Summer 8-31-2023

Comment Letter for Draft BPSOU Uncontrolled Surface Flow Areas Remedial Design (RD) Work Plan and Draft BPSOU Uncontrolled Surface Flow Areas Pre-Design Investigation (PDI) Work Plan (dated August 31, 2023)

Atlantic Richfield Company

Re: Comment Letter for Draft BPSOU Uncontrolled Surface Flow Areas Remedial Design (RD) Work Plan and Draft BPSOU Uncontrolled Surface Flow Areas Pre-Design Investigation (PDI) Work Plan (dated August 31, 2023)

Draft BPSOU Uncontrolled Surface Flow Areas Remedial Design (RD) Work Plan (dated August 2023)

General Comments:

1. The Draft Final Uncontrolled Surface Flow Area Soil Characterization Quality Assurance Project Plan is referenced in both the remedial design work plan and pre-design investigation work plan, but not included in these reports. Please provide these reports for EPA and DEQ review.

   AR Response: Soils Characterization QAPP is commented on below and was provided as an attachment to the Pre-Design Investigation Work Plan.

Specific Comments:

2. Table of Contents. Remedial Design Deliverables. Consider moving Schedule and Construction Documents to their own sections.

   AR Response: Schedule and construction documents have been made their own sections.

3. Acronyms. Check this list for completeness. There are several missing acronyms (e.g., CERCLA, CREAT, FEWA, GSR, ITRC, NAD, NAVD, NWI, PSP) that would be helpful to include.

   AR Response: The list of acronyms has been updated.

4. 1.1.1 Geology. The text states that "Soil and/or geotechnical investigations have not been completed in the USFAs and more information will need to be gathered to inform geotechnical characteristics and support BMP selection for the USFAs." Because soil properties and qualities, such as hydrologic soil groups (HSG's), greatly affect runoff, this should be done as soon as possible to adequately assess and size BMPs. For starters, the online NRCS Web Soil Survey provides soil data and information for a user-defined area of interest. This comment also applies to Section 4.1.4.

   AR Response: The quoted text is in a section of the RDWP summarizing information collected to date. The PDIWP specifies the information requested yet to be collected and the NRCS Web Soil Survey is specifically mentioned in Section 5.3.2.

5. 1.1.2 Storm Water Hydrology. The text states that "The BMPs to be installed for each USFA drainage will be sized to collect the 6-month, 24-hour type 1 storm event volume, based on the Rational Method." Where can USFA drainage characteristics be found for each area (e.g., area, slope, longest flow path, rainfall intensity, etc.)? Have these been investigated/calculated yet; and have discharges for the 6-month 24-hour storm been calculated?

   AR Response: BMP sizing calculations will occur in the individual Remedial Action Work Plans for each drainage. Preliminary sizing calculations have been developed and will be refined for presentation in the Remedial Action Work Plans.

6. 1.1.3 Storm Water Hydrology. The text states that "Many USFAs lie on private land. Property surveys will need to be conducted to define areas and practicability for BMP implementation in the USFAs." Should anticipated BMP locations fall on private land, what is the plan for proceeding forward?

AR Response: The PDIWP specifies that boundary surveys shall be completed for the prospective BMP areas. The boundary surveys will be used to ensure that BMPs will not be located on private land, and that they will only be sited on AR, BSB, or MDT Right of ways. See the BMP implementation flow chart included as Figure 3 of the PDIWP and Figure 2 of the RDWP.

7. 4.1.4 Geotechnical Investigation. The text states that "Approximately 10 tests pits will be collected, or another acceptable soil sampling method, near the anticipated BMP locations of the USFAs." See comment on Section 1.1.1. What is the plan for determining soil characteristics upstream of the BMP locations, where runoff originates from?

   AR Response: Drainages will be characterized through existing datasets, including the previously mentioned NRCS Web Soil Survey.

8. 4.1.5 Stormwater Characterization. The text states that "Previously collected stormwater data is located in the BPSOU Surface Water Data Summary Reports (2018-2022) and will be utilized to inform the following: …" This is only four to five years of record. US Climate 30-year precipitation normals should also be acquired for the areas to establish a good baseline and used to compare against collected data.

   AR Response: The 4-year data set was specific to stormwater sampling, not rainfall data. Historic rainfall data is available to determine the runoff associated with each BMP drainage. Butte-Silver Bow Stormwater Design Standards will be utilized for flow predictions and BMP sizing.

9. 4.3.2 Design Report. The text states that "The Design Report may/will (at a minimum?) include the following: …" Which is it – may or will? All these items seem appropriate to include. If they have no action items associated, they should at least be affirmed as such.

   AR Response: The text has been clarified that these items will be included in the Design Report.

10. 4.4.2 Rational Method. The text states that "The Rational method will be used to determine peak discharge and design storm volume values for each individual drainage comprising the USFAs." EPA would also be open to utilizing Soil Conservation Service Runoff Curve Number Method (SCS-CN) because it is applicable for 24-hour duration storms and estimates volume (i.e., precipitation excess) that runs off.

    AR Response: AR has discussed the appropriate method at length with the EPA, with the conclusion being that the rational method is the simplest method to gain concurrence on for the BMP sizing.

11. 5.1.1 Selection and Implementation of Greener Cleanup BMPs. The text states that "In accordance with the ASTM standard, BMPs will be prioritized and selected for implementation based on the relative ability of each BMP to reduce the environmental footprint of site activities, along with factors such as ease of implementation, effectiveness, reliability, short-term risks, community concerns, cost, and potential for environmental trade-offs." Suggest setting up a weighted impact-benefit score analysis.

    AR Response: A weighted impact-benefit score analysis will be considered.

12. Figure 1: BPSOU Uncaptured Surface Flow Areas Map. The figure could be improved to better support the RDWP discussion (e.g., tables with drainage characteristics, etc.). Please consider:
    - The drainage basins should have flow lines and flow direction arrows drawn.
    - Drainage F is labeled to be an Existing Surface Water Feature. What is meant by this?

- Fixing the key in the legend for the drainage basins to also show the red shaded areas.
- There are several shaded areas in yellow and purple that don't have a key in the legend.
- The property area (ARCO, BSB, MDT R.O.W.) hatches are difficult to see in the map. Improve the visibility by increasing hatch thickness or using a brighter color. The USFA areas should be verified. LiDAR-delineated contributing areas (green) do no line up with the overlayed Figure 1.
- What topographic data were used to delineate the areas?

AR Response: AR will make changes to the appearance of the figure, but since the figure is directly from FRESOW additional conversations about changes to the substance of the figure and the delineation of drainages is warranted.

13. Figure 2: BPSOU USFAs Design Team Organization. List the organization that the Contractor is employed by (in blue). Add acronyms after the Contractor personnel titles to be consistent with the rest of the chart (e.g., Quality Assurance Officer (QAO), Field Team Lead (FTL), and Health and Safety Officer (HSO)).

    AR Response: Contractor employer and acronyms have been added to the chart.

Draft BPSOU Uncontrolled Surface Flow Areas Pre-Design Investigation (PDI) Work Plan (dated August 2023)

Specific Comments:

14. List of Figures. Consider adding a Summary of Previous Investigations figure.

    AR Response: A previous investigations figure has been added

15. Acronyms. Where is the list of acronyms for the PDIWP?

    AR Response: A list of acronyms has been added.

16. 5.1 Soil Characterization. No specific depths or methods are discussed for soil sampling. The document does state in 5.1 Soil Characterization that protocols and procedures are outlined in found in Attachment 1 (i.e., BPSOU Uncontrolled Surface Flow Area Soil Characterization QAPP), but attachment 1 has not been provided. Please provide Attachment 1.

    AR Response: AR Response: Attachment 1, the Soils Characterization QAPP, was provided to the agencies with the rest of the submittal documents and is commented on below by the agencies. Section 2.4.1 Step 3 of the QAPP provides a description of the soil sample depths.

17. 7.0 Schedule of Work. The text states that "Fieldwork is expected to commence in Fall 2023 and is anticipated to be completed by Winter 2023." Should major delays occur, there is concern that test pitting and infiltration testing could be impacted by winter weather (e.g., ground freezing). What is the plan should field work be impacted by such conditions?

    AR Response: The schedule has been updated.

18. Figure 3: Proposed Soil Sampling Locations. How were the proposed sampling locations selected? There should be some explanation on this. The figure could be improved to better support the PDIWP discussion (e.g., flow path lines to these proposed locations, etc.).

    AR Response: The proposed locations were chosen as they are near the bottom of each drainage site, on land that is owned or accessible by Atlantic Richfield, so they represent likely candidate locations for BMP siting. A discussion of the selection process has been added.

Draft Final BPSOU 2023 Uncontrolled Surface Flow Area Soil Characterization Quality Assurance Project Plan (QAPP)

19. Please address comments within this comment letter along with those identified in the accompanied crosswalk for this QAPP.

    AR Response: All comments have been addressed. See the attached crosswalk which provides detail regarding how the crosswalk comments have been addressed.

20. Section 2.4, Quality Objectives and Criteria. If the soil is clean it is stated that it can be used for backfill material and BMP construction. Indicate where specifically the soil would be used for backfill and how it would be used for BMP construction.

    AR Response: BMP Design and any reuse of on-site material will be determined in each drainages Remedial Action Work Plan.

21. Section 2.4, Quality Objectives and Criteria. DQO Step 6 discusses the data package and validation components for this project. It is recommended that a Level 4 or greater data package be procured so that all applicable laboratory sample result information is provided in order to answer any potential questions during validation. More information needs to be provided on how many samples will be collected, how often they will be collected, how many samples are being sent to the laboratory and the overall timeframe of sample collection and submittal to the laboratory. This will help establish the appropriate level of validation. Depending on the frequency of sampling and the objectives of how the data will be used, it is recommended that the first data package submitted to the laboratory be validated to a Stage 4 Level and the remaining data to a Stage 2b Level. Going forward there should be a frequency of 10% Stage 4 Level validation and a 90% Stage 2b Level validation.

    AR Response: Stage 4 validation will be completed at a 10% frequency for COCs, with any remaining COC data undergoing stage 2b data validation. All other data that is not COC related will undergo stage 2a validation. Details regarding numbers of samples can be found in Table 2.

22. Section 2.4.2, Measurement Performance Criteria for Data, Representativeness The field duplicate RPD criteria should be 35% for soil samples with a delta < 2x the RL for sample results less than five times the reporting limit for soil samples.

    AR Response: Section 2.4.2 has been updated.

23. Section 5.1.5, Specific Quality control/Assessment Procedures. Is the term "process of field and laboratory data quality review" referring to data validation? Is the Data Quality Assessment Report going to be part of the data summary report? A discussion of the Level A/B review should be provided in this section and other applicable sections throughout the QAPP.

    AR Response: A discussion of Level A/B review is provided in Section 5.2.2. Section 5.1.5 has been updated for clarification

24. Table 5. In the text, a header for Table 5 is presented but no table is there, please remove. Table 5 on page 53 of the PDF, there should be discussion on field duplicates and MS/MSD samples for which samples are qualified. For example, the parent samples are qualified if required but if the samples in that sample delivery group are similar to the MS sample they should also be qualified. If the validation levels are increased as recommended, this table needs to be updated to provide the information for all quality control review elements as has been developed on other sites.

    AR Response: Table 5 header in the text has been removed. Footnotes have been added to Table 5 explaining that matrix similarity is assessed in qualifying data for MS/MSD recoveries, laboratory

precision, and field precision outside of acceptance criteria.

25. Section 5.2.2, Laboratory Chemistry Data. Update the validation level to 90% Stage 2b and 10% Stage 4.

    AR Response: Stage *4 validation will be completed at a 10% frequency for COCs, with any remaining data undergoing stage 2b data validation.*

26. Section 5.2.2, Laboratory Chemistry Data. The qualifiers J+ and J- should also be added to the list of potential qualifiers.

    AR Response: Section 5.2.2 has been updated as requested

27. Section 5.2.2, Laboratory Chemistry Data. The information for Level A/B should be defined in this section in more depth.

    AR Response: The Level A/B checklist is provided in Appendix E and is described in Section 5.2.2.

28. Appendix D. Appendix D presents the CFRSSI XRF Method. Why is this presented in this QAPP? It is not applicable and should be removed. Include relevant and applicable laboratory data package components as stated in the text and table of contents.

    AR Response: This SOP has been removed as XRF data is not planned to be collected for the project.

29. Appendix E. Appendix E presents the BPSOU – 2023 Final Unreclaimed Sites Quality Assurance Project Plan. Why is this presented in this QAPP? EPA does not believe that this appropriate to append a QAPP to a QAPP and should be removed. The information/items in the 2023 Final Unreclaimed Sites Quality Assurance Project Plan should be folded into the Uncontrolled Surface Flow Area Soil Characterization QAPP. The Unreclaimed Sites Quality Assurance Project Plan should be a standalone QAPP.

    AR Response: The Unreclaimed Sites QAPP has been removed as an appendix and information has been incorporated into the USFA Soil Characterization QAPP.

30. References. Please check the dates of the referenced documents.

    AR Response: Dates for referenced documents have been updated