

Montana Tech Library

Digital Commons @ Montana Tech

Silver Bow Creek/Butte Area Superfund Site

Montana Superfund

Summer 7-25-2023

Butte Priority Soils Operable Unit (BPSOU) Draft Final Insufficiently Reclaimed Sites – Field Sampling Plan (FSP) BRES No. 134 – Star West Dump

Mike McAnulty

Follow this and additional works at: https://digitalcommons.mtech.edu/superfund_silverbowbutte



Part of the [Environmental Health and Protection Commons](#), [Environmental Indicators and Impact Assessment Commons](#), and the [Environmental Monitoring Commons](#)

July 25, 2023

Nikia Greene
Remedial Project Manager
US EPA – Montana Office
Baucus Federal Building
10 West 15th Street, Suite 3200
Helena, Montana 59626

Erin Agee
Senior Assistant Regional Counsel
US EPA Region 8 Office of Regional Counsel
CERCLA Enforcement Section
1595 Wynkoop Street
Denver, CO 80202
Mail Code: 8ORC-C

Daryl Reed
DEQ Project Officer
P.O. Box 200901
Helena, Montana 59620-0901

Jonathan Morgan, Esq.
DEQ, Legal Counsel
P.O. Box 200901
Helena, Montana 59620-0901

Re: Butte Priority Soils Operable Unit (BPSOU) Draft Final Insufficiently Reclaimed Sites – Field Sampling Plan (FSP) BRES No. 134 – Star West Dump.

Dear Agency Representatives:

I am writing to you on behalf of Atlantic Richfield Company (Atlantic Richfield) to submit the Butte Priority Soils Operable Unit (BPSOU) Draft Final Insufficiently Reclaimed (IR) Sites – Field Sampling and Investigation Plan (FSP) Butte Remediation Evaluation System (BRES) No. 134 – Star West Dump.

As described in Appendix D, Attachment C, Section 7.0 of the 2020 BPSOU Consent Decree (CD) (available at <https://www.co.silverbow.mt.us/2161/ButtePriority-Soils-Operable-Unit-Consent-Decree>), sites listed as IR Solid Media Sites within the BPSOU were reclaimed prior to the establishment of the Butte Hill Revegetation Specifications (BHRS), Appendix A to the CD. Since additional reclamation work may be required to bring the sites into compliance with the BHRS, the sites will be evaluated to assess past actions and to identify any site-specific conditions that fail to meet the BHRS.

The site evaluation will include a review of available BRES field evaluations and site construction completion reports (as available) and on-site evaluation and sampling. The site evaluation will include sampling within the existing site boundary performed according to the Atlantic Richfield *2023 Final Insufficiently Reclaimed Sites Quality Assurance Project Plan (QAPP)* (referred to herein as IR Sites QAPP). A link to the IR Sites QAPP is provided in Attachment 1.

This FSP describes field evaluation of the IR Site, BRES No. 134 – Star West Dump. The sampling boundary and proposed soil sampling stations and deficiencies identified during previous BRES evaluations are shown on Figure 1.



Field sampling within the existing boundary will be performed to determine whether contaminants are present, whether the existing cap and supported growth media are sufficiently protective of human health and the environment, how observed site conditions compare to the BHRS, and whether there are previously unidentified conditions contributing to site deficiencies.

The site evaluation is anticipated to be completed in 2023, contingent upon approval and access. A site summary and declaration will be prepared to present all available site data and describe which, if any, BHRS criteria are not met. The site will be evaluated following the Commercial Land Use Soil Action Levels for Human Health Soil Screening Criteria and cover soil Chemical Suitability Criteria provided in the IR Sites QAPP. Samples obtained outside of the existing reclaimed area will be evaluated following the Soil Action Levels for Human Health and Soil Screening Criteria for Waste Identification in the Atlantic Richfield 2023 *Final Unreclaimed (UR) Sites QAPP* (referred to herein as UR Sites QAPP). A link to the UR Sites QAPP is provided in Attachment 1.

If further remediation is recommended after the evaluation and sampling is complete, a remedial action work plan (RAWP) describing actions that will be implemented at the site will be provided for Agency review and approval.

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

Element	Reference Location		
	FSP	IR Sites QAPP	UR Sites QAPP
Title Page and Approval Authority	Approval Letter	Page i	Page i
Site Introduction and Appropriate Agency-Approved QAPP Reference	Page 1, Page 2		
Data Quality Objectives		Section 2.5	Section 2.5
Site and Sampling Objectives	Figure 1	Section 3.0	Section 3.0
Proposed Schedule for Site Field Work	Page 2		
Site Figure	Figure 1		
Sampling Procedures and Standard Operating Procedures (SOPs)		Section 3.2 Appendix B	Section 3.2 Appendix B
Sample Analysis Methods		Section 3.3	Section 3.3

Background

The Star West Dump (BRES No. 134) is approximately 4 acres located east of Clark Street, southeast of the Abundant Life Fellowship Church, and is adjacent to a residential area. The Dexter Mill (BRES No. 133) is located to the northeast. As described in the BPSOU *Source Areas and Reclaimed*

*Boundary Adjustments*¹, ARCO performed reclamation in 1991. Reclamation activities included combining waste materials and materials from the adjacent South Travona area and recontouring the area along with site grading. A 2-inch layer of crushed limestone rock from the Anaconda Quarry was applied, and approximately 18 inches of cover soil from a stockpile near Interstate 90 near the Iron Street exit was applied. Granular 11-52-0 fertilizer was broadcast at a rate of approximately 300 pounds per acre and chisel plowed to a 6-inch depth. Walkerville EPA seed mixture, described in the BPSOU *Solid Media Management Program Plan*², was planted at a rate of 25 pounds per acre using a double disc drill seeder, and wheat straw mulch was applied at a rate of 2 tons per acre with a straw spreader and crimped in place.

An adjusted boundary has been proposed for BRES No. 134 –Star West Dump to accurately represent the reclaimed area and align site boundaries with site remediation efforts completed on the site. As described in the BPSOU *Source Areas and Reclaimed Boundary Adjustments*¹, this was completed by using a high-resolution aerial image and visual comparisons to identify the areas of apparent remediation. Note, the proposed adjusted boundary has not been approved by the Agencies. To verify the proposed adjusted boundary, samples will be collected in areas that are included in the proposed boundary area, but just outside of the original boundary area.

Previous Evaluation Findings

As specified in the CD, information collected during previous site investigations has been reviewed and incorporated into the proposed sampling design. Pioneer Technical Services, Inc. and Butte-Silver Bow (BSB) personnel completed field verification of the site boundary. Given the date of reclamation, the site should be investigated to ensure the engineered cap is adequate for operation and maintenance.

The site was evaluated in 2015 and 2019 during the recurring 4-year cycle of field evaluations of previously reclaimed sites within the BPSOU. The results of both field evaluations indicate several of the same issues throughout the site; however, the 2020 evaluation suggests the conditions are deteriorating. A large amount of mustard along with knapweed and cheatgrass are present throughout the site. Storm water erosion and multiple depositional areas found on the site are contributing to the low vegetation areas on site. The 2015 and 2019 evaluations suggested implementing storm water controls on the site. A dirt and asphalt covered parking lot was evaluated, and no issues were present. The proposed boundary change excludes the asphalt portion of the parking lot. A land slump was identified in the southern area of the site and two sections of the fence need repair.

The private properties to the north and southwest of the site were sampled under the Residential Metals Abatement Program (RMAP) program. Only one residence's yard was remediated. Note that the private properties to the west, outside of the existing site boundary, have not been sampled, and outreach protocol under RMAP is recommended. Sample results from the previously

¹ Atlantic Richfield Company and Butte-Silver Bow, 2022. Draft Final Source Areas and Reclaimed Boundary Adjustments. Prepared by Pioneer Technical Services, Inc. April 4, 2022.

² Atlantic Richfield Company, 2022. Revised Draft Final Solid Media Management Program Plan. Prepared by Pioneer Technical Services, Inc. August 1, 2022.

performed RMAP sampling events will be included in the forthcoming evaluation summary report, if available.

Previous Sampling Efforts

The Geocortex web-based database at <https://eis2.woodardcurran.com/Html5Viewer/index.html?viewer=BPButte.BPSOU> contains the records for previous soil samples collected within the BPSOU. No previous sample stations are located on BRES 134 – Star West Dump. The BPSOU soil action levels and screening criteria are listed in Table 1 and Table 2, respectively, in Section 2.5 of the IR Sites QAPP.

Preliminary Site Evaluation

A preliminary site evaluation was conducted during development of this sampling plan to inspect current site conditions and identify focus areas for further investigation which included site photographs. The investigation found sediment collection around the parking area, well-established vegetation with barren areas interspersed, and various weeds throughout the site. Photograph 1 through Photograph 3 show current site conditions.



Photograph 1: Overview of site looking north.

Overall, the site is in good condition. Site edges are presenting with rills and sedimentation deposition onto Bryant Street. The site contains a good vegetation cover, with a few barren areas

located throughout the site. The dirt parking lot is contributing to sediment collection on the edges from a possible area where snow is plowed in the winter months.



Photograph 2: Barren area located near the west side of the dirt parking area.

The dirt parking lot is contributing to sediment collection on the edges where snow is plowed in the winter months. A barren area and slight rilling on the north slope are developing.



Photograph 3: Barren area.

A barren area was observed to the south of the dirt parking lot where a garage was recently constructed and fill material may have been imported for the construction of this building.

Figure 1 illustrates the proposed sample stations as sited during the preliminary site evaluation. Adjusted boundary lines, previous sample locations, and other previous findings are included on Figure 1.

Site Characterization Plan

Per the IR Sites QAPP, the site will be sampled at two depth intervals [(1) 0 to 6 inches and (2) 6 to 18 inches] to determine whether waste is present and/or confirm the depth of previous reclamation efforts. 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 number and depth of samples as dictated by field conditions.

Samples collected within the approved BRES boundary will be sampled following procedures in the IR Sites QAPP using a systematic procedure to determine the extent of waste present, previous reclamation, and transient material. Samples collected outside of the original BRES boundary will be collected following protocol described in the 2023 UR Sites QAPP. Samples obtained outside of the original boundary will be obtained from three depth intervals [(3) 0 to 2 inches, (4) 2 to 6 inches, and (5) 6 to 12 inches] per the UR Sites QAPP sampling protocol.

Field and laboratory analytical results will be used to prepare the site declaration and prescribe site remedial improvements.

Existing site grading and drainages will be evaluated to determine storm water flow patterns and identify whether additional storm water controls will help prevent sediment migration. Contributing sources of storm water upgradient and adjacent to the site will also be investigated.

At minimum, items identified below, but not specifically detailed in the QAPP, may be evaluated to determine adequacy and to identify if additional remedial measures are necessary. Additional items also may be identified during the remedial design process.

- Evaluate relative percent vegetative cover (as needed).
 - Coordinate and confirm plant species with biology/plant ecologist or related subject matter expert (as needed).
- Evaluate the performance of existing storm water controls to mitigate run-on/runoff.
- Evaluate location and condition of existing storm water controls.
- Identify potential remedial improvements to mitigate site erosion and vegetative areas to meet the BHRS.
- Identify necessary maintenance for successful long-term operation.
- Evaluate steep slopes for erosion of possible mining waste and potential for regrading.

The final remedial cap configuration (i.e., vegetative or engineered) will be coordinated with the landowner's end usage. A final RAWP will be provided for Agency review and approval prior to implementation.

Sampling Procedure

All soil sampling and characterization activities and procedures within the existing site boundary will follow the IR Sites QAPP. Samples will be obtained from the sample stations listed below. The IR Sites QAPP describes the quality assurance/quality control policies and procedures that will be used during sample collection and analyses.

Sample Station	Two Depth Intervals (inches)
IR-134-SS01	(1) 0-6, (2) 6-18
IR-134-SS02	(1) 0-6, (2) 6-18
IR-134-SS03	(1) 0-6, (2) 6-18
IR-134-SS04	(1) 0-6, (2) 6-18
IR-134-SS05	(1) 0-6, (2) 6-18
IR-134-SS06	(1) 0-6, (2) 6-18
IR-134-SS07	(1) 0-6, (2) 6-18
IR-134-SS08	(1) 0-6, (2) 6-18
IR-134-SS09	(1) 0-6, (2) 6-18
IR-134-SS10	(1) 0-6, (2) 6-18
IR-134-SS11	(1) 0-6, (2) 6-18
IR-134-SS12	(1) 0-6, (2) 6-18
IR-134-SS13	(1) 0-6, (2) 6-18
IR-134-SS14	(1) 0-6, (2) 6-18

All soil sampling and characterization activities and procedures outside of the existing site boundary will follow the UR Sites QAPP. Samples will be obtained from the sample stations listed below.

Sample Station	Three Depth Intervals (inches)
IR-17-SS15	(3) 0-2, (4) 2-6, (5) 6-12
IR-17-SS16	(3) 0-2, (4) 2-6, (5) 6-12
IR-17-SS17	(3) 0-2, (4) 2-6, (5) 6-12
IR-17-SS18	(3) 0-2, (4) 2-6, (5) 6-12

This field work is anticipated to be completed in 2023, depending on site conditions.

Site Summary Report and Declaration

After the site evaluation and data collection activities are complete, a site evaluation summary report will be prepared and submitted to Agencies for review and approval. The report will include

a summary of all available site sampling data and a site declaration specifying any deficient criteria as specified in the CD.

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

Sincerely,

Mike McNulty

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

Attachments:

Figure 1 – Insufficiently Reclaimed Sites BRES No. 134 – Star West Dump Proposed Sample Stations

Attachment 1 – Document Links

Attachment 2 – FSP Submittal List

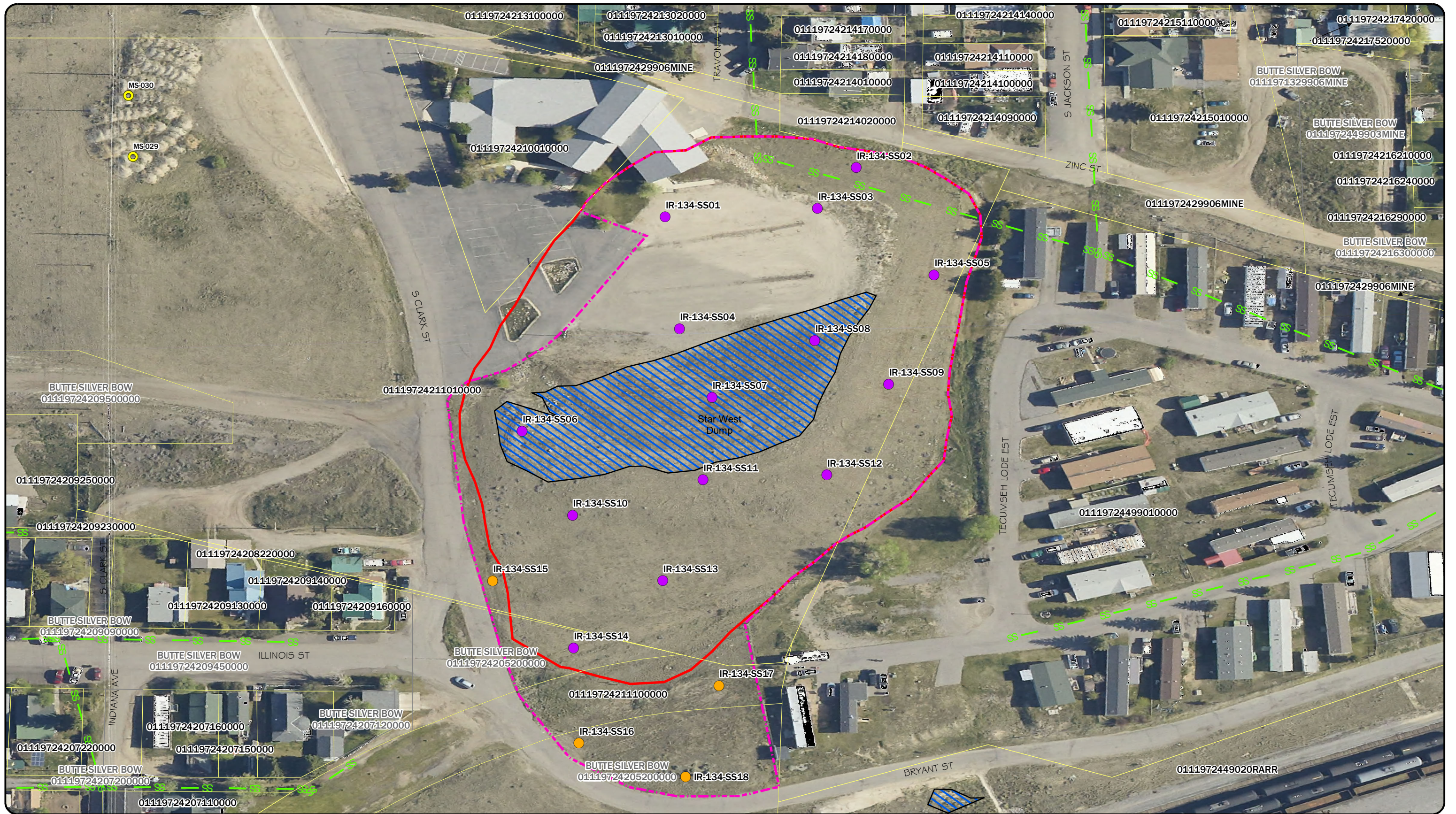
Cc: Chris Greco / Atlantic Richfield – email
Josh Bryson / Atlantic Richfield – email
Loren Burmeister / Atlantic Richfield – email
Dave Griffis / Atlantic Richfield – email
Jean Martin / Atlantic Richfield – email
Irene Montero / Atlantic Richfield – email
David A. Gratson / Environmental Standards – email
Mave Gasaway / DGS – email
Adam Cohen / DGS – email
Brienne McClafferty / Holland & Hart – email
David Shanight / CDM - email
Curt Coover / CDM - email
James Freeman / DOJ - email
Amy Steinmetz / DEQ - email
Dave Bowers / DEQ – email
Katie Garcin-Forba / DEQ – email
Carolina Balliew / DEQ - email
Jim Ford / NRDP - email
Pat Cunneen / NRDP - email
Katherine Hausrath / NRDP - email
Ted Duaine / MBMG - email
Gary Icopini / MBMG - email
Becky Summerville / MR - email
John DeJong / UP - email

Robert Bylsma / UP - email
John Gilmour / Kelley Drye - email
Leo Berry / BNSF - email
Robert Lowry / BNSF - email
Brooke Kuhl / BNSF – email
Lauren Knickrehm / BNSF - email
Doug Brannan / Kennedy Jenks - email
Matthew Mavrinac / RARUS - email
Harrison Roughton / RARUS - email
Brad Gordon / RARUS - email
Mark Neary / BSB - email
Eric Hassler / BSB - email
Julia Crain / BSB - email
Brandon Warner / BSB – email
Abigail Peltomaa / BSB - email
Eileen Joyce / BSB – email
Sean Peterson/BSB – email
Josh Vincent / WET - email
Scott Bradshaw / W&C – email
Emily Stoick / W&C – email
Pat Sampson / Pioneer – email
Andy Dare / Pioneer – email
Karen Helfrich / Pioneer – email
Randa Colling / Pioneer – email
Ian Magruder/ CTEC – email
CTEC of Butte – email
Scott Juskiewicz / Montana Tech – email

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

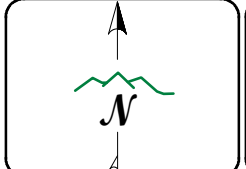
Figures

Figure 1 – Insufficiently Reclaimed Sites BRES No. 134 – Star West Dump Proposed Sample Stations



- SAMPLE UNDER IR QAPP
- SAMPLE UNDER UR QAPP
- HISTORIC SAMPLE STATIONS
- SS — SANITARY SEWER
- Proposed IR Boundary Changes
- PROPERTY OWNERSHIP
- ACCESS PROPERTY OWNERSHIP
- BRES EVALUATION VEGETATIVE IMPROVEMENT
- BRES BOUNDARY (ORIGINAL)

THE PARCEL BOUNDARIES SHOWN ARE FOR REFERENCE USE ONLY AND DO NOT REPRESENT A LEGAL SURVEY



DISPLAYED AS: _____
 PROJECTION/ZONE: MSP
 DATUM: NAD 83
 UNITS: INT'L FT
 SOURCE: PIONEER/BSB/AR/QSI 2020

0 50 100 200
Feet

FIGURE 1
 INSUFFICIENTLY RECLAIMED
 SITE BRES No.134 STAR WEST DUMP

DATE: 7/5/2023

Attachment 1
Document Links

Document Links

Insufficiently Reclaimed Sites QAPP:

<https://pioneertechnicalservices.sharepoint.com/:f:/s/submitted/EuRW3KcNuu9CqOHRiP3ENvsBOUc-dYqdITUbZZtCVROTAA>³

Unreclaimed Sites QAPP:

<https://pioneertechnicalservices.sharepoint.com/:f:/s/submitted/EtZbDgcepsdEie6VxUMdW88BbKopRVYj5ZsLN0sG3RkrhA>⁴

³ Please note that the link provided is valid for one year from the date of this submittal.

⁴ Please note that the link provided is valid for one year from the date of this submittal.

Attachment 2
FSPs Submittal List

Site	Submittal Date	Approval Date
BRES No. 104 – Colorado Dump Shaft	9/29/2021	11/5/2021
BRES No. 104 – Colorado Dump Shaft, Final Revised	12/2/2021	12/6/2021
BRES No. 154 – Clark Mill Tailings NE	12/1/2021	12/6/2021
BRES No. 30 – Atlantic-1	1/12/2022	2/22/2022
BRES No. 16 – Curry	1/12/2022	2/22/2022
BRES No. 8 – Belle of Butte	3/11/2022	9/26/2022
BRES No. 38 – Sister Dump	6/16/2022	9/26/2022
BRES No. 32 – Corra 2 Dump	6/20/2022	6/30/2022
BRES No. 158 – Waste Rock Dump	6/20/2022	7/11/2022
BRES No. 50 Zelia	6/22/2022	6/30/2022
BRES No. 93 – Soudan Dump	6/23/2022	6/30/2022
BRES No. 96 Washoe Dump	6/23/2022	7/11/2022
BRES No. 133 – Dexter Mill	7/14/2022	7/26/2022
BRES No. 37 – Josephine Shaft	7/20/2022	7/26/2022
BRES No. 34 – Eveline Dump	7/22/2022	8/2/2022
BRES No. 17 – Paymaster	7/25/2023	
BRES No. 31 – Waste Dump #5	7/25/2023	
BRES No. 48 – Old Glory West	7/25/2023	
BRES No. 66 – West Ruby Dump	7/25/2023	
BRES No. 134 – Star West Dump	7/25/2023	
BRES No. 174 – Buffalo South and Buffalo Ditch	7/25/2023	
BRES No. 84 – Mandan Park		