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EPA REGION 8 QA DOCUMENT REVIEW CROSSWALK

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EPA REGION 8 QA DOCUMENT REVIEW CROSSWALK

QAPP/FSP/SAP for: <i>(check appropriate box)</i>	Entity (<i>grantee, contract, EPA AO, EPA Program, Other</i>)	Regulatory Authority	<input type="checkbox"/> 2 CFR 1500 for Grantee/Cooperative Agreements
<input type="checkbox"/> GRANTEE	BSB County and AR	and/or	<input type="checkbox"/> 48 CFR 46 for Contracts
<input type="checkbox"/> CONTRACTOR			<input type="checkbox"/> Interagency Agreement
<input type="checkbox"/> EPA			<input type="checkbox"/> EPA/Court Order
<input type="checkbox"/> Other			<input type="checkbox"/> EPA Program Funding
Document Title <i>[Note: Title will be repeated in Header]</i>	BPSOU Draft Final Residential Metals Abatement Program QAPP (Residential Parcels) (01/10/2022)	Funding Mechanism	<input type="checkbox"/> EPA Program Regulation
QAPP/FSP/SAP Preparer	AR and BSB County		<input type="checkbox"/> EPA CIO 2105
Period of Performance <i>(of QAPP/FSP/SAP)</i>	2022	Date Submitted for Review	01/10/2022
EPA Project Officer EPA Project Manager	Nikia Greene	PO Phone # PM Phone #	
QA Program Reviewer or Approving Official	Nikia Greene	Date of Review	02/07/18

Documents Submitted for QAPP Review (QA Reviewer must complete):

1. QA Document(s) submitted for review:

QA Document	Document Date	Document Stand-alone	Document with QAPP
QAPP	6/29/17	Yes / No	
FSP		Yes / No	Yes / No
SAP		Yes / No	Yes / No
SOP(s)	(attached)		Yes / No

2. WP/SOW/TO/PP/RP Date _____

WP/SOW/TO/PP Performance Period _____

3. QA document consistent with the:

WP/SOW/PP for grants? Yes / No

SOW/TO for contracts? Yes / No

4. QARF signed by R8 QAM Yes / No / NA

Funding Mechanism IA / contract / grant / NA

Amount _____

Notes for Document Submittals:

- A QAPP written by a Grantee, EPA, or Federal Partner must include for review: Work Plan(WP) / Statement of Work (SOW) / Program Plan (PP) / Research Proposal (RP) and funding mechanism
- A QAPP written by Contractor must include for review:
 - Copy of Task Order Work Assignment/SOW
 - Reference to a hard or electronic copy of the contractor’s approved QMP
 - Copy of Contract SOW if no QMP has been approved
 - Copy of EPA/Court Order, if applicable
 - The QA Review must determine (with the EPA CO or PO) if a QARF was completed for the environmental data activity described in the QAPP.
- Field Sampling Plan (FSP) and/or Sampling & Analyses Plan (SAP) must include the Project QAPP or must be a stand-alone QA document that contain all QAPP required elements (Project Management, Data Generation/Acquisition, Assessment and Oversight, and Data Validation and Usability).
 - SOPs must be submitted with a QA document that contains all QAPP required elements.

Summary of Comments (highlight significant concerns/issues):

- A QAPP is a formal document describing in comprehensive detail the necessary QA, QC, and other technical activities that must be implemented to ensure the results of the work performed will satisfy the stated performance criteria. The QAPP must be a stand-alone document that specifies the project’s technical and

quality objectives, the intended measurements, data generation, and data acquisition methods appropriate for achieving project objectives. A few references to external documents have been made in this version of the QAPP. The information contained in these external references need to be included in the QAPP and not rely on finding or obtaining the external document. Another deficiency is the lack of discussion of field QC measures and sampling. Please eliminate all reference to the CFRSSI documents/standard operating procedures and include stand-alone support documentation specific to these data collection activities. In addition, please include a reference to the BPSOU Data Management Plan, which EPA understands is still being developed by AR and BSB.

Atlantic Richfield Response (1/10/22): Field QC measures and project-specific standard procedures have been included in the revised document. Reference to the CFRSSI documents and SOPs has been removed from the plan. The BPSOU Data Management Plan was submitted to the Agencies for review and comment on December 22, 2017, and later approved in June 26, 2018.

2. As a critical component of the ROD, documenting all RMAP activities is important. This includes noting site deficiencies, preparing corrective actions, management of data including the use of existing data, and tracking site progress. This information is critical to EPA's ability to assess whether BPSOU ROD remedial action objectives are being met, and the RMAP must describe how records of these activities will be kept and maintained. Further, EPA must have access to the data collected under this QAPP and the ability to access and determine the status and records of the RMAP.

Atlantic Richfield Response (1/10/22): Section 2.9 in the revised QAPP describes documents and records. The RMAP database has been developed and is in use. The database is available for Agency access and additional comments and functionality requests. Atlantic Richfield and Butte-Silver Bow would like to coordinate Agency testing of the database with the program architects and primary users in a manner to minimize provision of written comment, and the potential misinterpretation of those comments. Ideally, this coordinated review and testing would occur concurrently with the Agencies review of the RMAP QAPP.

3. In 2011, the Explanation of Significant Differences added the Expanded Area to allow for attic sampling of residential properties outside of the BPSOU as part of the RMAP. With the recent attention given to the West Side Soils Operable Unit, EPA proposes to address contamination concerns outside of the BPSOU to allow for residential yard soil, interior living space dust, and lead-based paint sampling to occur as-needed or by request in the Expanded Area. Sampling adjacent areas outside of the Expanded Area will be permitted on a case-by-case basis. Please modify the RMAP QAPP to include all sampling types within the Expanded Area (and adjacent to the Expanded Area case-by-case) after receiving a request or a development proposal that could lead to a potential exposure pathway at a residential property.

Atlantic Richfield Response (1/10/22): Atlantic Richfield and Butte-Silver Bow have agreed to expansion of the RMAP (yards and attics) to the geographic extent indicated on Figure 1. Testing of properties outside of the BPSOU boundary (see Figure 1), yet falling within the 2020 RMAP Area, will be performed on a "by request" basis as defined in the RMAP Plan and QAPP.

4. As discussed further below, additional sampling efforts are needed for parks and play areas within the BPSOU and to address residential properties or sections where soil sampling may only have occurred in the 0-2 inch depth interval. In addition, updating and clarification on the data validation requirements is needed.

Atlantic Richfield Response (1/10/22): Section 3.2.1.1 describes previously sampled properties that were sampled to a 0-2 inch depth. Section 6.0 in the revised QAPP describes the validation to produce Level 4, enforcement quality data validation packages.

Atlantic Richfield and Butte-Silver Bow have also agreed to include parks, play areas, schools, and commercial properties with residential living spaces within the RMAP. Discussion of these program additions are provided in the Agency approved BPS OU Final Residential Metals Abatement Program QAPP (Non-Residential Parcels) (7-9-21).

5. The QAPP needs to clarify whether XRF or EPA methodologies will be used to analyze soil sampling within the RMAP. The QAPP seems to mostly specify that EPA standard methods will be used to analyze soils except in a few instances. For example, Sections 2.6.2, 3.8.3, and 7 have conflicting statements on which analytical method will be used for soils. Importantly, if XRF will be used to analyze soils, significant additions to the QAPP will be necessary. This includes a procedure for XRF sample preparation and analysis, submission of confirmation samples to establish XRF/wet laboratory correlations, evaluation of calibration verification checks against standard reference materials, and establishing an alternate XRF action level to limit remediation errors.

Atlantic Richfield Response (1/10/22): XRF is not proposed for soils analysis. On an emergency case of attic dust removal, XRF analysis may be used in conjunction with consultation with Agencies. The XRF unit will be used to test surfaces for lead-based paint. The QAPP has been revised to clarify use of XRF and eliminate conflicting statements.

6. Further details for the sampling of parks, schools, and commercial properties should be added to the QAPP. EPA anticipates that sampling these locations will be based on site-specific conditions. Please specify that EPA will be notified prior to the sampling of parks, schools, and commercial properties.

Atlantic Richfield Response (1/10/22): Sampling details regarding parks, schools, and commercial properties containing living space are provided in the Agency approved BPS OU Final Residential Metals Abatement Program QAPP (Non-Residential Parcels) (7-9-21).

7. AR/BSB County should expect that revisions to the RMAP QAPP will be necessary on an annual basis. EPA anticipates that the effort to produce the updated RMAP QAPP will be reduced as refinements are made each year.

Atlantic Richfield Response (1/10/22): Atlantic Richfield Response: The QAPP will be reviewed annually and updates completed as needed to accurately reflect program needs.

8. The BSB County and AR must address the comments in the Summary of Comments, as well as those identified in the Comment section(s) that includes a “Response (date)” and Resolved (date)”. In the crosswalk below, please provide your response in a different text color.

Element	Acceptable Yes/No/NA	Page/ Section	Comments
A. Project Management			
A1. Title and Approval Sheet			
a. Contains project title	Yes	Title page and page i	EPA: No comments.
b. Date and revision number line (for when needed)	No	Title page and page i	EPA: Add a revision number line to the title and approval pages. Atlantic Richfield Response (1/10/22): Text added.
c. Indicates organization’s name	Yes	Title page	EPA: No comments.
d. Date and signature line for organization’s project manager	Yes	Page i	EPA: No comments.
e. Date and signature line for organization’s QA manager	No	Page i	EPA: Add “Quality Assurance Approval Official” to Nikia Greene’s signature line. Atlantic Richfield Response (1/10/22): Text added.

f. Other date and signatures lines, as needed	Yes	Page i	EPA: No comments.
A2. Table of Contents			
a. Lists QA Project Plan information sections	Yes	Pages iii to vi	EPA: No comments.
b. Document control information indicated	Yes	Page v	EPA: No comments.
A3. Distribution List			
Includes all individuals who are to receive a copy of the QA Project Plan and identifies their organization	Yes	Page ii	EPA: No comments.
A4. Project/Task Organization			
a. Identifies key individuals involved in all major aspects of the project, including contractors	No	Sections 2.0 through 2.3	<p>EPA: The names of the key individuals need to be provided here in Sections 2.1 through 2.3 or, alternatively, in a new table. EPA realizes periodically there will be personnel changes – these changes can be captured in the annual review and update of the QAPP.</p> <p>Atlantic Richfield Response (1/10/22): Sections 2.1 through 2.3 address this requirement at the organization level. Specific names, titles, and project roles are provided in the revised RMAP QAPP (Residential Parcels). An updated organizational chart is also provided in the revised QAPP (Residential Parcels) Figure 2.</p>
b. Discusses their responsibilities	Yes	Sections 2.0 through 2.3	EPA: No comments.
c. Project QA Manager position indicates independence from unit generating data	No	Section 2.3 (formerly Section 2.2), Figure 2	<p>EPA: The QA manager was not specified. The responsibilities of the QA manager need to be added.</p> <p>Atlantic Richfield Response (1/10/22): Section 2.3 was revised to clearly identify the role of the Superfund Quality Assurance Manager.</p>
d. Identifies individual responsible for maintaining the official, approved QA Project Plan	No	Section 2.3	<p>EPA: The individual responsible for maintaining the official approved QAPP was not specified.</p> <p>Atlantic Richfield Response (1/10/22): Section 2.3 was revised to clearly identify that the BSB Department of Reclamation and Environmental Services Director is responsible for maintaining the official approved RMAP QAPP (Residential Parcels), and for ensuring that the work is performed in accordance with the requirements contained in the RMAP QAPP (Residential Parcels).</p>

<p>e. Organizational chart shows lines of authority and reporting responsibilities</p>	<p>No</p>	<p>Figure 2</p>	<p>EPA: The figure currently shows responsibilities extraneous to the RMAP program. An organizational chart specific only to the RMAP (with names) should be prepared. Additionally, other stakeholders should be depicted (such as AR, EPA/DEQ, QA Manager).</p> <p>Atlantic Richfield Response (1/10/22): A revised organizational chart is provided in Figure 2 of the RMAP QAPP (Residential Parcels).</p>
<p>A5. Problem Definition/Background</p>			
<p>a. States decision(s) to be made, actions to be taken, or outcomes expected from the information to be obtained</p>	<p>No</p>	<p>Sections 1.0 and 2.5 (formerly Section 2.4)</p>	<p>EPA: In Section 1.1, remove the two references to the Uniform Federal Policy for QAPPs (i.e., EPA 2005). This document is not in the format of a UFP-QAPP. Edit the reference section accordingly. Replace the second to last sentence of the first paragraph of Section 1.1 with: "This QAPP has been developed in accordance with the EPA Requirements for Quality Assurance Project Plans, EPA QA/R-5 (EPA 2001), the Guidance on Systematic Planning Using the Data Quality Objectives Process, EPA QA/G4 (EPA 2006), and the EPA Region 8 Quality Assurance Document Review Crosswalk checklist (EPA 2016)." In Section 2.4, modify the second sentence to read "„,the soil sampling depth from 0 to 2 inches to the depth intervals provided in Section 3.2; changed the soil removal..." The 0-2, 2-6, and 6-12 depth intervals are discussed in Sections 3.2.1 as well as 3.2.2.</p> <p>Atlantic Richfield Response (1/10/22): The requested modifications were made to Section 1.1 and Sections 2.5 (formerly Section 2.4). Section 1.1 was revised to "This QAPP has been developed in accordance with the EPA Requirements for Quality Assurance Project Plans, EPA QA/R-5 (EPA 2001), the Guidance on Systematic Planning Using the Data Quality Objectives Process, EPA QA/G4 (EPA 2006), and the EPA Region 8 Quality Assurance Document Review Crosswalk checklist (EPA, 2016a)."</p> <p>Section 2.5 (formerly Section 2.4 in previous version of the document) was revised to "This QAPP was developed in response to the EPA and Montana DEQ (the Agencies) 2006 Record of Decision (ROD) (EPA, 2006b) and Explanation of Significant Differences (ESD) to the 2006 Butte Priority Soils Operable Unit Record of Decision (EPA, 2011a). The ESD modified the soil sampling depth from 0 to 2 inches to the depth intervals provided in</p>

			<i>Section 3.2; changed the soil removal from a minimum depth of 18 inches to the minimum depth of 12 inches or to the soil bedrock interface if less than 12 inches; and extended the project schedule to accommodate expansion of the program."</i>
b. Clearly explains the reason (site background or historical context) for initiating this project	Yes	Sections 2.5 & 2.6 (Formerly Sections 2.4 & 2.5)	EPA: No comments.
c. Identifies regulatory information, applicable criteria, action limits, etc. necessary to the project	No	Section 2.1	EPA: In Section 2.1, modify the last sentence to read: "The Agencies also review sampling results, including those above the action levels listed in Table 1, and project completion reports." Atlantic Richfield Response (1/10/22): Section 2.1 has been updated as requested.
A6. Project/Task Description			
a. Summarizes work to be performed, for example, measurements to be made, data files to be obtained, etc., that support the projects goals	No	Sections 1.0 and 2.6 (formerly Section 2.5)	EPA: In the second paragraph of Section 1.0 and fourth paragraph of Section 2.5, add interior air monitoring for mercury vapor to the list of sampling tasks. Atlantic Richfield Response (1/10/22): Section 1.0 has been modified to state " <i>The potential sources of lead, arsenic, and/or mercury exposure addressed in the Program include lead, arsenic, and mercury in yard soil and interior living space dust, lead in interior and/or exterior LBP and drinking water from pipe solder, mercury exposure through attic dust when exposure pathways are identified and/or earthen basement soil, and interior air monitoring for mercury vapor.</i> " Section 2.6 (formerly Section 2.5), fourth paragraph has been modified to state " <i>The Program stipulates sampling residential yard soil, interior living space dust, attic dust, LBP, and interior air monitoring for mercury vapor within the BPSOU and by-request environmental sampling and remediation, if necessary, of residential properties outside of BPSOU, but within the 2020 RMAP Area shown in Figure 1</i> ".

b. Provides work schedule indicating critical project points, e.g., start and completion dates for activities such as sampling, analysis, data or file reviews, and assessments	Yes	Section 2.6 (formerly Section 2.5)	EPA: No comments.
c. Details geographical locations to be studied, including maps where possible	Yes	Sections 1.0 and 2.6 (formerly Section 2.5), Figure 1	EPA: No comments.
d. Discusses resource and time constraints, if applicable	Yes	Section 2.6.1 (formerly Section 2.5.1)	EPA: No comments.
A7. Quality Objectives and Criteria			

<p>a. Identifies</p> <ul style="list-style-type: none"> - performance/measurement criteria for all information to be collected and acceptance criteria for information obtained from previous studies, - including project action limits and laboratory detection limits and - range of anticipated concentrations of each parameter of interest 	<p>No</p>	<p>Section 2.7.1 (formerly Section 2.6.1)</p>	<p>EPA: In Step 1, Table 1 specifies the analytical method for mercury vapor as “OSHA ID-140”; however, this method applies to the use of sorbent dosimeters analyzed by a laboratory, not a portable instrument like the TRACKER-3000. If sorbent dosimeters are being utilized (e.g., for confirmation measurements), this needs to be discussed further in the QAPP. In Step 2, add study questions for the other types of sampling being conducted (e.g., mercury vapor in air, indoor dust, etc.). Also add text on what actions may result. A table with the study questions and resulting actions may be a good way to provide this information. In Step 3, the text provides a good start describing the information inputs, but is incomplete. A summary of all the inputs needed to resolve the study questions in Step 2 is needed as well as text describing the use of input to resolve each study question. A table with the study question, the input to resolve the question, and the use of the input to resolve the question may be a good way to provide this information. In Step 4, more information on the vertical boundaries should be added, such as the highest point in a residential property and depths of sampling. The temporal boundaries of the investigation include the time from when evaluation and sampling actions begin at each property to the time specific clearance or completion criteria are met. In Step 5, a decision rule for mercury vapor needs to be added. In the third indented paragraph, specify the depth(s) of removal that may be implemented. Also in Steps 2 and 5, provide a definition and usage for the term “outdoor dust”.</p> <p>Atlantic Richfield Response (1/10/22): Table 1 and project DQOs have been revised in the revised plan. The term “outdoor dust” is not applicable to the Program and has been removed.</p>
<p>b. Discusses precision</p>	<p>Yes</p>	<p>Sections 2.7.2 (formerly Section 2.6.2) and Section 3.8.7 (formerly Section 3.8.3)</p>	<p>EPA: No comments.</p>

c. Addresses bias	Yes	Sections 2.7.2 (formerly Section 2.6.2) and Section 3.8.7 (formerly Section 3.8.3)	EPA: No comments.
d. Discusses representativeness	Yes	Sections 2.7.2 (formerly Section 2.6.2) and Section 3.8.7 (formerly Section 3.8.3)	<p>EPA: It is not clear in the QAPP which soil samples will be analyzed by XRF and those that will be analyzed by EPA standard laboratory methods. For example, here in Section 2.6.2 discussing representativeness it is stated that "...in-place soils and backfill material will be analyzed by laboratory-grade XRF..." However, later in Section 3.8.1 it states that "...analyses will be in accordance with the EPA analytical method specifications...". Please clarify in the document when the different analytical methods will be used for soil analyses.</p> <p>Atlantic Richfield Response (1/10/22): The referenced text has been removed from Section 2.7.2 (formerly Section 2.6.2) in the revised document. Standard methods referenced in the document will be used.</p>
e. Identifies the need for completeness	Yes	Sections 2.7.2 (formerly Section 2.6.2) and Section 3.8.7 (formerly Section 3.8.3)	EPA: No comments.
f. Describes the need for comparability	Yes	Sections 2.7.2 (formerly Section 2.6.2) and Section 3.8.7 (formerly Section 3.8.3)	EPA: No comments.

g. Discusses desired method sensitivity	No	Add to Section 2.7.2 (formerly Section 2.6.2)	<p>EPA: Add a discussion regarding data sensitivity. For example, a discussion of the sensitivity of the TRACKER-3000 compared to the mercury vapor action level is needed.</p> <p>Atlantic Richfield Response (1/10/22): Sensitivity is related to the ability to compare analytical results with project-specific action levels. Analytical quantitation limits for the sample analytes should be below the level of interest to allow an effective comparison.</p> <p>Mercury vapor method detection limit has been added to Table 1.</p>
A8. Special Training/Certifications			
a. Identifies any project personnel specialized training or certifications	No	Section 2.8 (Formerly Section 2.7)	<p>EPA: In the first paragraph, make sure it is clear that this is RMAP training. Note any special training requirements for use of the XRF and/or mercury vapor analyzer. Also, all field personnel should have HAZWOPER training.</p> <p>Atlantic Richfield Response (1/10/22): Section 2.8 (formerly Section 2.7) has been updated as "All RMAP field personnel will review the requirements of this QAPP and receive training on Program-related tasks during a project meeting held prior to the beginning of fieldwork. A review of sampling procedures and requirements will be completed prior to field activities to ensure sample collection and handling methods are according to QAPP requirements. Field personnel will be trained in proper use of field equipment, sample collection tools, etc., and procedures according to field data collection SOPs (Attachment C-1 and C-2) and methods described in the Program. Field personnel performing sampling activities or members who can potentially contact contaminated materials should receive hazardous waste operations and emergency response (HAZWOPER) training."</p>
b. Discusses how this training will be provided	Yes	Section 2.8 (Formerly Section 2.7)	EPA: No comments.

c. Indicates personnel responsible for assuring training/certifications are satisfied	No	Section 2.8 (Formerly Section 2.7)	<p>EPA: The personnel responsible for this element need to be identified.</p> <p>Atlantic Richfield Response (1/10/22): Section 2.8 (formerly Section 2.7), second paragraph has been updated to state "<i>The BSB Department of Reclamation and Environmental Services Director is responsible for ensuring field personnel receive appropriate training and will maintain up-to-date training records and/or certifications. The BSB Department of Reclamation and Environmental Services Human Health/RMAP Division Manager will assure that each member of the sampling team obtains and is familiar with the recent version of the QAPP, will maintain signatures of each team member who has read the QAPP (including reviews and addenda, as necessary), and make sure each team member has been trained in the appropriate sample collection methods per the Program. The Human Health/RMAP Division Manager will review the SSHASP with all field personnel prior to fieldwork to assess the site's specific hazards and the control measurements that have been put in place to mitigate these hazards. The SSHASP review will also cover all other safety aspects of the site including site personnel responsibilities and contact information, additional site-specific safety requirements and procedures, and the emergency response plan.</i>"</p>
d. identifies where this information is documented	Yes	Section 2.8 (Formerly Section 2.7)	EPA: No comments.
A9. Documentation and Records			
a. Identifies report format and summarizes all data report package information	Yes	Section 2.9 (formerly Section 2.8)	EPA: No comments.
b. Lists all other project documents, records, and electronic files that will be produced	Yes	Section 2.9 (formerly Section 2.8)	EPA: No comments.

<p>c. Identifies where project information should be kept and for how long</p>	<p>No</p>	<p>Section 2.9 (formerly Section 2.8)</p>	<p>EPA: Add text on how the project information described in Section 2.8 can be obtained, where it is being stored, and for how long.</p> <p>Atlantic Richfield Response (1/10/22): Section 2.9 (formerly Section 2.8) has been revised to the include additional details regarding project storage, backup, and retention. All sampling data conducted for all media under the RMAP, including yard soils, attic dust, indoor dust and basement soils within the BPSOU and records of property access requests are housed within the RMAP database. The RMAP database is housed in an Access SQL server database and maintained by BSB. Document backups are contained in the BPSOU Document SharePoint and EPA document repository. Refer to the BPSOU Data Management Plan for additional details regarding data management, backup, and storage.</p>
<p>d. Discusses back up plans for records stored electronically</p>	<p>No</p>	<p>Section 2.9 (formerly Section 2.8)</p>	<p>EPA: Add more detail on how the data and information is backed up.</p> <p>Atlantic Richfield Response (1/10/22): Refer to response above.</p>

<p>e. States how individuals identified in A3 will receive the most current copy of the approved QA Project Plan, identifying the individual responsible for this</p>	<p>No</p>	<p>Section 2.8 (formerly Section 2.7)</p>	<p>EPA: Clarify how the QAPP will be distributed and identify the individual responsible for this.</p> <p>Atlantic Richfield Response (1/10/22): Atlantic Richfield will be responsible for distributing the original Agency approved QAPP to the individuals on the QAPP distribution list. Subsequent annual revisions will be distributed by the Butte Silver Bow Department of Reclamation and Environmental Services QA Manager. This is documented in text directly below the QAPP distribution list.</p> <p><i>Section 2.8 (formerly Section 2.7) has been revised to state "The BSB Department of Reclamation and Environmental Services Director is responsible for ensuring field personnel receive appropriate training and will maintain up-to-date training records and/or certifications. The BSB Department of Reclamation and Environmental Services Human Health/RMAP Division Manager will assure that each member of the sampling team obtains and is familiar with the recent version of the QAPP, will maintain signatures of each team member who has read the QAPP (including reviews and addenda, as necessary), and make sure each team member has been trained in the appropriate sample collection methods per the Program."</i></p>
<p>B. Data Generation/Acquisition</p>			
<p>B1. Sampling Process Design (Experimental Design)</p>			
<p>a. Describes and justifies design strategy, indicating size of the area, volume, or time period to be represented by a sample</p>	<p>No</p>	<p>Section 3.0</p>	<p>EPA: Given recent park sampling efforts in Anaconda, a fresh assessment of environmental conditions of all parks and play areas in the BPSOU and surrounding area is needed. A new section titled "Parks & Play Areas Sampling" needs to be added describing the compiling of existing park data, cataloguing response actions taken to date at parks and recreation sites, plans to fill data gaps with supplemental sampling, and the preparation of a data summary report for this sampling effort.</p> <p>Atlantic Richfield Response (1/10/22): Sampling details regarding parks, schools, and commercial properties containing living space are provided in the Agency approved BPSOU Final Residential Metals Abatement Program QAPP (Non-Residential Parcels) (7-9-21).</p>

<p>b. Details the type and total number of sample types/matrix or test runs/trials expected and needed</p>	<p>Yes</p>	<p>Sections 3.2, 3.3, 3.4, and 3.5</p>	<p>EPA: No comments.</p>
<p>c. Indicates where samples should be taken, how sites will be identified/located</p>	<p>No</p>	<p>Section 3.2.1</p>	<p>EPA: As originally stated in the BPSOU ROD, soil was to be sampled from the 0-2 inch depth interval, at a minimum. As modified in the 2011 BPSOU ESD, the residential yard sampling described in Section 3.2.1 calls for sampling from the 0-2 inch, 2-6 inch, and 6-12 inch depth intervals. EPA understands there may be properties where only the 0-2 inch depth interval was sampled in prior sampling and evaluation events. Please add text describing the identification of those properties where only 0-2 inch sampling has occurred and the plans to complete the sampling from the 2-6 and 6-12 inch depth intervals and taking appropriate follow-up action is action levels are exceeded.</p> <p>Atlantic Richfield Response (1/10/22): Section 3.2.1.1 Previously Sampled Properties has been added to address this sampling scenario. BSB will review the RMAP database to identify properties that were previously sampled to the 0-2 inch depth interval. Property owners of previously sampled properties where remediation was not completed will be contacted to request access to repeat the sampling to appropriate depth intervals. Sampling protocol described previously will be followed for the 2-6 inch and 6-12 inch depth intervals.</p> <p>Properties that were sampled at the 0-2 inch depth interval and remediated will not be resampled.</p>

d. Discusses what to do if sampling sites become inaccessible	Yes	Section 3.1	<p>EPA: This item refers to sampling sites that become inaccessible due, for example, to weather conditions, etc. Physically, access is not an anticipated issue during the RMAP sampling. However, EPA understands there may be property owners who refuse to participate in the RMAP. The Agencies will assist AR and BSB in these cases. An addendum to the RMAP will be provided, describing the assistance that will be taken.</p> <p>Atlantic Richfield Response (1/10/22): Additional language has been included in Section 3.1 regarding three documented attempts to gain access, and a reset of attempts with a change in property ownership. "After three attempts are recorded, the property will be flagged in the database (as either having declined access or becoming non-responsive) and the Agencies will be notified of the property status. At this time, the Agencies may elect to issue the property owner an enforcement letter. A copy of the Agency notice form letter is provided in Attachment B-3. Future changes in ownership will be monitored annually. If ownership changes, the access procurement process will be re-initiated."</p>
e. Identifies project activity schedules such as each sampling event, times samples should be sent to the laboratory, etc.	Yes	Sections 3.2, 3.3, 3.4, and 3.5	EPA: No comments.
f. Specifies what information is critical and what is for informational purposes only	Yes	Sections 3.2, 3.3, 3.4, and 3.5	EPA: No comments.
g. Identifies sources of variability and how this variability should be reconciled with project information	Yes	Step 6	EPA: No comments.
B2. Sampling Methods			

<p>a. Identifies all sampling SOPs by number, date, and regulatory citation, indicating sampling options or modifications to be taken</p>	<p>No</p>	<p>Sections 3.3 and 3.4</p>	<p>EPA: As noted in comments in other recent documents, the CFRSSI SOPs cited are out of date and need updating. The cited SOP from the <i>Interior and Attic Dust Sampling and Analysis Plan</i> (Atlantic Richfield, 2007) must be attached to this QAPP. Alternatively, an SOP for dust sampling could be prepared. QAPPs are intended to be stand-alone documents with all sampling information contained therein. The first sentence of the second paragraph in Section 3.3 is confusing as there is not a CFRSSI SOP for attic dust sampling. In Section 3.4, the HVS3 manual should be attached to the QAPP.</p> <p>Atlantic Richfield Response (1/10/22): The appropriate SOPs have been included in the revised QAPP.</p>
<p>b. Indicates how each sample/matrix type should be collected</p>	<p>Yes</p>	<p>Sections 3.2, 3.3, 3.4, and 3.5</p>	<p>EPA: No comments.</p>
<p>c. If in situ monitoring, indicates how instruments should be deployed and operated to avoid contamination and ensure maintenance of proper data</p>	<p>NA</p>	<p>NA</p>	<p>EPA: No in-situ instruments will be deployed.</p>
<p>d. If continuous monitoring, indicates averaging time and how instruments should store and maintain raw data, or data averages</p>	<p>NA</p>	<p>NA</p>	<p>EPA: No continuous monitoring instruments will be deployed.</p>
<p>e. Indicates how samples are to be homogenized, composited, split, or filtered, if needed</p>	<p>No</p>	<p>Section 3.8.2</p>	<p>EPA: Verify the sieve size needed for dust samples. Section 3.8.2 specifies a No. 18 sieve size, whereas the HVS3 method specifies and No. 100 sieve size.</p> <p>Atlantic Richfield Response (1/10/22): Section 3.8.2 has been revised to say “Discernable objects will be manually removed from bulk dust samples. The dust samples collected using conventional collection methods will then be digested according to EPA-modified Method 3050B and analyzed by EPA Method 6010 (ICP-AES) or EPA Method 6020 (ICP-MS) for arsenic and lead. Mercury concentrations will be determined per EPA Method 7471B (Manual Cold-Vapor Technique).”</p>

f. Indicates what sample containers and sample volumes should be used	Yes	Sections 3.2, 3.3, 3.4, and 3.5	<p>EPA: In Section 3.5.1 (formerly Section 3.6.1), please add the container type and sample volume requirement for the non-metals analysis.</p> <p>Atlantic Richfield Response (1/10/22): Lead based paint is analyzed in the field using the portable XRF analyzer. Physical samples are not obtained from the residence.</p>
g. Identifies whether samples should be preserved and indicates methods that should be followed	No	Section 3.5.2 (formerly Section 3.6.2)	<p>EPA: Regarding residential water sampling, add information to this section regarding the analytes to be requested (is it just lead?), bottle size required, and preservative.</p> <p>Atlantic Richfield Response (1/10/22): Section 3.5.2 (formerly Section 3.6.2) in the revised QAPP has been modified to include a 1,000 milliliter (mL) wide mouth plastic bottle. Table 1 has been updated to reflect lead only analysis for residential water samples.</p>
h. Indicates whether sampling equipment and samplers should be cleaned and/or decontaminated, identifying how this should be done and by-products disposed of	Yes	Section 3.2.4, SOP G-8, Manuals	<p>EPA: No comments except suggest adding notes that sampling equipment (e.g., the HSV3) will be decontaminated per manufacturer requirements.</p> <p>Atlantic Richfield Response (1/10/22): Section 3.2.4 has been revised to include the following text "Re-usable equipment may be decontaminated between sampling sites in accordance with manufacturer's recommendations and established SOPs (Attachment C-1 or C-2) and prior to being re-used."</p>
i. Identifies any equipment and support facilities needed	No	TBD	<p>EPA: Specify in the document where the sample preparation and XRF analytical work, if used, will be performed.</p> <p>Atlantic Richfield Response (1/10/22): XRF will only be used to test attic dust in emergency situations (Section 3.3.3) and to test for the presence of lead-based paint (Section 3.5.1). No physical samples are collected in either scenario. Field measurements are recorded.</p>
j. Addresses actions to be taken when problems occur, identifying individual(s) responsible for corrective action and how this should be documented	Yes	Section 5.0	EPA: No comments.
B3. Sample Handling and Custody			

a. States maximum holding times allowed from sample collection to extraction and/or analysis for each sample type and, for in-situ or continuous monitoring, the maximum time before retrieval of information	Yes	Section 3.6 (formerly Section 3.7.1)	EPA: No comments.
b. Identifies how samples or information should be physically handled, transported, and then received and held in the laboratory or office (including temperature upon receipt)	Yes	Section 3.6 (formerly Section 3.7.1)	EPA: No comments.
c. Indicates how sample or information handling and custody information should be documented, such as in field notebooks and forms, identifying individual responsible	Yes	Section 2.9.4 (formerly Section 2.8.4)	EPA: No comments.
d. Discusses system for identifying samples, for example, numbering system, sample tags and labels, and attaches forms to the plan	Yes	Section 3.7	EPA: No comments.
e. Identifies chain-of-custody procedures and includes form to track custody	Yes	Section 2.9.4 (formerly Section 2.8.4)	EPA: No comments.
B4. Analytical Methods			
a. Identifies all analytical SOPs (field, laboratory and/or office) that should be followed by number, date, and regulatory citation, indicating options or modifications to be taken, such as sub-sampling and extraction procedures	Yes	Section 3.8, Table 1, Attachment C (formerly Attachment 2), Attachment G (formerly Attachment 3, Section 7	EPA: Table 1 needs to make clear which analytical method will be used to analyze soils (i.e., XRF or EPA Methodology). Additionally, Ashe Analytics should be removed as a laboratory services provider. Atlantic Richfield Response (1/10/22): Table 1 has been updated to reflect that EPA Methodology will be used to analyze soil and dust samples with the exception of emergency dust sampling which will utilize field XRF. The revised QAPP does not include reference to Ashe Analytics.
b. Identifies equipment or instrumentation needed	Yes	Section 3.11 (formerly Section 3.8)	EPA: No comments.
c. Specifies any specific method performance criteria	Yes	Sections 2.7.2 (formerly Section 2.6.2) and Section 3.8.7 (formerly Section 3.8.3)	EPA: No comments.

d. Identifies procedures to follow when failures occur, identifying individual responsible for corrective action and appropriate documentation	Yes	Section 5.0	EPA: No comments.
e. Identifies sample disposal procedures	Yes	Section 3.10 (formerly Section 3.9)	EPA: No comments.
f. Specifies laboratory turnaround times needed	Yes	Section 5.3	EPA: No comments.
g. Provides method validation information and SOPs for nonstandard methods	Yes	Section 6.0	EPA: No comments.
B5. Quality Control			
a. For each type of sampling, analysis, or measurement technique, identifies QC activities which should be used, for example, blanks, spikes, duplicates, etc., and at what frequency	No	Sections 3.2, 3.3, 3.4, and 3.5	EPA: Field QC measures and sampling (e.g., duplicates) for each type of sampling need to be discussed in these sections. Atlantic Richfield Response (1/10/22): Field duplicate samples are described in Section 3.9 in the revised QAPP.
b. Details what should be done when control limits are exceeded, and how effectiveness of control actions will be determined and documented	Yes	Section 5.0	EPA: No comments.
c. Identifies procedures and formulas for calculating applicable QC statistics, for example, for precision, bias, outliers and missing data	No	New section similar to Section 3.8.3	EPA: A new section similar to Section 3.8.3 discussing field QC activities and QC samples needs to be added. This new section needs to discuss, for example, field duplicate samples, the results of duplicate sampling, QC measurements during XRF paint analysis, results of decon blanks (e.g., after sieve decon), QC checks needed for the TRACKER-3000, etc. Atlantic Richfield Response (1/10/22): Section 3.9 Field Quality Control Samples has been added to the Revised QAPP.
B6. Instrument/Equipment Testing, Inspection, and Maintenance			
a. Identifies field and laboratory equipment needing periodic maintenance, and the schedule for this	Yes	Section 3.11 (formerly Section 3.10)	EPA: No comments.
b. Identifies testing criteria	Yes	Section 3.11 (formerly Section 3.10)	EPA: No comments.
c. Notes availability and location of spare parts	Yes	Section 3.11 (formerly Section 3.10)	EPA: No comments.

d. Indicates procedures in place for inspecting equipment before usage	Yes	Section 3.11 (formerly Section 3.10)	EPA: No comments.
e. Identifies individual(s) responsible for testing, inspection and maintenance	Yes	Section 3.11 (formerly Section 3.10)	EPA: No comments.
f. Indicates how deficiencies found should be resolved, re-inspections performed, and effectiveness of corrective action determined and documented	Yes	Section 3.11 (formerly Section 3.10)	EPA: No comments.
B7. Instrument/Equipment Calibration and Frequency			
a. Identifies equipment, tools, and instruments that should be calibrated and the frequency for this calibration	Yes	Sections 2.7, 2.7.2 (formerly 2.8.2), 3.10	EPA: No comments.
b. Describes how calibrations should be performed and documented, indicating test criteria and standards or certified equipment	Yes	Sections 2.7, 2.7.2 (formerly 2.8.2), 3.10	EPA: No comments.
c. Identifies how deficiencies should be resolved and documented	Yes	Section 5.0	EPA: No comments.
B8. Inspection/Acceptance for Supplies and Consumables			
a. Identifies critical supplies and consumables for field and laboratory, noting supply source, acceptance criteria, and procedures for tracking, storing and retrieving these materials	Yes	Section 3.12 (formerly Section 3.11)	EPA: No comments.
b. Identifies the individual(s) responsible for this	Yes	Section 3.12 (formerly Section 3.11)	EPA: No comments.
B9. Use of Existing Data (Non-direct Measurements)			
a. Identifies data sources, for example, computer databases or literature files, or models that should be accessed and used	Yes	Section 6.0	EPA: No comments.
b. Describes the intended use of this information and the rationale for their selection, i.e., its relevance to project	Yes	Section 6.0	EPA: No comments.
c. Indicates the acceptance criteria for these data sources and/or models	Yes	Section 6.0	EPA: No comments.
d. Identifies key resources/support facilities needed	Yes	Section 6.0	EPA: No comments.

e. Describes how limits to validity and operating conditions should be determined, for example, internal checks of the program and Beta testing	Yes	Section 6.0	EPA: No comments.
B10. Data Management			
a. Describes data management scheme from field to final use and storage	Yes	Section 3.13 (formerly Section 3.12)	EPA: No comments.
b. Discusses standard record-keeping and tracking practices, and the document control system or cites other written documentation such as SOPs	Yes	Section 3.13 (formerly Section 3.12)	EPA: No comments.
c. Identifies data handling equipment/procedures that should be used to process, compile, analyze, and transmit data reliably and accurately	Yes	Section 3.13 (formerly Section 3.12)	EPA: No comments.
d. Identifies individual(s) responsible for this	No	Section 3.13 (formerly Section 3.12)	EPA: Add the individuals responsible for data management and/or add text clarifying this in Section 2.3. Atlantic Richfield Response (1/10/22): The Superfund Quality Assurance Manager has been identified as the responsible party for data management in Section 2.3.
e. Describes the process for data archival and retrieval	No	Section 3.13 (formerly Section 3.12)	EPA: Summarize the process where entities such as EPA can request or review data and information from the RMAP. Atlantic Richfield Response (1/10/22): Subsection 3.13.1 Requests for Data has been added to the revised QAPP.
f. Describes procedures to demonstrate acceptability of hardware and software configurations	Yes	Section 3.13 (formerly Section 3.12)	EPA: No comments.
g. Attaches checklists and forms that should be used	Yes	Section 3.13 (formerly Section 3.12)	EPA: Please provide a copy of the BSB Data Management Plan (BSB, 2016) with the next submittal of this QAPP. Atlantic Richfield Response (1/10/22): The Final BPSOU Data Management Plan is currently under development. The QAPP references this document with a TBD completion date for now.
C. Assessment and Oversight			
C1. Assessments and Response Actions			

a. Lists the number, frequency, and type of assessment activities that should be conducted, with the approximate dates	Yes	Section 5.0	EPA: No comments at this time.
b. Identifies individual(s) responsible for conducting assessments, indicating their authority to issue stop work orders, and any other possible participants in the assessment process	Yes	Section 5.0	EPA: No comments at this time.
c. Describes how and to whom assessment information should be reported	Yes	Section 5.1 and 5.2	EPA: No comments at this time.
d. Identifies how corrective actions should be addressed and by whom, and how they should be verified and documented	Yes	Section 5.1 and 5.2	EPA: No comments at this time.
C2. Reports to Management			
a. Identifies what project QA status reports are needed and how frequently	Yes	Section 5.3	EPA: No comments at this time.
b. Identifies who should write these reports and who should receive this information	Yes	Section 5.3	EPA: No comments at this time.
D. Data Validation and Usability			
D1. Data Review, Verification, and Validation			

<p>Describes criteria that should be used for accepting, rejecting, or qualifying project data</p>	<p>Yes</p>	<p>Section 6.0</p>	<p>EPA: 1) There is reference made to the CFRSSI Data Management/Data Validation Plan Addendum (AERL 2000) in Section 6. It is EPA’s understanding that this QAPP updates the validation process and is not following the older documents but developing an updated approach to validation while maintaining the critical elements of the previous historical documents. Clearly, it is time to update the 2000 DM/DV Plan and Pilot Data Report or take the steps needed to incorporate the necessary information from these documents into the BPSOU QMP and this QAPP.</p> <p>Atlantic Richfield Response (1/10/22): The critical elements of the CFRSSI documents, including the data validation checklists, Level AB assessment checklist, definitions of enforcement / screening / rejected data quality, and the data quality assessment process, have been included with the appropriate references in the revised QAPP.</p> <p>All samples analyzed for metals at a commercial laboratory will be validated following the CFRSSI documents and the EPA National Functional Guidelines for Inorganic Superfund Methods Data Review, November 2020.</p> <p>2) Information needs to be provided on what level of quality the data needs to be that is being collected (enforcement versus screening).</p> <p>Atlantic Richfield Response (1/10/22): Section 6.0 has been modified to describe enforcement quality data.</p> <p>3) Update the reference for the EPA National Functional Guidelines to the current version: National Functional Guidelines for Inorganic Superfund Methods Data Review (January 2017).</p> <p>Atlantic Richfield Response (1/10/22): The EPA National Functional Guidelines for Inorganic Superfund Methods Data Review has been updated to reflect the most current version (November 2020).</p> <p>4) Update the reference for the EPA CLP SOW for Inorganic Superfund Methods from 2010 to the October 2016 version. The current ISM SOW is ISM02.4.</p>
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			Atlantic Richfield Response (1/10/22): The EPA CLP SOW for Inorganic Superfund Methods has been updated to reflect the most current version (November 2020).
D2. Verification and Validation Methods			
a. Describes process for data verification and validation, providing SOPs and indicating what data validation software should be used, if any	Yes	Section 6.0	EPA: See applicable comments from D1. Atlantic Richfield Response (1/10/22): Section 6.0 has been updated.
b. Identifies who is responsible for verifying and validating different components of the project data/information, for example, chain-of-custody forms, receipt logs, calibration information, etc.	Yes	Section 6.0	EPA: See applicable comments from D1. Atlantic Richfield Response (1/10/22): Section 6.0 has been updated.
c. Identifies issue resolution process, and method and individual responsible for conveying these results to data users	Yes	Section 6.0	EPA: See applicable comments from D1. Atlantic Richfield Response (1/10/22): Section 6.0 has been modified to describe responsibilities.
d. Attaches checklists, forms, and calculations	Yes	Section 6.0	EPA: See applicable comments from D1. Atlantic Richfield Response (1/10/22): Section 6.0 has been updated.
D3. Reconciliation with User Requirements			
a. Describes procedures to evaluate the uncertainty of the validated data	Yes	Section 6.0	EPA: See applicable comments from D1. Atlantic Richfield Response (1/10/22): Section 6.0 has been updated.
b. Describes how limitations on data use should be reported to the data users	Yes	Section 6.0	EPA: See applicable comments from D1. Atlantic Richfield Response (1/10/22): Section 6.0 has been updated.