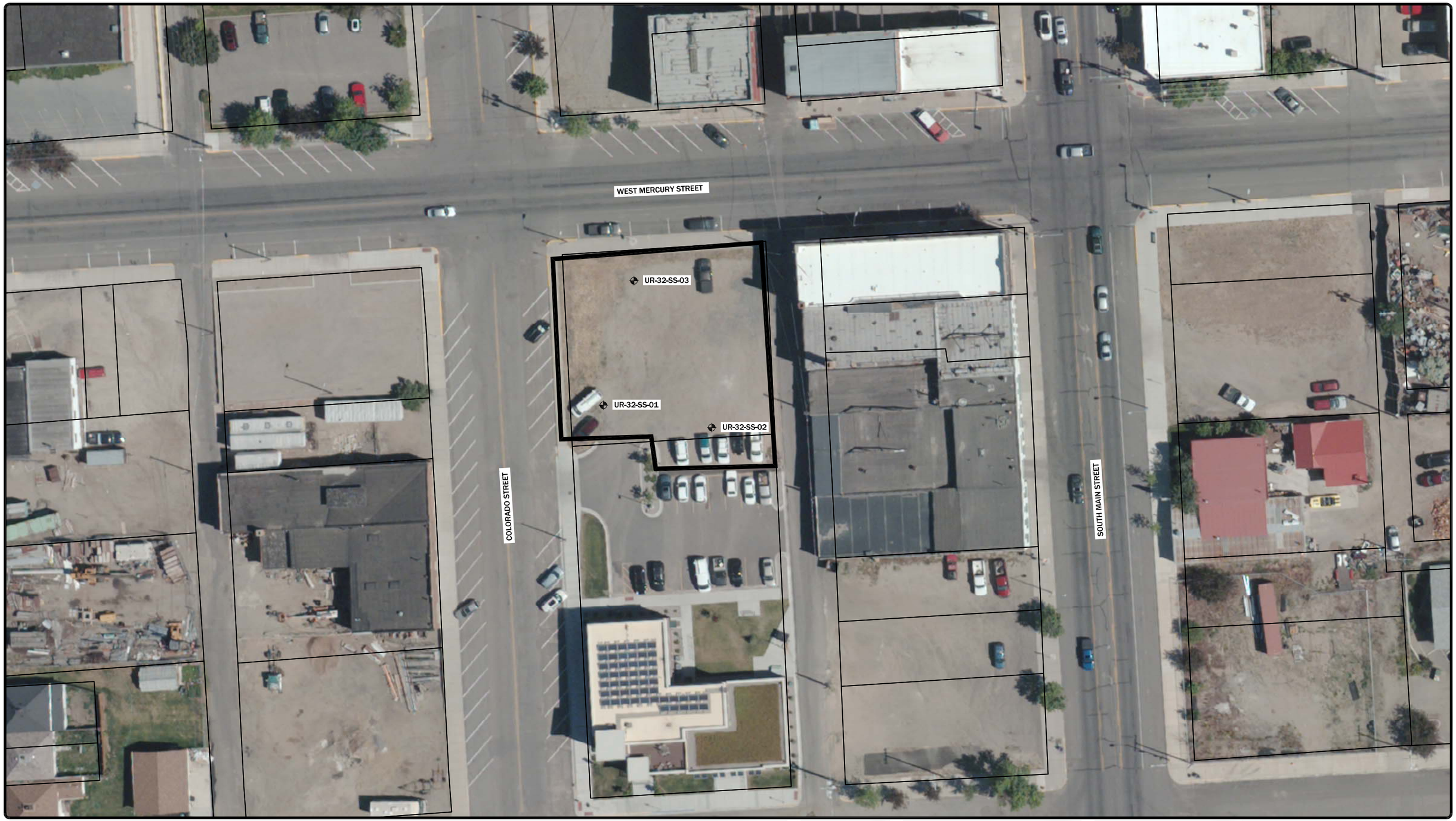
FIGURE 2

UNRECLAIMED SITE
UR-31 BIG BUTTE VFD
PROPOSED
SAMPLE LOCATIONS

PIONEER
TECHNICAL SERVICES, INC.
1101 SOUTH MONTANA
BUTTE, MONTANA 59701
(406) 782-5177

DATE: 10/2018

5/12/2021 12:07:07 PM P:\ARCO\BUTTE\BPSOU\2018\UNRECLAIMED SITES\DRAWINGS\BSB -UR31.DWG



LEGEND:

PROPOSED SOIL SAMPLE LOCATION

UR-32 IS 0.3 ACRES

N

	DISPLAYED AS:
COORD SYS/ZONE:	MSP
DATUM:	NAD 83
UNITS:	FEET
SOURCE:	PIONEER

SCALE IN FEET

0 25 50

FIGURE 3

UNRECLAIMED SITES UR-32 PROPOSED SAMPLE LOCATIONS

PIONEER TECHNICAL SERVICES, INC.
1101 SOUTH MONTANA
BUTTE, MONTANA 59701
(406) 782-5177

DATE: 10/2018

10/16/2018 3:53:29 PM P:\ARCO\BUTTE\BPSOU\2018\UNRECLAIMED SITES\DRAWINGS\BSB -UR32.DWG

LEGEND:

- PROPOSED SOIL SAMPLE LOCATION
- PREVIOUS SOIL SAMPLE LOCATION

UR-39 IS 0.9 ACRES

N

DISPLAYED AS:
COORD SYS/ZONE: MSP
DATUM: NAD 83
UNITS: FEET
SOURCE: PIONEER

SCALE IN FEET
0 25 50

FIGURE 4

UNRECLAIMED SITE
UR-39 BELLE OF BUTTE
PROPOSED
SAMPLE LOCATIONS

PIONEER
TECHNICAL SERVICES, INC.
1101 SOUTH MONTANA
BUTTE, MONTANA 59701
(406) 782-5177

DATE: 10/2018

10/16/2018 3:24:54 PM P:\ARCO\BUTTE\BPSOU\2018\UNRECLAIMED SITES\DRAWINGS\BSB -UR39.DWG