APPENDIX A

Statement of Work

CONSENT DECREE
for the
ANACONDA SMELTER NPL SITE

STATEMENT OF WORK

to implement the

CONSENT DECREE

for the

ANACONDA SMELTER NPL SITE

Anaconda-Deer Lodge County, State of Montana

September 2022

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Anaconda Smelter

Consent Decree

Statement of Work

1. Introduction

1.1 Purpose of SOW. This Statement of Work (SOW) sets forth the procedures and requirements for implementing the Work obligations of Atlantic Richfield Company (AR) under the Consent Decree for the Anaconda Smelter NPL Site (Consent Decree or CD).

1.2 Structure of the SOW.

(a) **Section 2 (Community Involvement)** sets forth EPA's and AR's responsibilities for community involvement.

(b) **Section 3 (Scope of Remedy)** sets forth response action requirements specific to three of the five Anaconda Site Operable Units (OUs) addressed by this SOW: (i) the Community Soils (CS) OU; (ii) the Old Works/East Anaconda Development Area (OW/EADA) OU; and (iii) the Anaconda Regional Waste, Water, and Soils (ARWW&S) OU; as well as (iv) Site-wide response action requirements.

(c) **Section 4 (Remedial Action)** describes the Remedial Action (RA) work already completed for the OW/EADA OU, CSOU, and ARWW&S OU; lists the work plans, final design reports, and management plans containing the RA activities, obligations, and requirements for each OU; and summarizes the schedule and process for implementation and completion of the RA for the Site.

(d) **Section 5 (Additional RA Requirements)** describes additional RA requirements for the Site, including the processes for demonstrating completion of RA construction, certifying RA and Work completion, and NPL deletion.

(e) **Section 6 (Conversion Remedies)** sets forth AR's obligations regarding implementation of conversion remedies for: (i) the Old Works Golf Course (OWGC); and (ii) the Active Railroad portion of Remedial Design Unit (RDU) 5 of the ARWW&S OU.

(f) **Section 7 (Reporting)** sets forth AR's reporting obligations.

(g) **Section 8 (Deliverables)** describes the content of the supporting deliverables and the general requirements regarding AR's submission of, and EPA's review of, approval of, comment on, and/or modification of, all deliverables.

(h) **Section 9 (State Participation)** addresses the Montana Department of Environmental Quality's (DEQ's) participation.

(i) **Section 10 (Site Document Register & References)** provides a list of references, including URLs.

1.3 **CD Registry.** AR will maintain a document database for the convenience of the Parties. This database is independent of the EPA record and administrative record for the Anaconda Site. EPA will also maintain all documents in its Superfund Enterprise Management System (SEMS).

1.4 **DEQ Participation.** Consistent with relevant provisions of CERCLA, EPA will consult with DEQ in making all significant decisions regarding the requirements of the Consent Decree and this SOW. References to any EPA approval in this SOW therefore means that the approval is by EPA in consultation with DEQ, even when DEQ is not explicitly mentioned.

1.5 **Terms and Abbreviations.** The terms used in this SOW that are defined in CERCLA, in regulations promulgated under CERCLA, or in the CD, have the meanings assigned to them in CERCLA, in such regulations, or in the CD, except that the term "Section" and "Subsection" used in this document means a section or subsection of this SOW, unless otherwise stated.

1.6 **Relationship to Existing Administrative Orders.** AR has been performing response actions at the Site pursuant to several administrative orders (Administrative Orders), which are identified in Subsections 4.1(a), 4.2(a), and 4.3(a) of this SOW. As of the Effective Date of the CD, AR's obligations under the Administrative Orders shall terminate and be replaced and superseded by the requirements of the CD and this SOW.

2. Community Involvement.

2.1 **Community Involvement Responsibilities.** EPA has the lead responsibility for developing and implementing community involvement activities at the Site. Previously, EPA developed a Community Involvement

Plan (CIP) for the Site. Pursuant to 40 C.F.R. § 300.435(c), EPA shall review the existing CIP and determine whether it should be revised to describe further public involvement activities during the Work that are not already addressed or provided for in the existing CIP, including the Technical Assistance Grant (TAG).

2.2 AR Participation. If requested by EPA, AR shall participate in community involvement activities, including participation in (1) the preparation of information regarding the Work for dissemination to the public, with consideration given to including mass media and/or Internet notification, and (2) public meetings that may be held or sponsored by EPA to explain activities at or relating to the Site. AR's support of EPA's community involvement activities may include providing online access to initial submissions and updates of deliverables to (1) any Community Advisory Groups, (2) the TAG recipients and their advisors, and (3) other entities to provide them with a reasonable opportunity for review and comment. EPA may describe in its CIP AR's responsibilities for community involvement activities. All community involvement activities conducted by AR at EPA's request are subject to EPA's oversight. AR shall establish or assist Anaconda Deer-Lodge County (ADLC) in establishing a community information repository at or near the Site to house one copy of the administrative record. The initial location of this community repository shall be at the ADLC Superfund Building, 186 Landfill Rd., Anaconda, MT 59711.

2.3 Community Involvement Coordinator. If requested by EPA, AR shall, within 30 days of a request, designate and notify EPA of AR's Community Involvement Coordinator (AR's CI Coordinator). AR may hire a contractor for this purpose. AR's notice must include the name, title, and qualifications of the AR's CI Coordinator. AR's CI Coordinator is responsible for providing support regarding EPA's community involvement activities, including coordinating with EPA's CI Coordinator regarding responses to the public's inquiries about the Site.

3. Scope of the Remedy. The Scope of the Remedy for the Anaconda Site consists of the following requirements defined in this Section 3 and the decision documents referenced below:

- Response action requirements for the OW/EADA OU;

- Response action requirements for the CSOU;
- Response action requirements for the ARWW&S OU (including Site-wide surface water and groundwater management requirements pursuant to the Surface Water Management Plan (SWMP) and Ground Water Management Plan (GWMP); and
- Other Site-wide response action requirements described in the Site Management Plan (SMP), Vegetation Management Plan (VMP), Institutional Controls Implementation and Assurance Plan (ICIAP), and Access Control Plan.

The work required under this SOW focuses on the RA and associated activities (*e.g.*, ICs, O&M, monitoring and reporting, etc.) to be performed in order to complete, operate, and maintain the remedies identified in the Records of Decision (RODs) for the Site, including all amendments thereto that exist on the date when the CD is lodged (*e.g.*, previous ROD Amendments and ESDs (defined below)) and any future ESDs issued after the CD is lodged. Section 5.0 of the SMP, attached to this SOW, provides a summary of the current RD/RA status for each OU, subarea, RDU, and expansion area of the Site; Section 6.0 of the SMP provides the anticipated schedule for the Scope of the Remedy described in this Section 3; and Section 7.0 of the SMP provides a pre-construction remedy confirmation process to identify RA refinements that will be necessary to implement to achieve Performance Standards. The Scope of the Remedy does not include any RA for the Mill Creek and Flue Dust OUs of the Anaconda Site, as EPA has certified that RA is complete for those two OUs. *See* Subsection 5.1(g) below.

3.1 Old Works/East Anaconda Development Area OU.

(a) Decision Documents.

(1) 1994 – ROD for the OW/EADA OU, issued by EPA with the concurrence of DEQ on March 8, 1994.

(2) 1995 – ESD for the OW/EADA OU, issued by EPA with the concurrence of DEQ on November 6, 1995.

(3) 2020 – ESD for the OW/EADA OU, issued by EPA with the concurrence of DEQ on June 12, 2020.

(b) Scope of Remedy for the OW/EADA OU. The Scope of the Remedy for the OW/EADA OU consists of the response actions described in Section IX of the 1994 ROD, Section III of the 1995 ESD, and Section 4 of the 2020 ESD, in areas where waste sources are present or arsenic concentrations in soil exceed the action levels established in the 1994 ROD, as further described below for the respective subareas within this OU. Except as specifically indicated in the SMP, VMP, ICIAP, SWMP, GWMP, and the numbered subparagraphs below, the Scope of the Remedy for the OW/EADA OU does not include: (i) the additional "Contingency Measures" described on page DS-59 in Section IX of the 1994 ROD, or (ii) any additional excavation or removal of waste materials from beneath existing engineered caps or covers, wastes associated with historic structures, wastes otherwise present within a Waste Management Area (WMA) or Dedicated Development, or soils that previously have undergone *in situ* treatment.

(1) OW/EADA Subareas 1 & 2: OWGC, Old Works Structural Areas, Heap Roast Slag, Miscellaneous Waste Piles, and a Portion of the Warm Spring Creek Floodplain. The Old Works Golf Course is a dedicated development that contains waste from the oldest smelting facility (Old Works) in place. The Scope of the Remedy for Subareas 1 and 2 consists of the construction and implementation of the engineered covers, storm water management features, stream channel controls, and historic preservation measures to meet the remedial requirements described in Section IX of the 1994 ROD. With respect to the OWGC, the Scope of the Remedy also includes the OWGC Conversion Remedy, as described in Section 4.1 of the 2020 OW/EADA ESD and the *Old Works Golf Course (OWGC) Conversion Remedial Action Work Plan (RAWP)* (Feb. 2020, Site Document Register No. 400-05-772, SEMS No. 1970903). This contingency allows the OWGC to be converted from a golf course to another dedicated open space recreational public use that is consistent with the waste containment remedy in the event that the OWGC area ceases to be used as a golf course in the future.

(2) **OW/EADA Subareas 3 & 4 Extension of the Warm Spring Creek Floodplain and the Industrial Park, Red Sands, Arbiter Plant and the Anaconda Industrial Park.** The Scope of the Remedy for Subareas 3 and 4 consists of excavating waste material located outside the OW/EADA WMA, as well as the construction and implementation of engineered covers, storm water management features, stream channel controls, and historical preservation measures within the WMA, as described in Section IX of the 1994 ROD.

(3) **OW/EADA Subarea 5 East Anaconda Yard and Benny Goodman Park.** The Scope of the Remedy for Subarea 5 consists of the construction and implementation of the engineered covers and storm water management features described in Section IX of the 1994 ROD.

(4) **OW/EADA Subarea 6 Drag Strip.** The Scope of the Remedy for Subarea 6 consists of the construction and implementation of the engineered covers, *in situ* soil treatment techniques, and storm water management features described in Section IX of the 1994 ROD.

(5) **OW/EADA Aspen Hills Addition.** The Scope of the Remedy for the Aspen Hills Addition consists of the construction and implementation of the engineered covers, *in situ* soil treatment techniques, waste material excavation measures, and storm water management features described in Section IX of the 1994 ROD and Section III of the 1995 ESD.

(6) **OW/EADA Mill Creek Addition.** The Scope of the Remedy for the Mill Creek Addition consists of the construction and implementation of the engineered covers, *in situ* soil treatment techniques, and storm water management features described in Section IX of the 1994 ROD and Section III of the 1995 ESD.

3.2 Community Soils OU.

(a) Decision Documents.

(1) 1996 – ROD, CSOU, issued by EPA with the concurrence of DEQ on September 30, 1996.

(2) 2013 – ROD Amendment, CSOU, issued by EPA with the concurrence of DEQ on September 30, 2013.

(3) 2017 – ESD, CSOU, issued by EPA with the concurrence of DEQ on May 1, 2017.

(4) 2020 – ESD, CSOU, issued by EPA with the concurrence of DEQ on June 12, 2020.

(b) Scope of the Remedy for the CSOU. The Scope of the Remedy for the CSOU consists of the response actions described in Section 9 of the 1996 CSOU ROD, Section 6 of the 2013 CSOU ROD Amendment, Section 4 of the 2017 CSOU ESD, and Section 4 of the 2020 CSOU ESD, as further described below. Except as mentioned in the SMP, VMP, ICIAP, SWMP, GWMP, and the numbered subparagraphs below, the Scope of the Remedy does not include the additional "Contingency Measures" described on page DS-47 in Section 9.7 of the 1996 ROD, or (ii) any additional excavation or removal of waste materials from beneath existing vegetative or other protective barriers or engineered covers, wastes associated with historic structures, wastes otherwise present within a Dedicated Development, or soils that previously have undergone *in situ* treatment.

(1) CSOU Residential Soils and Dust. The Scope of the Remedy for the CSOU residential soils and dust consists of removing residential soils and accessible attic dust that exceeds arsenic concentrations of 250 milligrams per kilogram (mg/kg) or lead concentrations of 400 mg/kg using the soil removal and replacement techniques, attic dust mitigation methods, and vegetative or other protective barriers described in Section 9.1 of the 1996 ROD, Sections 6.1 and 6.2 of the 2013 ROD Amendment, Section 4 of the 2017 ESD, and Sections 4 and 5 of the 2020 ESD.

(2) CSOU Historic Railroad Bed and Commercial/Industrial. The Scope of the Remedy for the historic railroad bed and commercial/industrial soils consists of constructing engineered covers over contaminated railroad bed materials within the community of Anaconda to prevent direct contact with contaminated materials and reduce the potential for erosion and transport of those materials to residential areas; separating active railroad beds from residential and commercial/industrial areas through the use of retaining walls, covers, and/or curbing barriers to restrict access to the railbed and control surface runoff from the railbed; and reducing arsenic concentrations at the surface to below 500 parts per million (ppm) in current industrial or commercial areas using the revegetation techniques and engineered covers described in Sections 9.2 and 9.3 of the 1996 ROD.

3.3 Anaconda Regional Water, Waste and Soils OU.

(a) Decision documents.

(1) 1998 – ROD, ARWW&S OU, issued by EPA with the concurrence of DEQ in November 1998.

(2) 2011 – ROD Amendment, ARWW&S OU, issued by EPA with the concurrence of DEQ in September 2011.

(3) 2020 – ROD Amendment, ARWW&S OU, issued by EPA with the concurrence of DEQ in June 2020.

(b) Scope of the Remedy for ARWW&S OU. The Scope of the Remedy for the ARWW&S OU consists of the response actions described in Section 9 of the 1998 ROD, Sections 4 through 9 of the 2011 ROD Amendment, and Sections 4, 7, and 8 of the 2020 ROD Amendment, as further described below. The ARWW&S OU has been separated into fifteen Remedial Design Units (RDUs) and two expansion areas for Remedial Design (which is complete) and implementation of RA. The Scope of the Remedy for the ARWW&S OU addresses human health and environmental risks associated with non-residential soils, waste source areas (*e.g.*, tailings and slag), and impacts to soil, surface water, and

groundwater from waste sources not otherwise addressed by one of the other OUs at the Site. Except as specifically indicated in the SMP, VMP, ICIAP, SWMP, GWMP, and the numbered subparagraphs below, the Scope of the Remedy does not include any additional excavation or removal of waste materials from beneath existing vegetative or other protective barriers or engineered covers, wastes otherwise present within a WMA or Dedicated Development, or soils that previously have undergone *in situ* treatment.

(1) **ARWW&S RDU 1 (Stucky Ridge Uplands), RDU 2 (Lost Creek Uplands), RDU 3 (Smelter Hill Uplands), RDU 6 (South Opportunity Uplands), RDU 7 (North Opportunity Uplands), RDU 15 (Mount Haggin Uplands), and West Galen Expansion Area Uplands (collectively, Uplands RDUs and Expansion Areas).** The Scope of the Remedy for the Uplands RDUs and Expansion Areas consists of the construction and implementation of impacted soils remedies described in Section 9.4 of the 1998 ROD, Sections 5 through 8 of the 2011 ROD Amendment, and Section 4 of the 2020 ROD Amendment, and the *ARWW&S OU Supplemental Surface Water Controls Remedial Design/Remedial Action (RD/RA) Report* (Aug. 2020, Site Document Register No. 100-15-784, SEMS No. 1970906), including *in situ* treatment, steep slope reclamation, and soil stripping techniques. Pursuant to two consent decrees entered in 2008, one between the State and AR, and the other between the State, AR, and the United States (the State-AR 2008 CD and the Clark Fork River Operable Unit Consent Decree, each as defined in the Sitewide CD), the State has committed to perform response actions related to State-owned property within portions of RDU 1 and RDU 15 ("State Property Remedial Commitments" and "State Lands Obligations," outlined at paragraph 66 of the Clark Fork River Operable Unit Consent Decree and paragraphs 4 through 6 of the State-AR 2008 CD). These commitments and obligations are outside the Scope of the Remedy for RDU 1 to be performed by AR under this CD. Under the same two 2008 consent decrees, RA within RDU 15 is the responsibility of the State Natural

Resource Damages Program, and it is therefore also outside the Scope of the Remedy AR is required to perform under this CD.

(2) **ARWW&S RDU 4 – Anaconda Ponds.** The Scope of the Remedy for RDU 4 consists of the construction and implementation of a vegetative soil cover on approximately 710 acres of dry tailings ponds in accordance with the techniques and specifications described in Section 9.1 of the 1998 ROD and Section 6.2 of the 2011 ROD Amendment.

(3) **ARWW&S RDU 5 – Active Railroad/Blue Lagoons.** The Scope of the Remedy for RDU 5 consists of the construction and implementation of the remediation measures described in Section 9.3 of the 1996 CSOU ROD, Section 9.2 of the 1998 ARWW&S ROD, and Sections 6.2 and 8.3 of the 2011 ARWW&S ROD Amendment on 16 miles of railbed. The Scope of the Remedy also includes the RDU 5 Conversion Remedy, as described in the *Remedial Design Unit (RDU) 5 Active Railroad Conversion Remedial Action Work Plan (RAWP)* (August 2022, Site Register No. 605-05-941, SEMS No.1970913). This contingency allows for the conversion of any segment of the active railroad portion of RDU 5 to an inactive railroad with an alternate dedicated development that is consistent with the waste containment remedy, including conversion to a recreational trail in accordance with the "railbanking" process authorized by Section 8(d) of the National Trails Systems Act, 16 U.S.C. § 1247(d), and 49 U.S.C. § 10903 and its implementing regulations (49 C.F.R. Part 1152), in the event that use of that segment for active rail service is suspended.

(4) **ARWW&S RDU 8 – Opportunity Ponds.** The Scope of the Remedy for RDU 8 consists of the construction and implementation of a vegetative soil cover on approximately 7,400 acres of dry tailings ponds in accordance with the techniques described in Section 9.1 of the 1998 ROD, Section 4 of the 2011 ROD Amendment, and Section 8.2 of the 2020

ROD Amendment, and operation of the Anaconda Smelter Development Repository within the A.9 and B2.12 Cells.

(5) **ARWW&S RDU 9 – Fluvial Tailings.** The Scope of the Remedy for RDU 9 consists of the construction and implementation of the fluvially deposited tailings removal measures and/or *in situ* soil treatment techniques, and surface water remedy, each as described in Sections 9.4 and 9.6 of the ROD and Sections 5 through 7 of the 2011 ROD Amendment.

(6) **ARWW&S RDU 10 – Warm Springs Creek.** The Scope of the Remedy for RDU 10 consists of the construction and implementation of the fluvially deposited tailings removal, bank stabilization, and revegetation measures, and the surface water remedy, each as described in Section 9.6 of the ROD, Section 5.2 of the 2011 ROD Amendment, and Section 4 of the 2020 ROD Amendment.

(7) **ARWW&S RDU 11 – Cashman Concentrates.** The Scope of the Remedy for RDU 11 consists of the miscellaneous waste remedy measures described in Section 9.2 of the ROD, including relocating approximately 20,000 tons of concentrate from the Smelter Hill and Skykomish, Washington stockpiles to the Montana Resources Mine in Butte, Montana, for reprocessing.

(8) **ARWW&S RDU 12 – Slag Pile Remedy.** The Scope of the Remedy for RDU 12 consists of the response actions and Performance Standards described in Sections 9.2 and 9.3 of the 1998 ROD, as modified by Section 8.1 of the 2020 ROD Amendment, as further defined in this Section (including documents referenced herein). The Scope of the Remedy addresses three (3) slag piles covering approximately 200 acres: the Main Granulated Slag (MGS) pile; the West Stack Slag (WSS) pile; and the Anaconda Landfill / Arbiter Slag pile (ALS).

The Scope of the Remedy for the respective slag piles consists of the measures to be implemented pursuant to and performed in accordance with the *Slag Management Plan, Remedial Design Unit 12 – Slag, Main Granulated Slag Site*

(Aug. 2020, Site Document Register No. 612-12-782, SEMS No. 1970883); *Slag Management Plan, Remedial Design Unit 12 – Slag, West Stack Slag* (Aug. 2020, Site Document Register No. 612-12-780, SEMS No.1970882); and *Slag Management Plan, Remedial Design Unit 12 – Slag, Anaconda Landfill Slag* (August 2022, Site Document Register No. 612-12-935, SEMS No. 1970914). The implementation of RA at the ALS landfill slag pile will depend on when and whether the owner and operator of the pile agrees to perform the work or agrees to or is ordered to provide safe access to the property where RA is required.

(9) **ARWW&S RDU 13 – Old Works WMA Groundwater.** The Scope of the Remedy for RDU 13 consists of the measures described in the approved *Old Works Remedial Design Unit 13 Final Design Report* (2010, Site Document Register No. 613-05-365, SEMS No. 1970884), which only covers groundwater monitoring activities associated with the WMA. Compliance and Performance Standard monitoring to assess effectiveness and protectiveness has been integrated into the Sitewide groundwater monitoring in accordance with the *Final Groundwater Management Plan* (January 2021, Site Document Register No. 100-12-920, SEMS No. 1970837).

(10) **ARWW&S RDU 14 -** The Scope of the Remedy for RDU 14 consists of the construction and implementation of the engineered covers, *in situ* treatment techniques, and steep slope reclamation techniques described in Section 9.1 of the ROD and Section 8 of the 2011 ROD Amendment.

(11) **ARWW&S Dutchman Creek Expansion Area.** The Scope of the Remedy for the Dutchman Creek Expansion Area (Dutchman Area) consists of the activities described in the approved *Dutchman Creek High Arsenic Area Final Design Report* (September 2012, Site Document Register No. 617-05-273, SEMS No. 1970892), and includes the establishment of a High Arsenic Area (HAA) within the Dutchman Area, the boundary of which was finalized under the 2011 ROD Amendment. RA required for the Dutchman Area does not

include construction but does include implementation of institutional controls, best management practices, and monitoring in accordance with the *Final Dutchman Property Management Plan* to the *Final AR Wetlands Plan* (AR, 2016, Site Document Register No. 617-26-285, SEMS No. 1970893).

(12) ARWW&S Surface Water Remedy. The Scope of the Surface Water Remedy consists of the response actions and Performance Standards described in Section 9.6 of the 1998 ROD, Sections 5.2 and 7.4 of the 2011 ROD Amendment, and Section 4 of the 2020 ROD Amendment, as further defined in this Section (including documents referenced herein). The Surface Water Remedy overlaps with and will be implemented in coordination with the remedies for RDUs 1, 2 and 3 (discussed above) where it is located, and construction completion documentation for the Surface Water Remedy will be reflected in each respective RDU CCR.

The Scope of the Surface Water Remedy consists of design, construction, and implementation of the engineered controls, slope work, BMPs, and other measures described in and implemented in accordance with the *Anaconda Surface Water Management Plan* (Aug. 2020, Site Document Register No. 100-12-781, SEMS No. 1970835); and the *ARWW&S OU Supplemental Surface Water Controls Remedial Design/RemedialAction (RD/RA) Report* (Aug. 2020, Site Document Register No. 100-15-784, SEMS No. 1970906).

Operation, maintenance, monitoring, evaluation, and reporting will be implemented pursuant to and in accordance with the *Anaconda Surface Water Management Plan* (AR, 2020, Site Document Register No. 100-12-781, SEMS No. 1970835); the *Final Vegetation Management Plan (Revision 2) (VMP)* (February 2022, Site Document Register No. 100-12-89, SEMS No. 1970834); and the *Final Engineered Controls Inspection and Maintenance (I&M) Plan, Revision 2* (Oct. 2016, Site Document Register No. 100-11-90, SEMS No. 1970833). Finally, contingent remedial measures may be

implemented pursuant to and in accordance with Section 8.0 of the *Anaconda Surface Water Management Plan* (Aug. 2020, Site Document Register No. 100-12-781, SEMS No. 1970835).

(13) ARWW&S Groundwater Remedy. The Scope of the Groundwater Remedy consists of source control measures, groundwater monitoring, assurance of domestic well water supplies, and contingent actions described in the *Anaconda Groundwater Management Plan* (Jan. 2021, Site Document Register No. 100-12-920, SEMS No. 1970837); *Long-Term Groundwater Monitoring Program Quality Assurance Project Plan* (November 2021, Site Document Register No. 100-23-872, SEMS No. 1970839); and *Final Domestic Well Monitoring Plan and Quality Assurance Project Plan* (Sept. 2020, Site Document Register No. 100-12-866, SEMS No. 1970836). Certain contingent remedial measures may be implemented pursuant to and in accordance with Section 5 of the *Anaconda Groundwater Management Plan* (Jan. 2021, Site Document Register No. 100-12-920, SEMS No. 1970837).

3.4 Anaconda Site-wide Remedy Elements. In addition to the OU-specific measures described in Sections 3.1 through 3.3 above, the Scope of the Remedy includes the following Sitewide elements:

(a) Institutional Controls (ICs). The Scope of the Remedy includes the establishment and maintenance of the ICs described and implemented in accordance with the *Anaconda Smelter NPL Site Institutional Controls Implementation and Assurance Plan* (ICIAP) (AR, 2020, Site Document Register No. 100-10-766, SEMS No. 1970899).

(b) Wetlands Accounting. The Scope of the Remedy includes wetlands accounting to meet "no-net-loss" regulatory requirements. Such requirements at the Site will follow the Upper Clark Fork River Basin (UCFRB) "Four-Step" wetland mitigation process, as addressed in Section 7 of the SMP.

(c) **Performance Standards and Management Plans.** The Scope of the Remedy includes the achievement of Performance Standards in accordance with the methods described in the following media- or area-specific management plans:

(1) *Final Vegetation Management Plan Revision 2* (VMP) (February 2022, CD Document Register 100-12-89, SEMS No. 1970834);

(2) *Riparian Area Vegetation and Bank Stability Monitoring Plan for Willow Creek and Warm Springs Creek* (RMP) (2015, Site Document Register No. 610-12-591, SEMS No. 1970879);

(3) *Final Engineered Controls Inspection and Maintenance (I&M) Plan Revision 2* (Oct. 2016, Site Document Register No. 100-11-90, SEMS No. 1970833); and

(4) *Final Waste Management Area (WMA) and High Arsenic Area (HAA) Access Control Plan* (May 2022) (Site Document Register No. 100-12-934, SEMS No. 1970901).

Note that the site-wide surface water and groundwater management requirements are part of the ARWW&S OU Remedy. *See Anaconda Surface Water Management Plan* (Aug. 2020), Site Document Register No. 100-12-781, SEMS No. 1970835); and *Anaconda Groundwater Management Plan* (Jan. 2021, Site Document Register No. 100-12-920, SEMS No. 1970837).

(d) **Cultural and Historic Mitigation.** The Scope of the Remedy includes preservation and/or other actions to mitigate remedy impacts to historic or culturally significant items and artifacts in accordance with the *Anaconda NPL Site – Cultural and Historic Mitigation and Preservation Plan* (August 2022, Site Document Register No. 100-12-921, SEMS No. 1970900). Off-Site historic mitigations have been performed in accordance with the Regional Historic Preservation Second Programmatic Agreement (RHPPA) (Dec. 1994) and include the Upper Works Trail and Lower Trails System.

4. Remedial Action.

4.1 OW/EADA OU.

(a) Completed RA Work. AR has previously completed most of the approved removal and remedial activities at the OW/EADA OU pursuant to the existing unilateral administrative order titled "Administrative Order for Remedial Design/Remedial Action," Docket No. CERCLA VIII 94-08, issued by EPA on April 7, 1994, SEMS No. 1155924.

(b) OW/EADA RA Plans. This SOW is intended to facilitate the completion of OW/EADA OU remedial activities, obligations, and requirements contained in the following work plans, final design reports, and management plans. All plans (including any applicable RFCs) listed below and previously approved by EPA, in consultation with DEQ, are incorporated by reference and are fully enforceable under this SOW. Where AR has completed RA for a subarea of the OW/EADA OU, the approved completion report also is identified.

(1) OW/EADA Subareas 1 & 2: OWGC, Old Works Structural Areas, Heap Roast Slag, Miscellaneous Waste Piles, and a Portion of the Warm Spring Creek Floodplain.

i. *Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area Remedial Action Work Plan/Final Design Report (RAWP/FDR) Volumes I and II* (Aug. 1994, Site Document Register No. 400-05-401, 400-05-402, SEMS No. 1970831 and 1970832);

ii. *Draft Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area (OW/EADA) Operable Unit (OU) Remedial Action Work Plan/Final Design Report (RAWP/FDR) Volume III – Addenda* (Aug. 1996, Site Document Register No. 400-05-468, SEMS No. 1970823-26);

iii. *Old Works Golf Course Operations and Maintenance Plan* (OWGC O&M Plan) (Sept. 2019, Site Document Register No. 402-12-99, SEMS No. 100007994); and

iv. *Draft Final Old Works Golf Course (OWGC) Remedial Action (RA) Completion Report* (July 2021, Site Document Register No. 400-19-926, SEMS No. 1970904).

(2) OWGC Conversion Work.

i. *Old Works Golf Course (OWGC) Conversion Remedial Action Work Plan (RAWP)* (Feb. 2020, Site Document Register No. 400-05-772, SEMS No. 100011975).

(3) OW/EADA Subareas 3 & 4 Extension of the Warm Spring Creek Floodplain and the Industrial Park, Red Sands, Arbiter Plant and the Anaconda Industrial Park.

i. *Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area Remedial Action Work Plan/Final Design Report Volumes I and II* (Aug. 1994, Site Document Register No. 400-05-401, 400-05-402, SEMS No. 1970831 and 1970832);

ii. *Draft Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area (OW/EADA) Operable Unit (OU) Remedial Action Work Plan/Final Design Report (RAWP/FDR) Volume III – Addenda* (Aug. 1996, Site Document Register No. 400-05-468, SEMS No. 1970823-26);

iii. *Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area (OW/EADA) Operable Unit (OU) Industrial Area Remedial Action Work Plan/Final Design Report (RAWP/FDR) Volume IV, Addendum D Report I Industrial Area* (Aug. 2002, Site Document Register No. 403-05-469, SEMS No.1970827); and

iv. *Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area (OW/EADA) Operable Unit (OU) Industrial Area Remedial Action Work Plan/Final Design Report (RAWP/FDR) Volume IV, Addendum D Report IV Arbiter Industrial Complex* (Oct. 2002, Site Document Register No. 404-05-470, SEMS No. 1970828).

(4) OW/EADA Subarea 5 East Anaconda Yard and Benny Goodman Park.

i. *Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area Remedial Action Work Plan/Final Design Report Volume IV Addenda E and F Aspen Hills and East Anaconda Yards* (Aug. 1998, Site Document Register No. 405-05-430, SEMS No. 1970829).

(5) OW/EADA Subarea 6 Drag Strip.

i. *Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area Remedial Action Work Plan/Final Design Report Volume IV Addendum H Drag Strip* (August 1999, Site Document Register No. 406-05-403, SEMS No. 1970905).

(6) OW/EADA Aspen Hills Addition.

i. *Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area Remedial Action Work Plan/Final Design Report Volume IV Addenda E and F Aspen Hills and East Anaconda Yards* (July, 1999, Site Document Register No. 405-05-430, SEMS No. 1970829); and

ii. *Aspen Hills Loop Track FDR/RAWP* (2002, Site Document Register No. 614-05-460, SEMS No. 100011977).

(7) OW/EADA Mill Creek Addition.

i. *Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area Remedial Action Work Plan/Final Design Report Volume IV Addendum G Mill Creek Addition* (August 1998, Site Document Register No. 406-05-408, SEMS No. 100011976).

(8) Individual Site Work Plans (ISWPs). In order to facilitate remediation of non-AR-owned commercial land parcels in the OW/EADA OU containing soils having arsenic concentrations greater than the land use action level of 500 ppm, AR has developed and shall continue to develop ISWPs for each such land parcel. Each ISWP shall be signed by the landowner, EPA, and AR, and shall address the extent of soil

removal and soil/aggregate cover placement within each parcel as determined through data collection activities. Each ISWP approved by EPA shall be incorporated by reference and is fully enforceable under and in accordance with this SOW.

(c) **Remedial Action Schedules.** Section 6.0 of the SMP attached to this SOW and incorporated herein, sets forth a provisional schedule for completion of all RA at the OW/EADA OU, including construction start and completion and pre-final and final inspection dates for the RA at the OW/EADA OU. These dates may be subsequently revised upon approval by EPA.

(d) **RA Implementation**. AR shall implement the RA specified in the OW/EADA OU work plans, design reports, management plans, ISWPs, and other work plans described above in Subsection 4.1(b) and in any subsequently approved revisions until the OW/EADA OU Performance Standards have been achieved, and for so long thereafter as otherwise required under the CD and/or this SOW.

4.2 Community Soils OU.

(a) **Completed RA Work.** AR has previously completed much of the approved removal and remedial activities at the CSOU pursuant to the following administrative orders:

(1) Administrative Order for Time Critical Removal Action, AOC Docket No. CERCLA-08-2015-0011, issued by EPA on September 20, 1991;

(2) Administrative Order for Remedial Action, AO Docket No. CERCLA-08-2002-08, issued by EPA on September 14, 2002; and

(3) Administrative Order for Remedial Action, AO Docket No. CERCLA-08-2015-0011, issued by EPA on September 24, 2015.

(b) **CSOU RA Plans.** This SOW is intended to facilitate the completion of CSOU remedial activities, obligations, and requirements contained in the following work plans, final design reports, and the management plans. All plans listed below and previously approved by EPA, in consultation with DEQ, are incorporated by reference and are fully enforceable under this SOW:

(1) CSOU Residential Soils and Dust.

i. *CS OU Final Residential Soils Remedial Action Work Plan/Final Design Report* (July 2002, Site Document Register No. 500-05-81, SEMS No. 100011978);

ii. *Final 2015 Community Soils Operable Unit (CS OU) Residential Soils and Interior/Attic Dust Remedial Action Work Plan/Final Design Report (RAWP/FDR)* (Aug. 2015, Site Document Register No. 500-05-83, SEMS No. 100011980); and

iii. *Final Community Soils Operable Unit (CS OU) Residential Soils and Interior/Attic Dust Remedial Action Work Plan/Final Design Report (RAWP/FDR)* (June 2020, Site Document Register No. 500-05-762, SEMS No. 100011981).[1]

(2) CSOU Historic Railroad Bed in Commercial/Industrial Areas.

i. *CS OU Final Historic Railroad Beds and Commercial/Industrial Areas Remedial Action Work Plan/Final Design Report* (Oct. 2005, Site Document Register 500-05-82, SEMS No. 100011979).

(3) Other Approved Plans.

i. *Final Work Plan for Teressa Ann Terrace and Cedar Park Homes Residential Time Critical Removal Action* (ARCO 1991, Site Document Register No. 500-25-595, SEMS No. 1970911).

(4) ISWPs. In order to facilitate remediation of non-AR-owned residential and commercial land parcels in the CSOU containing soils impacted above the ROD-specified action levels (250 mg/kg arsenic or 400 mg/kg lead), AR has developed and shall continue to develop ISWPs for each such land parcel. Each ISWP shall be signed by the landowner, EPA, and AR, and shall address the extent of soil removal and soil/aggregate cover placement within each parcel as

[1] The attic dust portion of the Remedy is being implemented by ADLC in accordance with the Remedy, Coordination, Funding, and Settlement Agreement (RCFSA) between AR and ADLC, as amended, with approval by EPA (June 2020, Site Document Register No. 100-17-948, SEMS No. 1970902).

determined through data collection activities. Each ISWP is incorporated by reference and is fully enforceable under and in accordance with this SOW.

(c) **Remedial Action Schedules.** Section 6.0 of the SMP, attached to this SOW and incorporated herein, sets forth a provisional schedule for completion of all RA at the CSOU, including construction start and completion and pre-final and final inspection dates. These dates may be subsequently revised upon approval by EPA.

(d) **RA Implementation.** AR shall implement the RA specified in the CSOU work plans, design reports, management plans, ISWPs, and other work plans described above in Subsection 4.2(b) and in any subsequent approved revisions until the CSOU Performance Standards have been achieved, and for so long thereafter as otherwise required under the CD and/or this SOW.

4.3 ARWW&S OU.

(a) **Completed RA Work.** AR has previously completed much of the approved removal and remedial activities at the ARWW&S OU pursuant to the following administrative orders:

(1) Administrative Order for Remedial Action, AO Docket No. CERCLA-08-2001-01, December 11, 2000;

(2) Administrative Order for Remedial Action, AO Docket No. CERCLA-08-2002-07, June 7, 2002;

(3) Administrative Order for Remedial Action, AO Docket No. CERCLA-08-2002-09, September 9, 2002;

(4) Administrative Order for Remedial Action, AO Docket No. CERCLA-08-2002-10, September 23, 2002;

(5) Administrative Order for Remedial Action, AO Docket No. CERCLA-08-2003-0017, October 13, 2003;

(6) Administrative Order for Remedial Action, AO Docket No. CERCLA-08-2003-0018, November 3, 2003;

(7) Administrative Order for Remedial Action, AO Docket No. CERCLA-08-2004-0001, October 20, 2003;

(8) Administrative Order for Remedial Action, AO Docket No. CERCLA-08-2005-0007, August 5, 2005;

(9) Administrative Order for Remedial Action, AO Docket No. CERCLA-08-2007-0008, June 5, 2007;

(10) Administrative Order for Remedial Action, AO Docket No. CERCLA-08-2008-0009, September 22, 2008;

(11) Administrative Order for Remedial Action, AO Docket No. CERCLA-08-2010-0004, September 9, 2010;

(12) Administrative Order for Remedial Action, AO Docket No. CERCLA-08-2010-0005, September 9, 2010;

(13) Administrative Order for Remedial Action, AO Docket No. CERCLA-08-2011-0009, issued by EPA on June 2, 2011;

(14) Administrative Order for Remedial Action, AO Docket No. CERCLA-08-2015-0010, September 24, 2015; and

(15) Administrative Order for Remedial Action, AO Docket No. CERCLA-08-2016-0005, June 17, 2016.

(b) **ARWW&S RA Workplans.** This SOW is intended to facilitate the completion of ARWW&S OU remedial activities, obligations, and requirements contained in the following work plans, final design reports, and management plans. All plans listed below and previously approved by EPA, in consultation with DEQ, are incorporated by reference and are fully enforceable under this SOW. The ARWW&S OU has been divided into 15 separate RDUs and 2 expansion areas, each of which has one or more corresponding RAWPs and FDRs or other approved plans:

(1) **ARWW&S RDU 1 – Stucky Ridge Uplands.**

i. *Remedial Design Unit (RDU) 1 – Stucky Ridge Remedial Action Work Plan (RAWP)/Final Design Report (FDR) 2002 Stucky Ridge RA (portion of Stucky Ridge Area No. 4 RAWP) Uplands Vegetation* (July 2002, Site Document Register No. 601-05-513, SEMS No. 1970844);

ii. *Remedial Design Unit 1 – Stucky Ridge Final Design Report* (June 2005 (Site Document Register No. 601-05-21, SEMS No. 1970841);

iii. *Remedial Design Unit 1 – Stucky Ridge Uplands Final Remedial Action Work Plan* (June 2005, Site Document Register No. 601-05-22, SEMS No. 1970842); and

iv. *ARWW&S OU Supplemental Surface Water Controls Remedial Design/RemedialAction (RD/RA) Report*

(Aug. 2020, Site Document Register No. 100-15-784, SEMS No. 1970906).

(2) ARWW&S RDU 2 – Lost Creek Uplands.

i. *Remedial Design Unit 2 – Lost Creek Final Design Report* (Jan. 2005, Site Document Register No. 602-05-24, SEMS No. 1970845);

ii. *Remedial Design Unit 2 – Lost Creek Uplands Final Remedial Action Work Plan* (June 2005, Site Document Register No. 601-05-23, SEMS No. 1970843);

iii. *ARWW&S OU Supplemental Surface Water Controls Remedial Design/Remedial Action (RD/RA) Report* (Aug. 2020, Site Document Register No. 100-15-784, SEMS No. 1970906); and

iv. *United States Forest Service – Individual Site Work Plan (ISWP)* (August 2022, Site Document Register No. 100-06-924, SEMS No. 1970912).

(3) ARWW&S RDU 3 – Smelter Hill Uplands.

i. *Remedial Design Unit 3 – Smelter Hill Uplands Final Design Report* (July 2013, Site Document Register No. 603-05-26, SEMS No. 1970847);

ii. *Remedial Design Unit 3 – Smelter Hill Uplands Final Remedial Action Work Plan* (RAWP) (July 2013, Site Document Register No. 603-05-25, SEMS No. 1970907);

iii. *Draft Final Smelter Hill Uplands Remedial Design Unit (RDU) 3 Final Design Report (FDR) Appendix B.5 Engineered Storm Water Controls Plan (ESWCP) Addendum 2 – Birch Street and AFFCO Gulch Sediment Controls Ponds* (Apr. 2016, Site Document Register No. 603-05-286, SEMS No. 1970848); and

iv. *ARWW&S OU Supplemental Surface Water Controls Remedial Design/RemedialAction (RD/RA) Report* (Aug. 2020, Site Document Register No. 100-15-784, SEMS No. 1970906).

(4) ARWW&S RDU 4 – Anaconda Ponds.

i. *Anaconda Ponds Remedial Design Unit 4 –Remedial Action Work Plan/Final Design Report* (Nov. 2000, Site Document Register No. 604-05-409, SEMS No. 1970849).

(5) ARWW&S RDU 5 – Active Railroad/Blue Lagoons.

(i) *Remedial Design Unit 5 – Anaconda Active Railroad Beds Remedial Action Work Plan/Final Design Report* (Sept. 2003, Site Document Register No. 605-05-364, SEMS No. 1970852);

(ii) *Remedial Design Unit 5 – Anaconda In-Town Remedial Action Work Plan* (Mar. 2008, Site Document Register No. 605-05-363, SEMS No. 1970851);

(iii) *Remedial Design Unit 5 – East Portion Active Railroad/Blue Lagoons Remedial Action Work Plan/Final Design Report* (July 2007, Site Document Register No. 605-05-29, SEMS No. 1970850);

(iv) *Draft Final Remedial Design Unit (RDU) 5 East Portion Active Railroad/Blue Lagoons Remedial Action Work Plan/Final Design Report (RAWP/FDR) – Addendum 1: Mill Creek and Willow Creek Railroad Trestle Crossings Removal and Replacement Design* (Jan. 2019, Site Document Register No. 605-05-871, SEMS No. 1970853); and

(v) *Final Active Railroad Superfund Operations and Maintenance O&M Plan* (May 2021, Site Document Register No. 605-29-750, SEMS No. 1970854).

(6) ARWW&S RDU 5 – Conversion Remedy.

(i) *Remedial Design Unit 5 – Active Railroad Conversion Remedial Action Work Plan (RAWP)* (August 2022, Site Document Register No. 605-05-941, SEMS No.1970913).

(7) ARWW&S RDU 6 – South Opportunity Uplands.

i. *Remedial Design Unit 6 – South Opportunity Final Design Report* (Apr. 2006, Site Document Register No. 606-05-32, SEMS No. 1970856); and

ii. *Remedial Design Unit 6 – South Opportunity Uplands Final Remedial Action Work Plan* (Apr. 2006, Site Document Register No. 606-05-31, SEMS No. 1970855).

(8) ARWW&S RDU 7 – North Opportunity Uplands.

i. *Remedial Design Unit 7 – North Opportunity Uplands Final Design Report* (May 2008, Site Document Register No. 607-05-33, SEMS No. 1970857); and

ii. *Remedial Design Unit 7 – North Opportunity Uplands Final Remedial Action Work Plan* (May 2008, Site Document Register No. 607-05-34, SEMS No. 1970858).

(9) ARWW&S RDU 8 – Opportunity Ponds.

i. *Final Opportunity Ponds Remedial Design Unit (RDU) 8 Triangle Waste Area Remedial Action Work Plan/Final Design Report (RAWP/FDR)* (May 2002, Site Document Register No. 608-05-36, SEMS No. 1970859);

ii. *Final Opportunity Ponds Remedial Design Unit (RDU) 8 A-Cells Area Remedial Action Work Plan/Final Design Report (RAWP/FDR)* (Nov. 2002, Site Document Register No. 608-05-121, SEMS No. 1970860);

iii. *Final Opportunity Ponds RDU 8 Triangle Waste Area Remedial Action Work Plan/Final Design Report (RAWP/FDR) North WLIP Addendum* (May 2003, Site Document Register No. 608-05-413, SEMS No. 1970870);

iv. *Final Opportunity Ponds Remedial Design Unit (RDU) 8 A-Cells Area Remedial Action Work Plan/Final Design Report (RAWP/FDR) A.9 Cell Addendum* (Oct. 2003, Site Document Register No. 608-05-303, SEMS No. 1970867);

v. *Final Opportunity Ponds Remedial Design Unit (RDU) 8 Phase I Haul Road Construction Remedial Action Work Plan (RAWP)* (Apr. 2004, Site Document Register No. 608-05-367, SEMS No. 1970863);

vi. *Final Opportunity Ponds Remedial Design Unit (RDU) 8 Remedial Action Work Plan/Final Design Report Volumes I through VI* (Jan. 2006, Site Document Register Nos. 608-05-376, 608-05-377, 608-05-416, 608-05-378, 608-05-379, 608-05-381, and 608-05-382, SEMS Nos. 1970864 to 1970869);

vii. *Final Opportunity Ponds Remedial Design Unit (RDU) 8 Milltown Sediments Remedial Action Work Plan/Final Design Report (RAWP/FDR)* (Mar. 2012, Site Document Register No. 608-05-317, SEMS No. 1970862);

viii. *Final Opportunity Ponds Remedial Design Unit (RDU) 8 Groundwater and Surface Water Management System Operation, Maintenance, and Monitoring Plan* (Nov. 2014, Site Document Register No. 608-11-95, SEMS No. 1970872); and

ix. *Final Anaconda Smelter Development Repository Operation and Management (O&M) Plan Revision 1,* (2009, Site Document Register No. 608-12-93, SEMS No. 1970873).

(10) ARWW&S RDU 9 – Fluvial Tailings.

i. *Remedial Design Unit 9 – Fluvial Tailings Final Design Report/ Remedial Action Work Plan* (2007, Site Document Register No. 609-05-1, SEMS No. 1970874);

ii. *Willow Creek Floodplain Project Area Final Design Report* (2012, Site Document Register No. 609-05-3, SEMS No. 1970875);

iii. *Willow Creek Floodplain Project Area Final Remedial Action Work Plan* (2012, Site Document Register No. 609-05-4, SEMS No. 1970876); and

iv. *Willow Creek Riparian Vegetation and Bank Stability Monitoring Report* (2017, Site Document Register No. 609-15-869, SEMS No. 1970909).

(11) ARWW&S RDU 10 – Warm Springs Creek.

i. *Remedial Design Unit 10 – Warm Springs Creek Final Design Report* (2012, Site Document Register No. 610-05-249, SEMS No. 1970878);

ii. *Remedial Design Unit 10 – Warm Springs Creek Final Remedial Action Work Plan* (2014, Site Document Register No. 610-05-5, SEMS No. 1970877); and

iii. *Final Riparian Area Vegetation & Bank Stability Monitoring Plan for Willow Creek and Warm Springs Creek* (Apr. 2015, Site Document Register No. 610-12-591, SEMS No. 1970879).

(12) ARWW&S RDU 11 – Cashman Concentrates.

i. *Remedial Action Work Plan/Final Design Report for Relocation/Reprocessing of the Cashman Concentrate Remedial Design Unit (RDU) 11 – Cashman Concentrate* (Oct. 2003, Site Document Register No. 611-05-6, SEMS No. 1970880); and

ii. *Cashman Concentrate Remedial Design Unit 11, Final Remedial Action Report* (September 2004, Site Document Register No. 611-19-952, SEMS No. 1119726).

(13) ARWW&S RDU 12 – Slag Pile Remedy.

i. *Slag Management Plan, Remedial Design Unit 12 – Slag, Main Granulated Slag Site* (Aug. 2020, Site Document Register No. 612-12-782, SEMS No. 1970883);

ii. *Slag Management Plan, Remedial Design Unit 12 – Slag, West Stack Slag* (Aug. 2020, Site Document Register No. 612-12-780, SEMS No. 1970882); and

iii. *Slag Management Plan, Remedial Design Unit 12 – Slag, Anaconda Landfill Slag* (August 2022, Site Document Register No. 612-12-935, SEMS No. 1970914).

(14) ARWW&S RDU 13 – Old Works WMA Groundwater.

i. *Old Works Remedial Design Unit 13 Final Design Report* (2010, Site Document Register No. 613-05-365, SEMS No. 1970884); and

ii. *Final Groundwater Management Plan* ([January 2021], Site Document Register No. 100-12-920, SEMS No. 1970837).

(15) ARWW&S RDU 14 - Smelter Hill Facility Area.

i. *Final Smelter Hill Facilities Area Remedial Design Unit 14 Remedial Action Work Plan/Final Design Report* (Dec. 2005, Site Document Register No. 614-05-371, SEMS No. 1197822-24); and

ii. *Final Smelter Hill Repository Complex (SHRC) Long-Term Operation, Monitoring, and Maintenance Plan* (July 2020, Site Document Register No. 614-29-776, SEMS No. 1970886).

(16) ARWW&S RDU 15 – Mount Haggin Uplands.

i. *Remedial Design Unit 15 – Mount Haggin Final Design Report* (2007, Site Document Register No. 615-05-42, SEMS No. 1970887); and

ii. *Remedial Design Unit 15 – Mount Haggin Uplands Final Remedial Action Work Plan* (2007, Site Document Register No. 615-05-43, SEMS No. 1970888).

(17) ARWW&S West Galen Expansion Area.

i. *West Galen Expansion Area Final Design Report* (May 2008, Site Document Register No. 616-05-44, SEMS No. 1970889); and

ii. *West Galen Expansion Area Final Remedial Action Work Plans* (2005, Site Document Register Nos. 616-05-45 and 616-05-250, SEMS Nos. 1970890 and 1970891).

(18) ARWW&S Dutchman Creek Expansion Area.

i. *Dutchman Creek High Arsenic Area Final Design Report* (2012, Site Document Register No. 617-05-273, SEMS No. 1970892); and

ii. *Final Dutchman Property Management Plan* to the *Final AR Wetlands Plan* (AR, 2016, Site Document Register No. 617-26-285, SEMS No. 1970910).

(19) ARWW&S Surface Water Remedy.

i. *Anaconda Surface Water Management Plan* (Aug. 2020, Site Document Register No. 100-12-781, SEMS No. 1970835);

ii. *ARWW&S OU Supplemental Surface Water Controls Remedial Design/RemedialAction (RD/RA) Report* (Aug. 2020, Site Document Register No. 100-15-784, SEMS No. 1970906);

iii. *Final Vegetation Management Plan (Revision 2) (VMP)* (Feb. 2022, Site Document Register No. 100-12-89, SEMS No. 1970834); and

iv. *Final Engineered Controls Inspection and Maintenance (I&M) Plan, Revision 2* (Oct. 2016, Site Document Register No. 100-11-90, SEMS No. 1970833).

(20) ARWW&S Groundwater Remedy.

i. *Anaconda Groundwater Management Plan* (Jan. 2021, Site Document Register No. 100-12-920, SEMS No. 1970837);

ii. *Final Long-Term Groundwater Monitoring Program Quality Assurance Project Plan - Revision 2* (September 2022, Site Document Register No. 100-23-872, SEMS No. 100012082); and

iii. *Final Domestic Well Monitoring Plan and Quality Assurance Project Plan* (Sept. 2020, Site Document Register No. 100-12-866, SEMS No. 1970836); and *Anaconda Groundwater Management Plan* (Jan. 2021, Site Document Register No. 100-12-920, SEMS No. 1970837).

(c) Remedial Action Schedules. Section 6.0 of the SMP sets forth a provisional schedule for completion of all RA at the ARWW&S OU, including construction start and completion and pre-final and final inspection dates. These dates may be subsequently revised upon approval by EPA.

(d) RA Implementation. Except for RA activities that are the responsibility of and are being performed by the State, as described in Section 3.3(b)(1) of this SOW, AR shall implement the RA specified in the ARWW&S OU work plans, design reports, management plans, ISWPs, and other work plans described above in Subsection 4.3(b) above and in any subsequent approved revisions until the ARWW&S OU Performance Standards have been achieved, and for so long thereafter as otherwise required under the CD and/or this SOW.

5. Additional RA Requirements.

5.1 Meetings and Inspections.

(a) Preconstruction Investigation.

(1) Preconstruction Conference. AR shall hold preconstruction conferences with EPA and others as directed or approved by EPA and as described in Section 7 of the SMP. AR shall prepare minutes of any conference and shall distribute the minutes to all Parties. AR shall conduct any preconstruction investigations as determined by the preconstruction conference.

(2) Preconstruction Investigation Report (ISWP or Request for Change). AR shall make modifications to any RA work plan or design report in accordance with the outcome of the preconstruction conference and/or investigation. Any such modifications shall be made in accordance with Section 8.9 of this SOW.

(3) Periodic Meetings. During the construction portion of any RA (RA Construction), AR shall meet regularly with EPA, and others as directed or determined by EPA, to discuss construction issues. AR shall distribute an agenda and list of attendees to all Parties prior to each meeting. AR shall prepare minutes of the meetings and shall distribute the minutes to all Parties.

(4) Inspections. EPA or its representative shall conduct periodic inspections of the Work. At EPA's request, the Supervising Contractor or other designee shall accompany EPA or its representative during inspections.

i. If requested, AR shall provide on-site office space for EPA or authorized oversight personnel to perform their oversight duties. The minimum office requirements are: a private office with at least 150 square feet of floor space, an office desk with chair, a four-drawer file cabinet, and a telephone with a private line, access to facsimile, reproduction, and personal computer equipment, wireless internet access, and sanitation facilities.

ii. AR shall provide personal protective equipment needed for EPA personnel and any oversight officials to perform their oversight duties.

iii. Upon notification by EPA of any deficiencies in the RA Construction, AR shall take all necessary steps to correct the deficiencies and/or bring the RA Construction into compliance with the applicable approved RAWP, FDR, and/or ISWP and/or any approved design changes. If applicable, AR shall comply with any schedule provided by EPA in its notice of deficiency.

(b) Emergency Response and Reporting.

(1) Emergency Response and Reporting. If any event occurs during performance of the Work that causes or threatens to cause a release of Waste Material on, at, or from the Site and that either constitutes an emergency situation or that may present an immediate threat to public health or welfare or the environment, AR shall: (1) immediately take all appropriate action to prevent, abate, or minimize such release or threat of release; (2) immediately notify the authorized EPA officer (as specified in Section 5.1(b)(3) orally); and (3) take such actions in consultation with the authorized EPA officer and in accordance with all applicable provisions of the Health and Safety Plan, the Emergency Response Plan, and any other deliverable approved by EPA under the SOW.

(2) Release Reporting. Upon the occurrence of any event during performance of the Work that AR is required to report pursuant to Section 103 of CERCLA, 42 U.S.C. § 9603, or

Section 304 of the Emergency Planning and Community Right-to-know Act (EPCRA), 42 U.S.C. § 11004, AR shall immediately notify the authorized EPA officer orally.

(3) The "authorized EPA officer" for purposes of immediate oral notifications and consultations under Subsections 5.1(b)(1) and 5.1(b)(2) is the EPA Project Coordinator, the EPA Alternate Project Coordinator (if the EPA Project Coordinator is unavailable), or the EPA Emergency Response Unit, Region 8 (if neither EPA Project Coordinator is available).

(4) For any event covered by Subsections 5.1(b)(1) and/or 5.1(b)(2), AR shall: (1) within 14 days after the onset of such event, submit a report to EPA describing the actions or events that occurred and the measures taken, and to be taken, in response thereto; and (2) within 30 days after the conclusion of such event, submit a report to EPA describing all actions taken in response to such event.

(5) The reporting requirements under Subsection 5.1(b) are in addition to the reporting required by CERCLA § 103, 42 U.S.C. § 9603, or EPCRA § 304, 42 U.S.C. § 11004.

(c) Off-Site Waste Shipments.

(1) AR may ship hazardous substances, pollutants, and contaminants from the Site to an off-Site facility only if it complies with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. AR will be deemed to be in compliance with CERCLA § 121(d)(3) and 40 C.F.R. § 300.440 regarding a shipment if AR obtains a prior determination from EPA that the proposed receiving facility for such shipment is acceptable under the criteria of 40 C.F.R. § 300.440(b).

(2) AR may ship Waste Material from the Site to an out-of-state waste management facility only if, prior to any shipment, it provides notice to the appropriate state environmental official in the receiving facility's state and to the EPA Project Coordinator. This notice requirement will not apply to any off-Site shipments when the total quantity of all such shipments does not exceed 10 cubic yards. The notice must include the following information, if available: (1) the name

and location of the receiving facility; (2) the type and quantity of Waste Material to be shipped; (3) the schedule for the shipment; and (4) the method of transportation. AR also shall notify the state environmental official referenced above and the EPA Project Coordinator of any major changes in the shipment plan, such as a decision to ship the Waste Material to a different out-of-state facility. AR shall provide the notice after the award of the contract for RA construction and before the Waste Material is shipped.

(3) AR may ship Investigation Derived Waste (IDW) from the Site to an off-Site facility only if it complies with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3); 40 C.F.R. § 300.440; EPA's Guide to Management of Investigation Derived Waste, OSWER 9345.3-03FS (Jan. 1992); and any IDW-specific requirements contained in the ROD. Wastes shipped off-Site to a laboratory for characterization, and RCRA hazardous wastes that meet the requirements for an exemption from RCRA under 40 CFR § 261.4(e) shipped off-site for treatability studies, are not subject to 40 C.F.R. § 300.440.

(4) The requirements of this Subsection 5.1(c) do not apply to off-Site shipments of slag that fall within the Scope of the Slag Pile Remedy identified in Subsection 3.3(b)(8) of this SOW.

(d) RA Construction Completion.

(1) To the extent not already obtained, AR may seek an RA Construction Completion determination for an OU or any OU sub-unit (such as an RDU, expansion area, specific project, RA element, or other subarea).

(2) For purposes of this Subsection 5.1(d), "RA Construction" comprises, for any RA that involves the construction and operation of a system to achieve Performance Standards (for example, groundwater or surface water restoration remedies), the construction of such system and the performance of all activities necessary for the system to function properly and as designed.

(3) **Inspection of Constructed Remedy.** AR shall schedule an inspection to review the construction and operation of the system and to review whether the system is functioning properly and as designed. The inspection must be attended by AR and EPA and/or their representatives. A re-inspection must be conducted if requested by EPA.

(4) **Operational and Functional Determination [Shakedown Period].** There shall be a shakedown period defined in each RAWP, FDR, ISWP, and/or the VMP for EPA to review whether the remedy is functioning properly and performing as designed. AR shall provide such information as EPA requests for such review.

(5) **RA Construction Completion Report**. Following the shakedown period, AR shall submit an RA Construction Completion Report (CCR) requesting EPA's determination that RA Construction has been completed. The RA CCR must, unless the requirement is waived by the authorized EPA officer: (1) include statements by AR's Project Coordinator that construction of the system is complete and that the system is functioning properly and as designed; (2) include a demonstration, and supporting documentation, that construction of the system is complete and that the system is functioning properly and as designed; (3) include as built drawings; (4) be prepared in accordance with Chapter 3 (Construction Action Completion) of EPA's *Close Out Procedures for National Priorities List Sites*, OSWER 9320.2-22 (May 2011) ("*Close Out Guidance*"), or, after the Effective Date of the CD, *Close Out Procedures for National Priorities List Sites*. OLEM Directive 9320.2-23 (June 2022), as supplemented by *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017); and (5) be certified in accordance with Section 8.5 (Certification).

(6) **Incomplete Work.** If EPA determines that RA Construction is incomplete for the OU or OU sub-unit specified in the CCR, EPA shall so notify AR. EPA's notice must include a description of, and schedule for, the activities that AR must

perform to complete RA Construction. EPA's notice may include a schedule for completion of such activities or may require AR to submit a proposed schedule for EPA approval. AR shall perform all activities described in the EPA notice in accordance with the schedule, which schedule may be modified by agreement of AR and EPA.

(7) If EPA determines, based on the initial or any subsequent CCR, that RA Construction is complete, EPA shall so notify AR.

(e) Certification of RA Completion.

(1) To the extent not already obtained, AR may seek Certification of RA Completion for an OU or any OU sub-unit (such as an RDU, expansion area, specific project, RA element, or other subarea).

(2) The RA is "Complete" for each OU or OU sub-unit for purposes of this Subsection 5.1(e) when it has been fully performed and the Performance Standards have been achieved.

(3) **RA Completion Inspection.** AR shall schedule an inspection for the purpose of obtaining EPA's Certification of RA Completion. The inspection must be attended by AR and EPA and/or their representatives.

(4) **RA Report.** Following the inspection, AR shall submit an RA Report to EPA requesting EPA's Certification of RA Completion. The RA Report must: (1) include certifications by a registered professional engineer and by AR's Project Coordinator that the RA is complete; (2) include as-built drawings signed and stamped by a registered professional engineer; (3) be prepared in accordance with Chapter 2 (Remedial Action Completion) of EPA's *Close Out Guidance* (May 2011 or June 2022), as supplemented by *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017); (4) contain monitoring data to demonstrate that applicable Performance Standards have been achieved; (5) if applicable, inform EPA that Certification of RA Completion for a particular sub-unit would result in Certification of RA Completion for the entire

OU; and (6) be certified in accordance with Section 8.5 (Certification).

(5) If EPA concludes that the RA is not Complete, EPA shall so notify AR. EPA's notice must include a description of any deficiencies. EPA's notice may include a schedule for addressing such deficiencies or may require AR to submit a schedule for EPA approval. AR shall perform all activities described in the notice in accordance with the schedule, which schedule may be modified by agreement of AR and EPA.

(6) If EPA concludes, based on the initial or any subsequent RA Report requesting Certification of RA Completion, that the RA is complete for a particular OU or OU sub-unit, EPA shall so certify to AR. This Certification of Remedial Action Completion will not affect AR's remaining obligations under the Consent Decree. Certification of RA Completion for the final sub-unit of an OU (e.g., the final RDU, expansion area, specific project, RA element, or other subarea of an OU), will constitute Certification of RA Completion for the entire OU.

(7) **National Priority List (NPL) Deletion**. The Parties agree that individual OU sub-units shall remain on the NPL until RA is completed for the entire OU. Each OU of the Site shall become eligible for deletion from the National Priority List (NPL) after EPA certifies the completion of all Remedial Action required within that OU, and the entire Site shall become eligible for deletion from the NPL after EPA certifies the completion of all Remedial Action required at the Site pursuant to Section 5.1(h).

(f) **Certification of Remedial Action Completion for the OWGC Remedy.** The OWGC Remedy has been deemed "Complete" by EPA pursuant to Section 122(f)(3) of CERCLA, 42 U.S.C. § 9622(f)(3). EPA certified the OWGC Remedy as complete on July 15, 2022.

(g) **Certification of Remedial Action Completion for the Mill Creek OU and Flue Dust OU Remedies.** The Mill Creek OU remedy and Flue Dust OU remedies have been deemed "Complete" by EPA pursuant to Section 122(f)(3) of CERCLA, 42 U.S.C. § 9622(f)(3).

EPA certified the Mill Creek OU Remedy as complete on July 15, 2022; and certified the Flue Dust OU RA as complete on July 23, 2020.

(h) **Certification of Site-Wide Remedial Action Completion.** The RA is "Complete" for the Anaconda Site for purposes of this Subsection 5.1(e)(6) when all RA for the OW/EADA, CS, and ARWW&S OUs has been fully performed, Performance Standards have been achieved, and AR has obtained EPA's Certification of RA Completion for each OU. Certification of RA Completion for the third and final OU, whichever that is, will constitute Certification of Site-Wide Remedial Action Completion for purposes of the CD, including Section XV of the CD (Covenants and Reservations by United States and State). Certification of Site-Wide Remedial Action Completion will not affect AR's remaining obligations under the CD.

(i) **Periodic Review Support.** AR shall provide periodic review support as described in the SMP. Periodic review support addresses the studies and investigations that AR shall conduct to support EPA's reviews of whether the RA is protective of human health and the environment in accordance with Section 121(c) of CERCLA, 42 U.S.C. § 9621(c) (also known as Five Year Reviews or FYRs). AR shall develop the plan in accordance with *Comprehensive Five-Year Review Guidance*, OSWER 9355.7-03B-P (June 2001), and any other relevant FYR guidance.

(j) **Certification of Work Completion.**

(1) **Work Completion Inspection.** Upon completion of all Work, AR shall schedule an inspection for the purpose of obtaining EPA's Certification of Work Completion. The inspection must be attended by AR and EPA and/or their representatives.

(2) **Work Completion Report.** Following the inspection, AR shall submit a report to EPA requesting EPA's Certification of Work Completion. The report must: (1) include certifications by a registered professional engineer and by AR's Project Coordinator that the Work, including all O&M activities, is complete; and (2) be certified in accordance with Section 8.5 (Certification). If the Certification of Work

Completion Report submitted under this Subsection 5.1(j)(2) includes all elements required under this Subsection 5.1(j)(2), then the Certification of Work Completion Report suffices to satisfy all requirements under this Subsection 5.1(j)(2).

(3) If EPA concludes that the Work is not complete, EPA shall so notify AR. EPA's notice must include a description of the activities that AR must perform to complete the Work. EPA's notice must include specifications and a schedule for such activities or must require AR to submit specifications and a schedule for EPA approval. AR shall perform all activities described in the notice or in the EPA-approved specifications and schedule, which schedule may be modified by agreement of AR and EPA.

(4) If EPA concludes, based on the initial or any subsequent report requesting Certification of Work Completion, that the Work is complete, EPA shall so certify in writing to AR. Issuance of the Certification of Work Completion does not affect the following continuing obligations: (1) Periodic Review Support activities; (2) obligations under Sections VIII (Property Requirements), XIX (Retention of Records), and XVIII (Access to Information) of the CD; (3) ICs obligations as provided in the ICIAP; and (4) reimbursement of Anaconda Site Future Response Costs under Section X (Payment of Response Costs) of the CD.

6. CONVERSION REMEDIES

6.1 OWGC Conversion Remedy. The OWGC Conversion Remedy has been approved by EPA as a contingent remedy to convert the OWGC property from its current use as golf course to other open space recreational uses. The contingent remedy will be implemented if and when AR or ADLC provide written notice to EPA stating that OWGC golf course operations will be permanently suspended. If the contingent event stated in this Section 6.1 has occurred, AR shall implement the OWGC Conversion Remedy in accordance with applicable provisions of the OW/EADA OU ROD; the *Old Works Golf Course Conversion Remedial Action Work Plan* (February 21, 2020), including any future modifications approved by EPA; and the requirements of this SOW.

6.2 RDU 5 Conversion Remedy. The RDU 5 Conversion Remedy is a contingent remedy to convert any segment of the active railroad portion of RDU 5 from its current use to an alternate dedicated development consistent with the current waste containment remedy, such as a public entity trail in accordance with the "railbanking" process authorized by Section 8(d) of the National Trails Systems Act, 16 U.S.C. § 1247(d), and 49 U.S.C. § 10903 and its implementing regulations (49 C.F.R. Part 1152). The contingent remedy will be implemented if and when any segment of the active railroad service is suspended. If the contingent event stated in this Section 6.2 has occurred, AR shall implement the *Remedial Design Unit 5 – Active Railroad Conversion Remedial Action Work Plan (RAWP)* (August 2022, Site Document Register No. 605-05-941, SEMS No. 1970913).

6.3 Testing/Investigations. If testing and/or investigations are needed before the OWGC Conversion Remedy or RDU 5 Conversion Remedy may be implemented, AR shall submit a plan for implementing such testing and/or investigations; implement such testing and/or investigations in accordance with EPA's approval and/or modification of such plan; and submit reports to EPA regarding the results of such testing and/or investigations.

6.4 Reports Regarding Performance of Conversion Remedies. AR shall submit such reports as EPA requests regarding the performance of the OWGC Conversion Remedy or RDU 5 Conversion Remedy.

6.5 Certification of Construction Completion and Remedial Action Completion for the Conversion Remedies. Upon completion of the OWGC Conversion Remedy or RDU 5 Conversion Remedy, AR may seek and EPA may approve RA Construction Completion using procedures consistent with those specified in Subsection 5.1(d) and RA Completion using procedures consistent with those specified in Subsection 5.1(e).

6.6 Other Modifications. Upon completion of the OWGC Conversion Remedy or RDU 5 Conversion Remedy, AR shall submit any necessary updates to applicable long-term plans for EPA approval.

7. REPORTING

7.1 Progress Reports. Commencing with the month following the Effective

Date, and until EPA approves RA Construction Completion for all OUs, AR shall submit progress reports to EPA on a monthly basis, or as otherwise requested by EPA. The reports must cover all activities that took place during the prior reporting period, including:

(a) The actions that have been taken toward achieving compliance with the CD;

(b) A summary of all results of sampling, tests, and all other data received or generated by AR;

(c) A description of all deliverables that AR submitted to EPA;

(d) A description of all activities relating to RA Construction that are scheduled for the next six weeks;

(e) An updated RA Construction Schedule, together with information regarding percentage of completion, delays encountered or anticipated that may affect the future schedule for implementation of the Work, and a description of efforts made to mitigate those delays or anticipated delays;

(f) A description of any modifications to the work plans or other schedules that AR has proposed or that have been approved by EPA; and

(g) A description of all activities undertaken in support of the CIP during the reporting period and those to be undertaken in the next six weeks.

7.2 Notice of Progress Report Schedule Changes. If the schedule for any activity described in the Progress Reports, including activities required to be described under Section 7.1, changes, AR shall notify EPA of such change at least 7 days before performance of the activity.

8. DELIVERABLES

8.1 Applicability. AR shall submit deliverables for EPA approval or for EPA comment as specified in this SOW and the SMP. If neither is specified, the deliverable does not require EPA's approval or comment. Sections 8.2 (In Writing) through 8.4 (Technical Specifications) and 8.9 (Modification of Deliverables) apply to all deliverables. Section 8.5 (Certification) applies to any deliverable that is required to be certified. Section 8.7 (Approval of Deliverables) applies to any deliverable that is required to be submitted for EPA approval.

8.2 In Writing. As provided in Paragraph 91 of the CD, all deliverables under this SOW must be in writing unless otherwise specified.

8.3 General Requirements for Deliverables. All deliverables must be submitted by the deadlines in the RA Schedule, as applicable. AR shall submit all deliverables to EPA in electronic form. Technical specifications for sampling and monitoring data and spatial data are addressed in Section 8.4. All other deliverables shall be submitted to EPA in the electronic form specified by the EPA Project Coordinator. If any deliverable includes maps, drawings, or other exhibits that are larger than 8.5" by 11", AR shall also provide EPA with paper copies of such exhibits.

8.4 Technical Specifications.

(a) Sampling and monitoring data should be submitted in standard U.S. EPA Region 8 Electronic Data Deliverable (EDD) format current at the time of generation. Other delivery methods may be allowed if electronic direct submission presents a significant burden or as technology changes.

(b) Spatial data, including spatially-referenced data and geospatial data, should be submitted: (1) in the ESRI File Geodatabase format; and (2) as unprojected geographic coordinates in decimal degree format using North American Datum 1983 (NAD83) or World Geodetic System 1984 (WGS84) as the datum. If applicable, submissions should include the collection method(s). Projected coordinates may optionally be included but must be documented. Spatial data should be accompanied by metadata, and such metadata should be compliant with the Federal Geographic Data Committee (FGDC) Content Standard for Digital Geospatial Metadata and its EPA profile, the EPA Geospatial Metadata Technical Specification. An add-on metadata editor for ESRI software, the EPA Metadata Editor (EME), complies with these FGDC and EPA metadata requirements and is available at https://www.epa.gov/geospatial/epa-metadata-editor.

(c) Each file must include an attribute name for each site unit or sub-unit submitted. Consult https://www.epa.gov/geospatial/geospatial-policies-and-standards for any further available guidance on attribute identification and naming.

(d) Spatial data submitted by AR does not, and is not intended to, define the boundaries of the Site.

8.5 Certification. All deliverables that require compliance with this Section 8.5 must be signed by AR's Project Coordinator, or other responsible official of AR, and must contain the following statement:

I certify under penalty of law that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or who are directly responsible for authoring the relevant document, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

8.6 Quality Assurance, Sampling, and Data Analysis.

(a) Sampling QA/QC. AR shall use applicable portions of the approved quality assurance, quality control, and chain of custody procedures for all samples in accordance with the CFRSSI QAPP and any amendments made thereto or alternative plan approved for use in place of the CFRSSI QAPP during the course of the implementation of this CD. If relevant to the proceeding, the Parties agree that validated sampling data generated in accordance with the QAPP(s) and reviewed and approved by EPA shall be admissible as evidence, without objection, in any proceeding under this CD. AR shall ensure that EPA and DEQ personnel and their authorized representatives are allowed access at reasonable times to all laboratories utilized by AR in implementing the CD. In addition, AR shall ensure that such laboratories shall analyze all samples submitted by EPA and DEQ pursuant to the QAPP for quality assurance monitoring. AR shall ensure that the laboratories it utilizes for the analysis of samples taken pursuant to the CD perform all analyses according to accepted EPA methods. Accepted EPA methods consist of those methods which are documented in the CFRSSI LAP and any amendments made thereto or alternative

protocol approved for use in place of the CFRSSI QAPP during the course of the implementation of the CD. AR shall ensure that all laboratories it utilizes for analysis of samples taken pursuant to the CD participate in an EPA or EPA equivalent QA/QC program. AR shall ensure that all field methodologies utilized in collecting samples for subsequent analysis pursuant to the CD will be conducted in accordance with the procedures set forth in the QAPP or approved protocol.

(b) **Sampling.** Upon request, AR shall allow split or duplicate samples to be taken by EPA and DEQ or their authorized representatives. AR shall notify EPA and DEQ not less than ten (10) days in advance of any non-routine sample collection activity unless shorter notice is agreed to by EPA and DEQ. In addition, EPA and DEQ shall have the right to take any additional samples that EPA or DEQ deem necessary. Upon request, EPA shall allow AR to take split or duplicate samples of any samples they take as part of EPA's oversight of AR's implementation of the Work.

(c) **Data Submittal.** AR shall submit to both EPA and DEQ an electronic copy of the results of all sampling and/or tests or other data obtained or generated by or on behalf of AR with respect to the Site and/or the implementation of the CD in the next monthly progress report, unless EPA agrees otherwise or unless otherwise provided for in the SOW, RAWP, FDR, ISWP, or resulting plans.

8.7 Approval of Deliverables.

(a) **Initial Submissions.**

(1) After review of any deliverable that is required to be submitted for EPA approval under the CD or the SOW, EPA shall: (i) approve, in whole or in part, the submission; (ii) approve the submission upon specified conditions; (iii) disapprove, in whole or in part, the submission; or (iv) any combination of the foregoing.

(2) EPA also may modify the initial submission to cure deficiencies in the submission if: (i) EPA determines that disapproving the submission and awaiting a resubmission would cause substantial disruption to the Work; or (ii) previous submission(s) have been disapproved due to material

defects and the deficiencies in the initial submission under consideration indicate a bad faith lack of effort to submit an acceptable deliverable.

(b) **Resubmissions.** Upon receipt of a notice of disapproval under Subsection 8.7(a) (Initial Submissions), or if required by a notice of approval upon specified conditions under Subsection 8.7(a), AR shall, within 30 days or such longer time as specified by EPA in such notice, correct the deficiencies and resubmit the deliverable for approval. After review of the resubmitted deliverable, EPA may: (1) approve, in whole or in part, the resubmission; (2) approve the resubmission upon specified conditions; (3) modify the resubmission; (4) disapprove, in whole or in part, the resubmission, requiring AR to correct the deficiencies; or (5) any combination of the foregoing.

(c) **Implementation.** Upon approval, approval upon conditions, or modification by EPA under Subsection 8.7(a) (Initial Submissions) or Subsection 8.7(b) (Resubmissions), of any deliverable, or any portion thereof: (1) such deliverable, or portion thereof, will be incorporated into and enforceable under the CD; and (2) AR shall take any action required by such deliverable, or portion thereof. The implementation of any non-deficient portion of a deliverable submitted or resubmitted under Subsection 8.7(a) or Subsection 8.7(b) does not relieve AR of any liability for stipulated penalties under Section XIV (Stipulated Penalties) of the CD.

8.8 **Supporting Deliverables and Documents.** As indicated below, many of the Supporting Deliverables and Documents required under the CD and this SOW previously have been approved by EPA. To the extent not already submitted to and approved by EPA, AR shall submit each of the following supporting deliverables or their updates as required under this SOW (and the SMP) for EPA approval, except as specifically provided. AR shall develop the deliverables and/or their updates in accordance with all applicable regulations, guidance, and policies (*see* Section 10 (References)). AR shall update each of these supporting deliverables as necessary or appropriate during the course of the Work and/or as requested by EPA.

(a) **Site Management Plan (SMP).** The SMP (August 2022, Site Register No. 100-13-951, SEMS No. 100012074), attached to this SOW, was approved by EPA on September 5, 2022. The SMP outlines and describes the processes that will be administered to fully implement Site-wide remedial requirements. The SMP will be updated through annual SMP reports reflecting the status of remedial activities at the Site, which will be prepared by AR and submitted by the first week of April each year. Among other things, the SMP Annual Reports will include a Wetlands ARAR Compliance Report (describing compliance with the no-net-loss of wetlands requirement, using the UCFRB "Four Step" methodology previously approved by EPA) and a Historic Preservation Compliance Report (describing compliance with the National Historic Preservation Act ARAR).

(b) **Health and Safety Plan(s).** AR and its contractors develop site specific HASPs, which describe all activities to be performed to protect on-Site personnel and area residents from physical, chemical, and all other hazards posed by the Work. Those HASPs are developed in accordance with EPA's Emergency Responder Health and Safety and Occupational Safety and Health Administration (OSHA) requirements under 29 C.F.R. §§ 1910 and 1926. The HASPs cover RA activities and are updated, as appropriate, to cover activities after RA completion. EPA does not approve the HASPs or their updates, but will review them to ensure that all necessary elements are included and that the plans provide for the protection of human health and the environment. The HASPs include Emergency Response Plans (ERPs) that describe procedures to be used in the event of an accident or emergency at the Site (for example, power outages, water impoundment failure, treatment plant failure, slope failure, etc.). The ERPs must include:

(1) Name of the person or entity responsible for responding in the event of an emergency incident;

(2) Plan and date(s) for meeting(s) with the local community, including local, State, and federal agencies involved in the cleanup, as well as local emergency squads and hospitals;

(3) Spill Prevention, Control, and Countermeasures (SPCC) Plan (if applicable), consistent with the regulations under 40

C.F.R. Part 112, describing measures to prevent, and contingency plans for, spills and discharges;

(4) Notification activities in accordance with Subsection 5.1(b)(2) (Release Reporting) in the event of a release of hazardous substances requiring reporting under Section 103 of CERCLA, 42 U.S.C. § 9603, or Section 304 of the EPCRA, 42 U.S.C. § 11004; and

(5) A description of all necessary actions to ensure compliance with Paragraph 11 (Emergencies and Releases) of the CD in the event of an occurrence during the performance of the Work that causes or threatens a release of Waste Material from the Site that constitutes an emergency or may present an immediate threat to public health or welfare or the environment.

(c) **Site-Wide Construction Quality Assurance/Construction Quality Control (CQA/CQC) Plans**. The purpose of the Construction Quality Assurance (CQA) Plan, which is attached to the SMP, is to describe planned and systemic activities that provide confidence that the RA construction will satisfy all plans, specifications, and related requirements, including quality objectives. The purpose of the Construction Quality Control (CQC) Plan is to describe the activities to verify that RA construction has satisfied all plans, specifications, and related requirements, including quality objectives. The CQA/CQC Plans prepared for each of the Work elements described in the SMP must:

(1) Identify, and describe the responsibilities of, the organizations and personnel implementing the CQA/CQC Plans;

(2) Describe the Performance Standards required to be met to achieve RA Completion;

(3) Describe the activities to be performed:

i. To provide confidence that Performance Standards will be met; and

ii. To determine whether Performance Standards have been met;

(4) Describe verification activities, such as inspections, sampling, testing, monitoring, and production controls, under the CQA/CQC Plans;

(5) Describe industry standards and technical specifications used in implementing the CQA/CQC Plans;

(6) Describe procedures for tracking construction deficiencies from identification through corrective action;

(7) Describe procedures for documenting all CQA/CQC activities; and

(8) Describe procedures for retention of documents and for final storage of documents.

(d) **Quality Management Plan.** A Quality Management Plan (QMP) was previously approved. The QMP describes the quality system in terms of organizational structure, functional responsibilities of management and staff, lines of authority, and required interfaces for those planning, implementing, and assessing all activities conducted by AR. The quality system provides the framework for planning, implementing, documenting, and assessing work performed by AR and for carrying out required QA and QC activities. The QMP will be updated and revised on an annual basis and submitted to EPA for review and approval, in consultation with DEQ.

(e) **Data Management Plan.** A DMP was approved as part of the SMP. The data management plan identifies and documents the requirements and responsibilities for managing and using data and information generated from O&M or OMM activities (e.g., environmental data, submittal tracking). The DMP will be updated and revised on an annual basis and submitted to EPA for review and approval by EPA, in consultation with DEQ.

(f) **O&M Plan(s) and I&M Plan(s)**. EPA-approved O&M/I&M plans are identified in Sections 8.0 and 9.0 of the SMP. The plans describe the requirements for inspecting, operating, and maintaining the RA. AR developed the O&M/I&M plans in accordance with *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017). The plans also include the following additional requirements:

(1) Description of Performance Standards required to be met to satisfy the RODs;

(2) Description of activities to be performed:

i. to provide confidence that Performance Standards will be met; and

ii. to determine whether Performance Standards have been met.

(3) **O&M Reporting**. Description of records and reports that will be generated during O&M, such as daily operating logs, laboratory records, records of operating costs, reports regarding emergencies, personnel and maintenance records, monitoring reports, and monthly and annual reports to EPA and State agencies;

(4) Description of corrective action in case of systems failure, including:

i. Alternative procedures to prevent the release or threatened release of Waste Material that may endanger public health and the environment or may cause a failure to achieve Performance Standards;

ii. Analysis of vulnerability and additional resource requirements should a failure occur;

iii. Notification and reporting requirements should O&M systems fail or be in danger of imminent failure;

iv. Community notification requirements;

(5) Description of corrective action to be implemented in the event that Performance Standards are not achieved, and a schedule for implementing such corrective actions.

(h) **Institutional Controls Implementation and Assurance Plan**. The ICIAP was approved by EPA on June 12, 2020. The ICIAP describes plans to implement, maintain, and enforce the ICs at the Site. The ICIAP is described in additional detail in Subsection 3.4(a) of this SOW.

8.9 **Modification of Deliverables.** All deliverables identified and/or required to be submitted under this SOW may be reviewed from time to time to evaluate appropriateness and efficacy at measuring compliance with remedial goals and/or any other CD or SOW requirements, among other reasons. Any revisions to a deliverable must be adopted in accordance with Paragraph XXIV of the CD (Modification).

9. State Participation.

9.1 Copies. AR shall, at any time it sends a deliverable to EPA, send a copy of such deliverable to DEQ. EPA shall, at any time it sends a notice, authorization, approval, disapproval, or certification to AR, send a copy of such document to DEQ.

9.2 Review and Comment. DEQ will have a reasonable opportunity for review and comment prior to:

(a) Any EPA approval or disapproval under Subsection 8.7 (Approval of Deliverables) of any deliverables that are required to be submitted for EPA approval; and

(b) Any approval or disapproval under Subsection 5.1(d) (RA Construction Completion), any disapproval of or Certification of RA Completion under Subsection 5.1(e) (Certification of RA Completion), and any disapproval of or Certification of Work Completion under Subsection 5.1(j) (Certification of Work Completion).

10. References.

10.1 The following regulations and guidance documents, among others, apply to the Work. Any item for which a specific URL is not provided below is available on one of the two EPA Web pages listed in Section 10.2:

(a) A Compendium of Superfund Field Operations Methods, OSWER 9355.0 14, EPA/540/P-87/001a (Aug. 1987).

(b) CERCLA Compliance with Other Laws Manual, Part I: Interim Final, OSWER 9234.1-01, EPA/540/G-89/006 (Aug. 1988).

(c) CERCLA Compliance with Other Laws Manual, Part II, OSWER 9234.1-02, EPA/540/G-89/009 (Aug. 1989).

(d) Guidance for Conducting Remedial Investigations and Feasibility Studies, OSWER 9355.3-01, EPA/540/G-89/004 (Oct. 1988).

(e) Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, OSWER 9355.5-01, EPA/540/G-90/001 (Apr.1990).

(f) Guidance on Expediting Remedial Design and Remedial Actions, OSWER 9355.5-02, EPA/540/G-90/006 (Aug. 1990).

(g) Guide to Management of Investigation-Derived Wastes, OSWER 9345.3 03FS (Jan. 1992).

(h) Permits and Permit Equivalency Processes for CERCLA On-Site Response Actions, OSWER 9355.7 03 (Feb. 1992).

(i) Guidance for Conducting Treatability Studies under CERCLA, OSWER 9380.3-10, EPA/540/R 92/071A (Nov. 1992).

(j) National Oil and Hazardous Substances Pollution Contingency Plan; Final Rule, 40 C.F.R. Part 300 (Oct. 1994).

(k) Guidance for Scoping the Remedial Design, OSWER 9355.0-43, EPA/540/R-95/025 (Mar. 1995).

(l) Remedial Design/Remedial Action Handbook, OSWER 9355.0-04B, EPA/540/R-95/059 (June 1995).

(m) EPA Guidance for Data Quality Assessment, Practical Methods for Data Analysis, QA/G-9, EPA/600/R-96/084 (July 2000).

(n) Comprehensive Five-year Review Guidance, OSWER 9355.7-03B-P, 540 R 01-007 (June 2001).

(o) Guidance for Quality Assurance Project Plans, QA/G-5, EPA/240/R 02/009 (Dec. 2002).

(p) Institutional Controls: Third Party Beneficiary Rights in Proprietary Controls (Apr. 2004).

(q) Quality management systems for environmental information and technology programs -- Requirements with guidance for use, ASQ/ANSI E4:2014 (American Society for Quality, February 2014).

(r) Uniform Federal Policy for Quality Assurance Project Plans, Parts 1-3, EPA/505/B-04/900A though 900C (Mar. 2005).

(s) Superfund Community Involvement Handbook, SEMS 100000070 (January 2016), https://www.epa.gov/superfund/community-involvement-tools-and-resources.

(t) EPA Guidance on Systematic Planning Using the Data Quality Objectives Process, QA/G-4, EPA/240/B-06/001 (Feb. 2006).

(u) EPA Requirements for Quality Assurance Project Plans, QA/R-5, EPA/240/B 01/003 (Mar. 2001, reissued May 2006).

(v) EPA Requirements for Quality Management Plans, QA/R-2, EPA/240/B 01/002 (Mar. 2001, reissued May 2006).

(w) USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis, ILM05.4 (Dec. 2006).

(x) USEPA Contract Laboratory Program Statement of Work for Organic Analysis, SOM01.2 (amended Apr. 2007).

(y) EPA National Geospatial Data Policy, CIO Policy Transmittal 05-002 (Aug. 2008), https://www.epa.gov/geospatial/geospatial-policies-and-standards and https://www.epa.gov/geospatial/epa-national-geospatial-data-policy.

(z) Summary of Key Existing EPA CERCLA Policies for Groundwater Restoration, OSWER 9283.1-33 (June 2009).

(aa) Principles for Greener Cleanups (Aug. 2009), https://www.epa.gov/greenercleanups/epa-principles-greener-cleanups.

(bb) [If Technical Assistance Plan provided for in SOW: Providing Communities with Opportunities for Independent Technical Assistance in Superfund Settlements, Interim (Sep. 2009).]

(cc) USEPA Contract Laboratory Program Statement of Work for Inorganic Superfund Methods (Multi-Media, Multi-Concentration), ISM01.2 (Jan. 2010).

(dd) Close Out Procedures for National Priorities List Sites, OSWER 9320.2-22 (May 2011).

(ee) Groundwater Road Map: Recommended Process for Restoring Contaminated Groundwater at Superfund Sites, OSWER 9283.1-34 (July 2011).

(ff) Recommended Evaluation of Institutional Controls: Supplement to the "Comprehensive Five-Year Review Guidance," OSWER 9355.7-18 (Sep. 2011).

(gg) Construction Specifications Institute's Master Format [specify current edition], available from https://www.csiresources.org/home.

(hh) Updated Superfund Response and Settlement Approach for Sites Using the Superfund Alternative Approach, OSWER 9200.2 125 (Sep. 2012).

(ii) Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites, OSWER 9355.0-89, EPA/540/R-09/001 (Dec. 2012).

(jj) Institutional Controls: A Guide to Preparing Institutional Controls Implementation and Assurance Plans at Contaminated Sites, OSWER 9200.0-77, EPA/540/R-09/02 (Dec. 2012).

(kk) EPA's Emergency Responder Health and Safety Manual, OSWER 9285.3-12 (July 2005 and updates), https://www.epaosc.org/_HealthSafetyManual/manual-index.htm.

(ll) Broader Application of Remedial Design and Remedial Action Pilot Project Lessons Learned, OSWER 9200.2-129 (Feb. 2013).

(mm) Guidance for Evaluating Completion of Groundwater Restoration Remedial Actions, OSWER 9355.0-129 (Nov. 2013).

(nn) Groundwater Remedy Completion Strategy: Moving Forward with the End in Mind, OSWER 9200.2-144 (May 2014).

(oo) Guidance for Management of Superfund Remedies in Post Construction, OLEM 9200.3-105 (Feb. 2017), https://www.epa.gov/superfund/superfund-post-construction-completion.

10.2 A more complete list may be found on the following EPA Web pages:

Laws, Policy, and Guidance: https://www.epa.gov/superfund/superfund-policy-guidance-and-laws.

10.3 Test Methods Collections: https://www.epa.gov/measurements/collection-methods. For any regulation or guidance referenced in the CD or SOW, the reference will be read to include any subsequent modification, amendment, or replacement of such regulation or guidance. Such modifications, amendments, or replacements apply to the Work only after AR receive notification from EPA of the modification, amendment, or replacement.

11. Attachment.

Site Management Plan, (August 2022, Site Register No. 100-13-951, SEMS No. 100012074).

ATTACHMENT

Anaconda Smelter NPL Site

Site Management Plan

Atlantic Richfield Company
August 2022

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LIST OF ACRONYMS AND ABBREVIATIONS

ADLC	Anaconda-Deer Lodge County
ADR	Anaconda Development Repository
AOC	Area of Concern
Agencies	EPA and DEQ
AR	Atlantic Richfield
ARAR	Applicable or Relevant and Appropriate Requirement(s)
ARWW&S	Anaconda Regional Water, Waste and Soils
BA&P	Butte, Anaconda & Pacific
BLM	Bureau of Land Management
BMP	Best Management Practice(s)
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CCR	Construction Completion Report
CD	Consent Decree
COC	Contaminant of Concern
CPMP	Community Protective Measures Program
CQAP	Construction Quality Assurance Plan
CS	Community Soils
CSKT	Confederated Salish and Kootenai Tribes
CSWECP	Construction Storm Water Erosion Control Plan
CWA	Clean Water Act
DD	Dedicated Development
DEQ	Montana Department of Environmental Quality
DMP	Data Management Plan
DNRC	Montana Department of Natural Resources and Conservation
DPS	Development Permit System
DSR	Data Summary Report(s)
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESD	Explanation of Significant Differences
FDR	Final Design Report(s)
FEWA	Functionally Effective Wetland Area(s)
FIP	Field Implementation Plan(s)
FWP	Fish, Wildlife and Parks
FYR	Five-Year Review
GIS	Geographic Information System
GWMP	Groundwater Management Plan
HAA	High Arsenic Area
HDPE	High Density Polyethylene
IC	Institutional Control(s)
I&M	Inspection and Maintenance
ICIAP	Institutional Controls Implementation and Assurance Plan
ISWP	Individual Site Work Plan(s)
LRES	Land Reclamation Evaluation System

LTIM	Long-term Inspection and Maintenance
mg/kg	milligrams per kilogram
MGS	Main Granulated Slag
M&M	Monitoring and Maintenance
M-WV	Monitor/Well-Vegetated
NOI	Notice of Intent
NPL	National Priorities List
O&F	Operational and Functional
OM	Organic Matter
O&M	Operation and Maintenance
OM&M	Operation, Monitoring and Maintenance
OU	Operable Unit
OW/EADA	Old Works/East Anaconda Development Area
OWGC	Old Works Golf Course
POC	Point of Compliance
PRLU	Preliminary Remedial Land Unit
PRP	Potentially Responsible Party
PVC	Polyvinyl Chloride
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
QMP	Quality Management Plan
QMS	Quality Management System
RA	Remedial Action(s)
RAWP	Remedial Action Work Plan(s)
RAWP/FDR	Remedial Action Work Plan/Final Design Report
RCFSA	Remedy Coordination Funding and Settlement Agreement
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design(s)
RDM	RDM Multi-Enterprises
RDU	Remedial Design Unit(s)
RDWP	Remedial Design Work Plan(s)
RFC	Request for Change
RFM	Request for Maintenance
RPC	Remedial Project Coordinator
RO	Reverse Osmosis
ROD	Record of Decision(s)
SBL	Sugar Beet Lime
SHRC	Smelter Hill Repository Complex
SMP	Site Management Plan
SOW	Statement of Work
SWMP	Surface Water Management Plan
SWRCP	Storm Water Runoff Control Plan
TI	Technical Impracticability
TMI	Total Metal Index
T6	*In-situ* Treatment to 6 inches
T12	*In-situ* Treatment to 12 inches
T18	*In-situ* Treatment to 18 inches

UCFRB	Upper Clark Fork River Basin
µg/L	micrograms per liter
USFS	United States Forest Service
USFWS	United States Fish & Wildlife Service
USGS	United States Geologic Service
VMP	Vegetation Management Plan
VSP	Visual Sample Plan
WMA	Waste Management Area(s)
WSS	West Stack Slag

1.0 INTRODUCTION

This Site Management Plan (SMP) provides the framework for and outlines the remedial components and process that will be administered to fully implement the remedial requirements under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) for the Anaconda Smelter National Priorities List (NPL) Site (Anaconda Site or Site). The requirement to develop, implement, and maintain the SMP initially was set forth in the Thirteenth Amendment to the Administrative Order on Consent, Docket No. CERCLA-VIII-88-16 (June 30, 2000), and is required under section 8.8 of the Statement of Work (SOW) for the Sitewide Consent Decree (Consent Decree or CD) for the Site.

The Site was initially organized into sixteen (16) operable units (OUs) in the mid-1980s. As work progressed at the Site, several OUs were consolidated, eliminated, or deleted. Presently, there are five OUs at the Site with Records of Decision, including:

- Old Works/East Anaconda Development Area (OW/EADA) OU7;
- Community Soils (CS) – OU16;
- Anaconda Regional Water, Waste & Soils (ARWW&S) – OU4[1];
- Mill Creek OU15; and
- Flue Dust OU11.

The U.S. Environmental Protection Agency (EPA) has issued Records of Decision (RODs) for each of these five OUs. A more-detailed discussion of these five OUs is presented in Section 2 of this SMP. The OW/EADA, CS, and ARWW&S OUs are referred to as the "Active OUs," as outstanding RA at the Site is confined to these OUs.

The SMP is intended to be the overarching support document to the SOW for the Consent Decree that provides context and decision rationale for completed and future remedial design (RD) / remedial action (RA) activities across the Site and schedules associated with such Site RD/RA activities. The SMP shall be updated through an Annual SMP Report reflecting the status of remedial activities at the Site. An outline for the Annual SMP Report is provided in Appendix A to this SMP.

The terms used in this SMP that are defined in CERCLA, in regulations promulgated under CERCLA, in the CD, or in the SOW have the meanings assigned to them in CERCLA, in such regulations, in the CD, or in the SOW, except that the term "Section" and "Subsection" used in this document means a section or subsection of this SMP, unless otherwise stated and/or defined herein.

In the event of conflict between this SMP and the Consent Decree and/or the SOW, the Consent Decree and/or the SOW shall control.

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[1] The ARWW&S OU now incorporates the Arbiter OU – OU9, the Flue Dust OU – OU11, and the Beryllium OU – OU12, which, as discussed in Sections 2.1 and 5.2 below, have since been deleted from the NPL.

1.1 Site Management Plan Overview

The SMP summarizes all response action activities, associated work plans, and project coordination for the Site. *See* Figure 1.1. The SMP describes from start to finish the project management; data management; remedial requirements; completed and outstanding RAs; post remediation short-term and long-term management / Operation and Maintenance (O&M) requirements; institutional controls (ICs); RA completion and Close Out and NPL deletion / delisting process; and remedy review and support activities for the entire Site. The SMP briefly describes the RA implementation processes and identifies the key RA and post-RA deliverables. The SMP provides a mechanism for tracking remedial progress across the Site from pre-RA implementation through NPL deletion / delisting and remedy review. Descriptions of the *Anaconda Smelter NPL Site Institutional Controls Implementation and Assurance Plan* (ICIAP) (Site Document Register No. 100-10-766, SEMS No. 1969881) and various media- or area-specific O&M plans and/or management plans also are included.

The SMP presents a projected schedule for outstanding RA activities. The schedule is meant to serve as a tool for planning to ensure that pre-RA activities are completed with sufficient notice in advance of implementing required work. A more-detailed discussion of the prioritization approach and project schedules is provided in Section 6 of this SMP.

Performance monitoring will occur after implementation of each RA until Performance Standards have been met, as described in the applicable management plans summarized in this SMP. Long-term O&M will occur for waste management areas (WMAs) and high arsenic areas (HAAs) upon completion of RA.

The specific structure of this SMP is as follows:

- Section 1 includes an introduction to and identifies the purpose and objectives of the SMP;
- Section 2 provides historical context for the Site, including brief descriptions of the respective OUs, and provides a regulatory and remediation history for the Site;
- Section 3 discusses the project management structure and coordination amongst the project parties, including identification of stakeholders and their roles and responsibilities; regulatory obligations; reporting and recordkeeping requirements; mechanisms for tracking remedial activities across the Site; and community involvement;
- Section 4 summarizes the data management objectives, procedures, processes, and all other data management-related activities to ensure quality usable data;
- Section 5 presents a summary of the RD and completed RAs at the Site, followed by more detailed discussions of outstanding RAs for the Active OUs;
- Section 6 provides the schedule for Site activities;
- Section 7 summarizes construction activities, including the elements that must be completed in advance of remedial construction (e.g., access, confirming remedies and

associated boundaries, environmental mitigation, cultural and historic resources); activities that are ongoing as part of the remedial construction (i.e., health and safety, environmental controls, quality assurance/quality control (QA/QC), design changes); and activities that are necessary in anticipation of construction completion (e.g., punch-list, construction completion reporting);

- Section 8 summarizes the process for performance monitoring, compliance monitoring, and associated reporting for various media at the Site;
- Section 9 summarizes long-term operation, inspection monitoring, maintenance, and reporting requirements for various media at the Site;
- Section 10 summarizes the ICs components of the Site remedy;
- Section 11 summarizes RA Completion and Close Out and Deletion / Delisting;
- Section 12 discusses the process for remedy review; and
- Section 13 provides a list of references.

1.2 SMP Objective

The primary objective of the SMP is to summarize the scope of work, schedule, and organizational responsibilities for completing the remaining RAs at the Site. The SMP presents this information in a summary form and references other plans—including, but not limited to, the relevant Remedial Action Work Plans (RAWPs), management plans, and O&M Plans—for additional detail.

Figure 1.1

Anaconda Smelter NPL Site: Site-Wide Consent Decree Plans/Attachment Structure, August 2021

Operable Unit (OU) Decision Documents and Consent Decrees (CDs)

- **Mill Creek OU 15 Record of Decision (ROD) (1987)** → CD
- **CSOU 16 ROD (1996) / ROD Amendment (2013) / Explanations of Significant Differences (ESDs) (2017, 2020)**
- **ARWW&S) OU 4 ROD (1998) / ROD Amendments (2011, 2020)**
- **OW/EADA OU 7 ROD (1994) / ESDs (1995, 2020)**
- **Silver Bow Creek / Butte Area NPL Site (Multiple Dec. Docs.)** → **Streamside Tailings OU CD*** (*Addresses Dutchman High Arsenic Area)
- **Flue Dust OU 11 ROD (1991)** → CD
- **Arbiter OU 9 Beryllium OU 12 ROD**
- **Milltown Reservoir Sediments / Clark Fork River NPL Site RODs (2004)** → **Clark Fork River OU CD*** (*Addresses State cleanup of State-owned land (RDUs 1 and 15))

Remedial Action Work Plans (RAWPs)

- ARWW&S OU Remedial Design Units 1-15, West Galen RAWPs
- OW/EADA OU RAWP
- Community Soils OU RAWPs
- Individual Site Work Plans
- Surface Water Technical Impracticability Supplemental Work Plans

Performance Standard Management Plans

- Vegetation Management Plan
- Surface Water Management Plan
- Ground Water Management Plan (domestic well/long-term ground water quality assurance project plans)
- Riparian Monitoring Plan

Operation and Maintenance (O&M) Plans

- Engineered Controls Inspection and Maintenance Plan
- Opportunity Ponds Ground Water / Surface Water Management System O&M Plan
- Old Works Golf Course O&M Plan
- Active Railroad O&M Plan
- Repository O&M Plans
  - Smelter Hill
  - Development
- Vegetation Management Plan
- Dutchman High Arsenic Area Property Management Plan
- Slag Management Plans
- Cultural and Historic Mitigation and Preservation Plan
- Access Control Plan

Institutional Controls

- Institutional Controls Implementation and Assurance Plan
  - Development Permit System
  - Community Protective Measures Program
  - Covenants
  - Attic Dust Program

Site Management Plan

Section 1 Introduction
Section 2 Background
Section 3 Project Management /
Section 4 Data Management
Section 5 Remedial Design/Remedial Action Status
Section 6 Schedule Management and Tracking
Section 7 Remedial Action Implementation
Section 8 Site Monitoring and Compliance
Section 9 Long-Term Inspection, Operation and Maintenance
Section 10 Institutional Controls
Section 11 Remedial Action Completion
Section 12 Remedy Review and Support Activities

1.3 Site Document Register

Given the number of Site RD/RA documents associated with the SOW (e.g., FDRs, RAWPs, Management Plans, Inspection & Maintenance, and O&M Plans), as illustrated in Figure 1.1, as well as other relevant Site documents (e.g., DSRs, annual reports, etc.), an efficient way to organize and manage Site documents became necessary. In addition, these documents need to be accessible by multiple parties. In order to accommodate this, an online web-based document library was developed for the Site—referred to as the Site Document Register—to store and manage digital copies of the Site documents. Digital copies of Site documents created by AR, EPA, the Montana Department of Environmental Quality (DEQ), contractors, and other entities are stored in the Site Document Register. Copies of documents contained in the Site Document Register also can be found in EPA's document repository, the Superfund Enterprise Management System (SEMS).

The Site Document Register is a Microsoft SharePoint based document library that can be accessed through an internet web browser. Each Site document has been listed in the register and an electronic copy of the associated document in .PDF format uploaded to this register. Once uploaded, each document is assigned a unique identifier that consists of a location identifier (i.e., the RDU or area the documents pertains to), a document type identifier (i.e., Administrative Order, Remedial Action Work Plan, etc.), and a system assigned sequential document list number (i.e., order in which the document appears in the Register). This unique identifier is used throughout the SOW and this SMP, among other places, to identify each document and its location within the Site Document Register. For example, the *Remedial Design Unit (RDU) 1 – Stucky Ridge Final Design Report* is referenced to the Site Document Register in this SMP as (Site Document Register No. 601-05-21). In addition, the submittal date, approval letters, approval date, document status, and comments associated with the Site document are tracked within the Site Document Register. The register will continue to be updated as documents are completed and approved. The Site Document Register can be found at: https://cddeliverables.sharepoint.com/sites/ConsentDecree/.

2.0 ANACONDA SMELTER NPL SITE

The Anaconda Site is one of several Superfund sites in the Upper Clark Fork River Basin (UCFRB). The Site covers approximately 300 square miles of agricultural, pasture, residential, rangeland, forests, and riparian and wetland areas in the southern Deer Lodge Valley and surrounding foothills in and around the City of Anaconda. The Anaconda Company (TAC) and its predecessors owned and operated milling and smelting operations at the Site for nearly a century.

By the time the smelter ceased operations in July of 1980, milling and smelting wastes had been disposed over approximately 6,000 acres of the Site. As identified in the 2011 ARWW&S OU ROD Amendment, approximately 30,000 acres of upland terrestrial soils were contaminated by aerial deposition of smelter emissions; 13,000 acres of alluvial groundwater contained elevated concentrations of arsenic, cadmium, and copper; and 67,800 acres of bedrock groundwater exceeded the State of Montana arsenic standard for drinking water (10 micrograms per liter [µg/L]).

As noted in Section 1.0, the Site initially was organized into 16 OUs in the mid-1980s. As work progressed at the Site, several OUs were consolidated, eliminated, or deleted, resulting in five existing OUs at the Site that have RODs: OW/EADA OU, CS OU, ARWW&S OU, Mill Creek OU, and Flue Dust OU. The OW/EADA, CS, and ARWW&S OUs are the Active OUs at the Site. Brief summaries of each of the five OUs and the remedial decision documents related to each are set forth in the subsections below.

2.1 Early Actions

EPA placed the Site on the NPL on September 8, 1983. Following the listing, a series of investigations of Site contamination were initiated and various removal actions were conducted at the Site. These early actions addressed human health risk and potential releases of principal threat wastes. Early remedial and removal actions conducted at the Site included the following:

- The Mill Creek OU was formed to address elevated levels of arsenic found in soils in the community of Mill Creek, located approximately two miles east of Anaconda downwind from the smelter stack. EPA issued a ROD for the Mill Creek OU in 1987 (Site Document Register No. 200-01-625, SEMS No. 1164463). The selected remedy for the Mill Creek OU included permanent relocation of all Mill Creek area residents and the demolition of all structures within the OU. AR implemented the remedy for the Mill Creek OU pursuant to a consent decree entered in September of 1988 (Site Document Register No. 200-03-199, SEMS No. 1395879). EPA certified the Mill Creek OU remedial action as complete on July 15, 2022.

  AR purchased all property lots from the former Mill Creek residents, and ultimately consolidated and conveyed those properties to Anaconda–Deer Lodge County (ADLC) under the 1994 Conveyance Agreement. The resulting land unit is referred to as the 291-acre "Mill Creek Parcel" (and is tracked under this name for remedial action completion and deletion purposes). As part of the OW/EADA OU RA, the former Mill Creek townsite received a soil cover to stabilize the area. Remediation of the remaining portions of the Mill Creek parcel is

being completed as part of the ongoing RA for RDU 6 of the ARWW&S OU (South Opportunity Uplands).

- The Flue Dust OU was formed to address the remediation of flue dust waste generated by the smelter. EPA issued a ROD for the Flue Dust OU in 1991 (Site Document Register No. 300-01-486, SEMS No. 1143334). EPA's selected remedy for the Flue Dust OU required removal and treatment of all flue dust material located on Smelter Hill (approximately 500,000 tons) and placement of the treated material in an on-site engineered repository. Thus, this OU includes a Resource Conservation and Recovery Act (RCRA) Subtitle C repository where flue dust wastes were consolidated within the Smelter Hill Facility RDU 14 boundary. AR implemented the remedy for the Flue Dust OU pursuant to a consent decree entered in December of 1992 (Site Document Register No. 300-03-203). EPA certified the Flue Dust OU response action as complete in October 2020 (Site Document Register No. 300-15-915). EPA issued a Notice of Intent to Delete the Flue Dust OU, the Beryllium OU, and the Arbiter OU from the NPL on August 10, 2020, 85 Fed. Reg. 48132, which partial deletions of all three OUs became final on September 30, 2020.

- Pursuant to Administrative Order on Consent for Removal Action, Docket No. CERCLA-VIII-92-12 (Site Document Register No. 614-02-202), AR excavated and removed wastes from the Arbiter OU ponds and bunkers and the Beryllium OU located in the Opportunity B-2 tailings pond and the Weather Hill beryllium bunker. AR placed those wastes in two RCRA Subtitle C repositories located within the Smelter Hill RDU 14 boundary. The removal actions were commenced and completed in 1992. EPA certified the Arbiter OU and Beryllium OU response actions as complete in August 2020 (Site Document Register No. 612-15-916). EPA issued a notice of Intent to Delete the Arbiter and Beryllium OUs from the NPL in August 2020, and the partial deletions became final on September 30, 2020. All remaining O&M work associated with the Arbiter and Beryllium OUs has been transferred to the ARWW&S OU, which includes long-term operation, monitoring, and maintenance of the repositories.

  The Flue Dust, Arbiter, and Beryllium repositories, together with additional later repositories constructed in the same area (Aspen Hills and New (2004) Beryllium repositories), are collectively known as the Smelter Hill Repository Complex (SHRC). Final operations, monitoring, and maintenance of the SHRC, as well as ICs, was deferred to the ARWW&S OU for long-term maintenance. Upon finalization and approval of the *Smelter Hill Repository Complex (SHRC) Long-Term Operation, Monitoring, and Maintenance (OM&M) Plan* (Site Document Register No. 614-29-776) and the *Anaconda Smelter NPL Site ICIAP* (Site Document Register No. 100-10-766), EPA issued a Notice of Intent (NOI) to Delete the Beryllium OU (OU9), the Flue Dust OU (OU11), and the Arbiter OU (OU12) from the NPL on August 10, 2020, 85 Fed. Reg. 48132, which partial deletion became final on September 30, 2020.

- Pursuant to Administrative Order on Consent for Time Critical Removal Action, Docket No. CERCLA-VIII-91-26 (Site Document Register No. 500-20-200), AR excavated and removed soil in the Teresa Ann Terrace, Elkhorn Apartments, and Cedar Park Homes neighborhoods where arsenic concentrations exceeded 250 mg/kg. Removal of arsenic contaminated soils to a depth of 18 inches and replacement of topsoil and grass began in 1991 and was completed in 1992.
- Pursuant to Administrative Order on Consent for Removal Action, Docket No. CERCLA-VIII-92-11 (Site Document Register No. 400-02-201), AR regraded the Red Sands waste pile, armored the bank of Warm Springs Creek adjacent to the Red Sands waste pile, repaired breaks in the levee along Warms Springs Creek, constructed certain runoff detention structures, replaced the City Dump Road Bridge, and restricted access to designated areas. These removal actions were commenced and completed in 1992.

2.2 Ongoing Actions

The early actions described above were conducted to address immediate human health risks and uncontrolled principal threat from wastes present at the Site. While these immediate issues were being addressed, additional studies and subsequent work were being conducted at multiple OUs, which were later consolidated into the three Active OUs described below, in order of issuance of their respective RODs.

Section 5 of this SMP provides a summary of the current RD/RA status for each OU. Table 2.1 references the appropriate subsection of Section 5 for each OU, including each RDU, Expansion Area, and Subarea, as well as identifying the post-RA management and O&M plans applicable to each OU, RDU, Expansion Area, and Subarea.

Table 2.1: Site Summary

	RD/RA	Soils/ Vegetation	Waste					Surface Water			Ground Water		Property Management	
	SMP Section 5 Reference	Vegetation Management Plan	Railroad OM Plan	SH Repository Complex Post-Closure O&M Plan	Anaconda Smelter Development Repository OM Plan	OWGC O&M Plan	Slag Management Plans	Riparian Area Monitoring Plan	Engineered Controls I&M Plan	Surface Water Management Plan	Ground Water/Surface Water Mgmt. Plan	Ground Water Management Plan	Dutchman Property Mgmt. Plan	Institutional Controls Implémentation & Assurance Plan
Mill Creek OU	5.1	X										X		
Flue Dust OU	5.2											X		
OW/EADA OU	5.3					X			X	X		X		X
CSOU	5.4				X									X
ARWWS OU														
RDU 1 - Stucky Ridge	5.5.1	X							X	X		X		X
RDU 2 – Lost Creek	5.5.2	X							X	X		X		X
RDU 3 – Smelter Hill	5.5.3	X							X	X		X		X
RDU 4 – Anaconda Ponds	5.5.4	X										X		X
RDU 5 – Active Railroad	5.5.5	X	X							X		X		X
RDU 6 – South Opportunity	5.5.6	X								X		X		X
RDU 7 – North Opportunity	5.5.7	X								X		X		X
RDU 8 – Opportunity Ponds	5.5.8	X			X				X		X	X		X
RDU 9 – Fluvial Tailings	5.5.9	X						X				X		X
RDU 10 – Warm Springs Creek	5.5.10							X		X		X		X
RDU 11 – Cashman	5.5.11													X
RDU 12 – Slag	5.5.12						X					X		X
RDU 13 – OW Ground Water	5.5.13											X		X
RDU 14 – Smelter Hill Facilities	5.5.14	X		X					X			X		X
RDU 15 – Mt. Haggin	5.5.15	X								X				X
West Galen Expansion Area	5.5.16	X										X		X
Dutchman Creek Expansion Area	5.5.17											X	X	X

2.2.1 OW/EADA OU

The OW/EADA OU was formed in 1992 pursuant to the Sixth Amendment to Administrative Order on Consent, Docket No. CERCLA-VIII-88-16 (Site Document Register No. 100-02-190), to address historical milling and smelting wastes, emissions, and other debris generated from the Old Works Smelter facilities. EPA issued the ROD for the OW/EADA OU in 1994 (Site Document Register No. 400-01-293). The selected remedy under the OW/EADA OU ROD required the reduction of arsenic concentrations at the surface within the OW/EADA OU through a combination of revegetation techniques and/or engineered covers: (i) in current commercial/industrial areas to concentrations $\leq$500 mg/kg, and (ii) in current and potential recreational use areas and potential commercial/industrial areas to concentrations $\leq$1000 mg/kg. The OW/EADA OU ROD also required the implementation of certain surface and stream channel controls and certain ICs. Groundwater and surface water quality concerns at the OW/EADA OU were deferred to the ARWW&S OU.

The OW/EADA OU was originally divided into the following six subareas:

- Subarea 1 – Old Works Structural Areas;
- Subarea 2 – Heap Roast Slag, Miscellaneous Waste Piles, and a portion of the Warm Spring Creek Floodplain;
- Subarea 3 – Extension of the Warm Spring Creek Floodplain and the Industrial Park;
- Subarea 4 – Red Sands, Arbiter Plant, and the Anaconda Industrial Park;
- Subarea 5 – East Anaconda Yards and Benny Goodman Park; and
- Subarea 6 – Drag Strip.

Pursuant to an Explanation of Significant Differences (ESD) issued by EPA in 1995 (Site Document Register No. 400-31-870), the Mill Creek Addition and the Aspen Hills Addition (both included in Subarea 5) were added to the OW/EADA OU. More detailed descriptions of the subareas composing the OW/EADA OU, and the RAWPs and subsequent Individual Site Work Plans (ISWPs) developed for each subarea, are included in Section 5.3. The subareas also are shown on Figure 2.1. Pursuant to an ESD issued in 2020 (Site Document Register No. 400-31-767), EPA provided for the implementation of certain ICs contingencies if ADLC fails to perform some or all of the primary ICs required for the OWEADA OU in the future.

AR has implemented all RD/RA work required for the OW/EADA OU pursuant to Administrative Order for Remedial Design/Remedial Action, Docket No. CERCLA-VIII-94-08 (Site Document Register No. 400-20-204), except for four parcels owned by three recalcitrant landowners where access for RA work has not been granted. Summaries of the RD/RA work completed and the RA work remaining in the OW/EADA OU subareas also are included in Section 5.3. A summary of the final ICs for the OW/EADA OU is included in Section 10.

2.2.2 CSOU

The CSOU was formed in 1992 pursuant to the Sixth Amendment to Administrative Order on Consent, Docket No. CERCLA-VIII-88-16 (Site Document Register No. 100-02-190), to address

residential soils, remaining commercial/industrial soils, and railroad bed materials within the Site. EPA issued the ROD for the CSOU in 1996 (Site Document Register No. 500-01-247). Figure 2.2 illustrates the CSOU. The selected remedy under the CSOU ROD required: (i) removal of residential soils with arsenic concentrations ≥250 mg/kg to specified depths, (ii) reduction of arsenic concentrations at the surface in commercial/industrial areas to concentrations ≤500 mg/kg through revegetation techniques and/or engineered covers, and (iii) construction of engineered covers to prevent direct contact with contaminated active railroad bed materials and installation of physical barriers to restrict access to the active railroad beds and to control surface water runoff. The CSOU ROD also required the implementation of certain ICs.

AR completed most of the RD/RA work required by the CSOU ROD pursuant to the Eleventh Amendment to Administrative Order on Consent, Docket No. CERCLA-VIII-88-16 (Site Document Register No. 500-02-195), and Administrative Order for Remedial Action, Docket No. CERCLA-08-2002-08 (Site Document Register No. 500-20-207), in accordance with the *Final 2002 Community Soils Operable Unit (CS OU) Remedial Action Work Plan/Final Design Report (RAWP/FDR)* (Site Document Register No. 500-05-81) (Phase 1). In 2005, all "active" railroad beds within the Site (including the active RARUS railroad line, which passes through the north side of Anaconda) were transferred from the CSOU to RDU 5 of the ARWW&S OU. "Historic/abandoned" railroad beds remained within the CSOU. This transfer was made to distinguish between the two types of railroad beds and the associated RD/RA—i.e., complete removal vs. in-place capping.

In 2013, EPA modified the selected remedy for the CSOU through a ROD Amendment (Site Document Register No. 500-01-294), which required an action level of 400 mg/kg for lead in residential soils and action levels of 250 mg/kg for arsenic and of 400 mg/kg for lead in accessible interior dust. The CSOU ROD Amendment also expanded the ICs required for the CSOU. In 2015, EPA issued a Unilateral Administrative Order for Remedial Action, Docket No. CERCLA-08-2015-0011 (Site Document Register No. 500-20-890), requiring AR to implement the modified CSOU remedy. On November 17, 2015, AR stated its intent to comply with the order (Site Document Register No. 500-21-891) and submitted the *Final 2015 Community Soils Operable Unit (CS OU) Remedial Action Work Plan/Final Design Report (RAWP/FDR)* (Site Document Register No. 500-05-83) (Phase 2). AR began implementation of the Phase 2 modified remedy in the Fall of 2015.

In 2017, EPA issued an ESD (Site Document Register No. 500-31-758) identifying two significant modifications to the CSOU remedy (2017 CSOU ESD). The first modification required AR to develop an interior dust abatement program to sample and cleanup interior dust exceeding the lead and arsenic concentrations of 400 mg/kg and 250 mg/kg, respectively, in all living spaces. This remedial component was modified to rely on a comprehensive health and education program, including an interior dust program to address residual interior dust contamination in the living spaces of all residents within the Site, while continuing to address the primary sources of interior dust contamination (soils and attic dusts) through sampling and cleanup. The second significant modification required removal of residential soils exceeding 250 mg/kg arsenic to a maximum depth of 18 inches. This remedial component was modified to require removal of arsenic contaminated

soils in gardens to a maximum depth of 24 inches and in other areas of residential yards to a maximum depth of 12 inches in order to make the remediation depth for arsenic contaminated soils consistent with the remediation depth of lead contaminated soils required under the CSOU ROD Amendment.

In 2020, EPA issued a second ESD (Site Document Register No. 500-31-768) identifying two significant modifications to the CSOU ROD, the 2013 CSOU ROD Amendment, and the 2017 CSOU ESD (2020 CSOU ESD). The first significant modification expanded the attic dust cleanup requirements through a comprehensive attic dust abatement program. The second significant modification provided for the implementation of certain ICs contingencies if ADLC fails to perform some or all of the primary ICs in the future. In addition to the two significant modifications discussed above, three minor changes were addressed in the 2020 CSOU ESD. The first minor change redefined the residential yard definition to be a maximum of 125 feet from the exterior of the residence, unless a property or natural boundary is encountered at a distance less than 125 feet. The second minor change assigned an action level of 500 mg/kg arsenic to commercial/industrial and unpaved parking lots within the community of Anaconda. The third minor change assigned a residential action level of 250 mg/kg arsenic and 400 mg/kg lead to all unpaved alleys within the community of Anaconda that have not already been remediated, and limited the sampling of unpaved alleys and parking lots to the 0- to 6-inch interval. In 2020, AR completed the *Final 2020 Community Soils Operable Unit (CS OU) Remedial Action Work Plan/Final Design Report (RAWP/FDR)* (Site Document Register No. 500-05-762) to address the requirements of the 2020 CSOU ESD (Phase 3).

AR has been implementing Phases 2 and 3 of the CSOU remedy since the Fall of 2015 pursuant to the 2015 Unilateral Administrative Order. By the end of 2020, AR had remediated 1,228 yards and 112 attics to meet the revised CSOU action levels. Currently, approximately 200 residential yards are being sampled annually. Soil sampling results are validated by AR, and in turn EPA reviews the data validation packages provided by AR to ensure the data is useable to support remedial action decisions.

Concurrent with data validation and useability reviews, ISWPs are developed for each residential property where arsenic and/or lead cleanup action levels are exceeded. Once these ISWPs are reviewed and approved by EPA, they are sent to landowners along with access agreements for RA implementation. Prior to construction, the ISWPs are reviewed at each property with the landowner to discuss the proposed actions and any landowner concerns.

Following completion of the RA field season, AR compiles the as-built drawings of the completed RA for each implemented ISWP and submits annual Construction Completion Reports (CCRs, which are discussed in more detail in Sections 7.4.1 and 11.1). AR has submitted annual attic dust CCRs for approval, but this will end with the submittal of the 2019 Attic Dust CCR as ADLC has assumed attic dust cleanup responsibilities under the 2020 Remedy Coordination, Funding, and Settlement Agreement (RCFSA) (Site Document Register No. 100-17-948), as amended, by and between ADLC and AR.

Pursuant to the RCFSA, ADLC is implementing the attic dust abatement program outlined in the 2020 CSOU ESD, which provides for cleanup of attics not used as living spaces or without an obvious exposure pathway. ADLC is to implement this program pursuant to the RCFSA over an approximately 25-year period.

AR also has completed remediation of historic railbeds within the Site under the *Final Historic Railroad Beds and Commercial/Industrial Areas RAWP* (Site Document Register No. 500-05-82). More detailed summaries of the CSOU RAWPs, RD/RA work completed, and RA work remaining are included in Section 5.4. A summary of the final ICs for the CSOU is included in Section 10.

2.2.3 ARWW&S OU

The ARWW&S OU was formed in 1995 pursuant to the Eighth Amendment to Administrative Order on Consent, Docket No. CERCLA-VIII-88-16 (Site Document Register No. 100-02-192) to address all remaining issues not addressed under other OUs at the Site, including all remaining non-residential soils, waste source areas (e.g., tailings and slag), human health and environmental risks, and impacts to soil, surface water, and groundwater from soils and waste sources. EPA issued the ROD for the ARWW&S OU in 1998 (Site Document Register No. 600-01-10). The ARWW&S OU ROD set forth the Selected Remedy for the remaining Site issues by way of the following media components:

- WMAs remedy;
- Miscellaneous Waste Materials remedy;
- Slag remedy;
- Contaminated Soils remedy;
- Groundwater remedy;
- Surface Water remedy; and
- ICs.

Following issuance of the ARWW&S OU ROD, remedial design units (RDUs) and Expansion Areas were developed to divide the OU into smaller, logical units for development of RD/RA. The RDU boundaries were determined using several factors, including areas that contain similar remediation techniques, landowner/stakeholder involvement, design approaches, optimization of remedial action resources, storm water management boundaries, and waste or media to be remediated (e.g., tailings, impacted soils, steep-slopes, etc.). Utilizing these criteria, the ARWW&S OU was ultimately divided into the following 15 RDUs and 2 Expansion Areas:

- RDU 1 – Stucky Ridge Uplands
- RDU 2 – Lost Creek Uplands
- RDU 3 – Smelter Hill Uplands
- RDU 4 – Anaconda Ponds
- RDU 5 – Blue Lagoons/Active Railroad
- RDU 6 – South Opportunity Uplands
- RDU 7 – North Opportunity Uplands

- RDU 8 – Opportunity Ponds
- RDU 9 – Fluvial Tailings
- RDU 10 – Warm Springs Creek
- RDU 11 – Cashman Concentrate
- RDU 12 – Slag
- RDU 13 – Old Works Groundwater
- RDU 14 – Smelter Hill Facilities
- RDU 15 – Mount Haggin Uplands
- West Galen Expansion Area
- Dutchman Creek Expansion Area

Figure 2.3 illustrates the location of each of the RDUs and Expansion Areas within the ARWW&S OU. Note that the 15 RDUs were originally designated under the June 2000 ARWW&S OU Remedial Design Work Plan (RDWP). Pre-design investigations conducted after the RDWP was approved expanded the ARWW&S OU to include the West Galen and Dutchman Creek areas, hence the term "Expansion Areas" instead of an additional RDU numeric designation.

In 2011, EPA issued an amendment to the ARWW&S OU ROD (2011 ARWW&S OU ROD Amendment) that, among other things, lowered the human health standard for arsenic in Site groundwater and surface water to meet new state and federal standards and expanded the areas in which the standard would be waived.

In 2020, EPA issued a second amendment to the ARWW&S OU ROD (2020 ARWW&S OU ROD Amendment) (Site Document Register No. 600-01-769) that identified additional response actions necessary to reduce surface water impacts and provided for contingent waivers of certain Montana water quality standards if certain conditions/remedial actions are satisfied. The contingent waivers are based on the technical impracticability of achieving standards from an engineering perspective. The 2020 ARWW&S OU ROD Amendment also identified one significant change and several minor changes to the ARWW&S remedy. The significant change provided for the implementation of certain ICs contingencies if ADLC fails to perform some or all of the primary ICs in the future. The minor changes provided for the partial covering of the Main Granulated Slag (MGS) Pile, and the continuation of waste consolidation in the Opportunity Ponds WMA. The minor changes also provided certain clarifications to the storm water requirements of the 1998 ARWWS OU ROD and confirmed that the actions for the Beryllium OU 9, the Flue Dust OU 11, and the Arbiter OU 12 undertaken pursuant to the Administrative Order on Consent for Removal Action, Docket No. CERCLA-VIII-88-06, Administrative Order on Consent for Removal Action, Docket No. CERCLA-VIII-92-12 (Site Document Register No. 614-02-202), and the Flue Dust OU ROD (Site Document Register No. 300-01-486) were considered final remedial actions consistent with the ARWW&S OU remedy.

AR has implemented significant portions of the RD/RA work required for the ARWW&S OU pursuant to the following administrative orders:

- Thirteenth Amendment to Administrative Order on Consent, Docket No. CERCLA-VIII-88-16 (Site Document Register No. 600-02-197);
- Administrative Order for Remedial Design/Remedial Action, Docket No. CERCLA-8-2001-01 (RDU 4 – Anaconda Ponds) (Site Document Register No. 604-20-205);
- Administrative Order for Remedial Design/Remedial Action, Docket No. CERCLA-08-2002-07 (RDU 8 – Opportunity Ponds) (Site Document Register No. 608-20-206);
- Administrative Order for Remedial Design/Remedial Action, Docket No. CERCLA-08–2002-09 ((RDU 3 and 14 – Aspen Hills Loop Track) (Site Document Register No. 614-20-208);
- Administrative Order for Remedial Design/Remedial Action, Docket No. CERCLA-08–2002-10 (RDU 1 – Stucky Ridge) (Site Document Register No. 601-20-209);
- Administrative Order for Remedial Design/Remedial Action, Docket No. CERCLA-08-2003-0017 (RDU 12 – Slag) (Site Document Register No. 612-20-210);
- Administrative Order for Remedial Design/Remedial Action, Docket No. CERCLA-08-2003-0018 (RDU 5 – Active Railroad West) (Site Document Register No. 605-20-211);
- Administrative Order for Remedial Design/Remedial Action, Docket No. CERCLA-08-2004-0001 (RDU 11 – Cashman Concentrate) (Site Document Register No. 611-20-212);
- Administrative Order for Remedial Design/Remedial Action, Docket No. CERCLA-08-2005-0007 (West Galen Expansion Area) (Site Document Register No. 616-20-213);
- Administrative Order for Remedial Design/Remedial Action, Docket No. CERCLA-08-2007-0008 (RDU 6 – South Opportunity Uplands) (Site Document Register No. 606-20-214);
- Administrative Order for Remedial Design/Remedial Action, Docket No. CERCLA-08-2008-0009 (RDU 7 – North Opportunity Uplands) (Site Document Register No. 607-20-215);
- Administrative Order for Remedial Design/Remedial Action, Docket No. CERCLA-08-2010-0004 (RDU 9 – Fluvial Tailings) (Site Document Register No. 609-20-283);
- Administrative Order for Remedial Design/Remedial Action, Docket No. CERCLA-08-2010-0005 (RDU 5 – Active Railroad East) (Site Document Register No. 605-20-287);
- Administrative Order for Remedial Design/Remedial Action, Docket No. CERCLA-08-2011-0009 (RDU 14 – Smelter Hill Facilities) (Site Document Register No. 614-20-239);
- Administrative Order for Remedial Design/Remedial Action, Docket No. CERCLA-08-2015-0010 (RDU 10 – Warm Springs Creek) (Site Document Register No. 610-20-892); and
- Administrative Order for Remedial Design/Remedial Action, Docket No. CERCLA-08-2016-0005 (RDU 3 – Smelter Hill Uplands) (Site Document Register No. 603-20-626).

As discussed in Section 5.5, RA construction has been substantially completed for the WMAs (RDUs 4, 8, 13, and 14) and for most of the lowland RDUs (RDUs 6, 7, 9, and West Galen Expansion Area). The remaining work is primarily in RDUs 1 (Stucky Ridge), 2 (Lost Creek), and 3 (Smelter Hill Uplands). The RA for RDUs 1, 2, and 3 will be completed in accordance with the FDR/RAWPs for these RDUs, which were approved by EPA in 2005 (RDUs 1 and 2) and 2013 (RDU 3). The work described in these FDR/RAWPs is augmented by the *ARWW&S OU Supplemental Surface Water Controls Remedial Design/Remedial Action (RD/RA) Report* (Site Document Register No. 100-15-784). This work plan identified additional engineered controls in the Lost Creek, Mill Creek, and Warm Springs Creek drainages; additional slope reclamation in barren and moderately vegetated areas identified in the *ARWW&S OU Final Surface Water Technical Impracticability (TI) Evaluation Report* (Site Document Register No. 100-15-867); and remedy enhancements to the designs presented in the RDUs 1, 2, and 3 RAWPs.

The existing RDU remedial designs and the supplemental surface water controls work will be further refined and integrated together through the pre-construction planning process described in Section 7 of this SMP. This will occur six months to two years ahead of RA construction. The results of this effort will culminate in an ISWP, Scope of Work, and/or Requests for Changes (RFCs), depending on type of RA project and degree of design change. Refer to Sections 3.5.2 and 7 of this SMP for further information regarding this process.

In addition to completing the remaining uplands soils work, partial or final closures of the three slag piles at the Site will occur under the RDU 12 RA. The MGS Pile Management Plan, the West Stack Slag (WSS) Management Plan, and the Anaconda Landfill Slag (ALS) Management Plan identify the management practices during the period of developing/processing slag as a resource. Detailed designs for closure of each of the slag piles will be developed once slag processing activities are permanently suspended and, in the case of the ALS pile, after the owner and operator of the pile agrees to perform the work or agrees to or is ordered to provide safe access to the property where RA is required.

More detailed descriptions of the RDUs and Expansion Areas composing the ARWW&S OU, as well as summaries of the ARWW&S OU RD/RA work completed and RA work remaining in each of the ARWW&S OU RDUs and Expansion Areas, are included in Section 5.5. A summary of the final ICs for the ARWW&S OU is included in Section 10.

3.0 PROJECT MANAGEMENT

The purpose of this Section is to provide guidance to efficiently manage the remaining RA and post-RA (performance monitoring and Long-term Inspection and Maintenance (LTIM)) activities at the Site, identify parties, define roles and responsibilities, lines of authority, communication, project coordination, project meetings, and submittal requirements.

3.1 Project Coordination

Communication and coordination between AR and the Agencies will be maintained throughout the RA process by following a specific format for each remaining RA construction project. This includes:

1. As discussed in Section 3.4.1, an Annual SMP meeting shall be held prior to each construction season to identify upcoming construction activities and potential issues, priorities, and milestones;
2. A project kickoff meeting to describe the Scope of Work and to discuss the project schedule, landowner issues, and data gaps;
3. Regular meetings and monthly reporting during performance of the RA to discuss progress, issues, and upcoming activities; and
4. Post-construction reporting and follow-up to summarize project data, work completed, and as-built information.

Landowners will be kept apprised of remedial activities through regular communication during field work. If site-specific conditions warrant, minor modifications to the existing work plan will be made on a case-by-case basis, and the Agencies will be provided with a RFC, Scope of Work, or ISWP identifying the change(s). Work will be performed on private properties through execution of Landowner Access Agreements that will identify the corresponding remedial activities and any land management requirements during establishment of the remedy. At the time the remedy is determined to meet Performance Standards, land management and control will revert back to the landowner.

3.1.1 Agencies

EPA and DEQ are the federal and state regulatory agencies for the Site. The primary responsibilities of EPA and DEQ are to ensure the Site remedy: (i) is constructed in a manner that is protective of human health and the environment and is consistent with applicable ROD requirements; and (ii) is implemented to meet or be in accordance with applicable, relevant, and appropriate requirements (ARARs) and the Agency-approved RAWP/FDRs. Unless stated otherwise, references to EPA approval in this SMP means that the approval is by EPA in consultation with DEQ, even when DEQ is not explicitly mentioned.

3.1.2 Potentially Responsible Parties (PRPs) Performing Work Under this SMP

3.1.2.1 Atlantic Richfield Company (AR)

AR has agreed to implement RA at the Site pursuant to the Consent Decree for the Anaconda Smelter NPL Site (Consent Decree) and the Scope of Work attached thereto. AR was named as the primary

PRP based on the activities of TAC and predecessors to TAC that owned and operated ore processing and smelting facilities in and around Anaconda from approximately 1884 until 1980, when the Anaconda smelter closed. In 1977, TAC was acquired by AR, and in 1981, TAC merged into AR. The Anaconda smelter and associated facilities were subsequently dismantled in the 1980s.

Under the Consent Decree, AR is responsible for implementing remedial actions for hazardous substances generated by or released into the environment from the former ore processing and smelting operations. AR's obligations include the coordination and direction of project activities as required by the Consent Decree and any other applicable RA enforcement mechanism, including submittal to the Agencies of deliverables and/or reports summarizing key information and activities.

AR is and will be supported by multiple contractors throughout completion of the RD/RA process.

3.1.2.2 RARUS (a/k/a Patriot a/k/a BA&P)

The Butte, Anaconda & Pacific Railroad (BA&P) was constructed and operated by the Great Northern Railroad and TAC. The BA&P railroad was purchased by RARUS in 1985. In 2007, Patriot Railway Company, LLC (Patriot) purchased the line and later that same year officially changed its name back to BA&P. Patriot is the current owner and operator of the active railroad and certain areas adjacent to the railroad at the Site. Patriot is also responsible for operation and maintenance of the rail line. Remediation activities associated with the RARUS railroad are addressed in the *RAWP/FDR for RDU 5 – Active Railroad/Blue Lagoon* (Site Document Register No. 605-05-364) and the *RAWP/FDR for RDU 11 – Cashman Concentrate* (Site Document Register No. 611-05-6).

3.1.2.3 RDM

RDM Multi-Enterprises, Inc. (RDM) is the current owner/operator of the ALS Pile and is a former operator of the MGS Pile. Remediation activities associated with the ALS pile are addressed in the *Remedial Design Unit (RDU) 12 – Anaconda Landfill Slag Site Final Slag Management Plan*, (Site Document Register No. 612-12-935).

3.1.3 Other Participating Parties

Certain agencies have assumed responsibilities for implementing portions of the RA at the Site through previous agreements. These agencies include the Montana Department of Justice – Natural Resources Damage Program (NRDP), ADLC, and DEQ.

3.1.3.1 State of Montana Natural Resource Damage Program

Under the 2008 Clark Fork River Operable Unit Consent Decree between the United States, the State, and AR (Civil Action No. CV89-039-BU-SEH and Civil Action No. CV-83-317-HLN-SEH), the State of Montana NRDP is the entity responsible for the RA, including project management, reporting and recordkeeping, and subsequent operation and maintenance activities for certain State-owned properties within the Site. These properties include Mt. Haggin RDU 15 (the Mount Haggin Wildlife Management Area administered by the Montana Department of Fish, Wildlife and Parks) and the

State-owned portion of Stucky Ridge RDU 1 (administered by the Montana Department of Natural Resources and Conservation (DNRC)).

3.1.3.2 Anaconda-Deer Lodge County

The 1994 OW/EADA OU, 1998 ARWW&S OU, and 1996 CSOU RODs (and subsequent Amendments / ESDs) state that "ICs are an integral part of the Selected Remedy to assure future protection of human health and the environment." Pursuant to the 2020 RCFSA between AR and ADLC and the 2022 Amendment of Agreement and Covenant Not to Sue between the Agencies and ADLC (EPA Docket No. CERCLA 94-12), ADLC is responsible for implementation and enforcement of certain Site ICs, as provided in the ICIAP. ADLC responsibilities include implementation and enforcement of the Development Permit System (DPS) ordinance and implementation of the Community Protective Measures Program (CPMP). The DPS serves as an overarching land use plan for County-wide development, including remediated areas, and serves as the vehicle for administering ICs to ensure protectiveness to human health and the environment. With the concurrence of EPA, ADLC has assumed responsibility for the implementation of the residential attic remediation work pursuant to the RCFSA and is responsible for the implementation of certain O&M activities for the OWGC pursuant to the 2019 *Old Work Golf Course Agreement* (Site Document Register No. 400-33-779). Thus, ADLC plays an important role in the overall remedial efforts at the Site. RA schedules along with periodic status updates will be provided by ADLC to AR and the Agencies. Data updates also will be provided periodically by ADLC, as further described in Section 4.

3.1.3.3 ADLC Historic Preservation Office

The *1994 Second Programmatic Agreement* and ARWW&S ROD require that the County Historic Preservation Officer be notified of pending remedial activities so that an assessment of potentially historical or culturally significant items/artifacts on the property can be performed and documented and/or preserved during RA implementation. Today, the ADLC Superfund Coordinator is notified instead of the County Historic Preservation Officer. Any preservation or mitigation of historical or culturally significant items/artifacts shall be implemented in accordance with the process described in the 2022 *Cultural and Historic Mitigation and Preservation Plan* (Site Document Register No. 100-12-921).

3.1.3.4 U.S. Forest Service

Portions of the Site are under the administration of the United States Forest Service (USFS) within the established boundaries of the Beaverhead-Deer Lodge National Forest in Anaconda-Deer Lodge County, Montana. The USFS, as a federal land management agency, has CERCLA authority, similar to EPA. In general, for response actions on National Forest System lands, USFS is the lead agency as defined by the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. Part 300. The NCP provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants, and includes a framework for planning and coordinating response actions. USFS prepares planning tools such as a

Preliminary Assessment/Site Inspection report and Engineering Evaluation/Cost Analysis reports to develop and evaluate response action alternatives. The NCP also requires compliance with other laws during response actions, such as the National Historic Preservation Act, Endangered Species Act (ESA), and Clean Water Act (CWA). The *United States Forest Service Lands ISWP* (Site Document Register No. 100-06-924) presents the same RA, as extracted from the respective RDU FDR/RAWP, required for lands administered by USFS within the Site.

3.1.3.5 DEQ

DEQ provides regulatory support to and coordination with EPA to ensure the remedy is constructed in a manner that is protective of human health and the environment consistent with applicable ROD requirements and is implemented to meet or be in accordance with ARARs and the Agency-approved RAWP/FDRs. Additionally, DEQ is the lead Agency for the clean-up of the Clark Fork River and Silver Bow Creek sites. Pursuant to the Clark Fork River Operable Unit Consent Decree (Site Document Register No. 100-03-566) and the Streamside Tailings Operable Unit Consent Decree (Site Document Register No. 100-03-567), DEQ has been granted access for the placement of contaminated materials from the Clark Fork River and Silver Bow Creek within the B2.12 cell at the Opportunity Ponds and development of the final closure design for the B2.12 cell consistent with the Clark Fork River Operable Unit Consent Decree (Site Document Register No. 100-03-566) and the *Final Opportunity Ponds Remedial Design Unit (RDU) 8 Remedial Action Work Plan/Final Design Report Volumes I through VI* (Site Document Register Nos. 608-05-376, 608-05-377, 608-05-416, 608-05-378, 608-05-379, 608-05-381, 608-05-382).

3.1.4 Other Government Stakeholders

Stakeholders include other federal, state, tribal, and local governmental agencies that have roles, responsibilities, and/or authorities for certain aspects of the RA at the Site. They include the Confederated Salish and Kootenai Tribes (CSKT), U.S. Fish & Wildlife Service (USFWS), and the Montana Department of Fish Wildlife and Parks (FWP).

3.1.4.1 CSKT

The CSKT are recognized as Natural Resource Trustees in the UCFRB. The CSKT were not a party to the 1994 Regional Historic Preservation Programmatic Agreement. As stated in the ARWW&S ROD, because the agreement does not provide for appropriate consultation with the CSKT on historic preservation issues, the Agencies will require appropriate consultation with the Tribes and other compliance with applicable historic preservation requirements during RA, as described in the *Cultural and Historic Mitigation and Preservation Plan*.

3.1.4.2 U.S. Fish Wildlife Service

RA activities require EPA to consult with the USFWS to assess and mitigate (as necessary) potential impacts to listed species and/or critical habitat resulting from implementation of RA activities. Specifically, the ESA requires that a Biological Assessment (BA) be prepared for any federal action

that is a major construction activity to determine the effects of the proposed action on listed and proposed species. Subsequently, USFWS may be required to complete a Biological Opinion determining whether the proposed action is likely to jeopardize the continued existence of the listed species or destroy/modify or adversely impact critical habitat, based on the data/information provided in the BA and provide additional requirements of the action.

Previous consultations with USFWS for the ARWW&S OU have been conducted at the Site by EPA, including BAs for RDU 10 Warm Springs Creek in 2014 and for the entire Site in 2020. As Warm Springs Creek has been designated as Bull Trout Critical Habitat, the 2014 effort required formal consultation, resulting in a July 3, 2014 Biological Opinion issued by USFWS on the effects of the proposed RDU 10 RA to Bull Trout and Bull Trout Critical Habitat. The Biological Opinion included terms and conditions for BMPs, monitoring, and reporting. Monitoring and reporting under the requirements of the Biological Opinion will be determined to be completed when Warm Springs Creek meets the performance targets established under the *Riparian Area Vegetation and Bank Stability Monitoring Plan for Willow Creek and Warm Springs Creek* (Site Document Register No. 610-12-591).

USFWS concurred with the conclusions in EPA's February 26, 2020 letter transmitting the Site-wide BA, which stated that Site-wide RA in the uplands may affect, but will not adversely affect, several threatened species and therefore formal consultation was not required, as documented in an April 8, 2020 letter. The letters do note that the RA work should be re-analyzed if conditions change. Although no waivers of Montana ambient surface water quality standards have been finalized to date, Section 7 of the *Final Surface Water Management Plan (SWMP)* (Site Document Register No. 100-12-781) does note:

> If any waiver to one or more replacement standards become necessary…, EPA may consult with the U.S. Fish & Wildlife Service as required under the Endangered Species Act to evaluate the impact of the waiver(s) on bull trout recovery efforts in the UCFRB. Under such a consultation, EPA may request additional biological monitoring data beyond the data required under the Biological Monitoring QAPP (Appendix B of the SWMP). The need for additional data collection will be determined after review of the existing site data and in consultation with the U.S. Fish & Wildlife Service.

3.1.4.3 State of Montana Fish, Wildlife, and Parks

Portions of the Site are managed by the Montana FWP within Anaconda-Deer Lodge County, Montana. Property managed by FWP at the Site primarily includes portions of the Mt. Haggin Wildlife Management Area within RDU 15, where work is being performed by NRDP. *See* Section 3.1.3.1 above.

3.1.5 Landowners

Because the Site encompasses the communities of Anaconda and Opportunity, as well as the surrounding rural population, remedial boundaries for the various RDUs extend across numerous properties owned by various government and private entities, including AR. Therefore, Landowner Access Agreements must be executed between AR and each affected landowner prior to RA construction activities. The agreements allow AR and the Agencies to access the properties to complete pre-construction activities, RA construction, and post-RA monitoring and maintenance. The Site Database, discussed in Section 4.0 below, incorporates a regularly updated data layer, extracted from the State of Montana Cadastral System to use in coordinating completed, ongoing, and future remedial activities.

Once a project area has been identified, "target" landowners within the project area are identified and access agreements are developed based on the anticipated scope of work for the project and the RA objectives. Access for performance of the RA may require multiple agreements depending on whether the remedy has been sufficiently defined (single agreement) or whether data gaps associated with the remedy need to be addressed and/or weed spraying in advance of RA activities is necessary (multiple agreements). Access agreements are executed between AR and the landowner for access for performance of RA activities by AR and oversight by Agency personnel. Typical Landowner Access Agreements contain:

- The scope of work to be performed on the property;
- The limits of the work activities;
- The schedule for the work activities;
- Limitations on the use of the property under remediation both during and after the implementation of the work necessary to maximize the potential for vegetation success;
- Special considerations (e.g., landowner seed mixes, livestock accommodations, fencing); and
- Summary of post-RA operation and maintenance activities that may be performed (e.g., weed management, vegetation monitoring).

A summary of the RA to be performed on a given property is discussed with the landowner and expectations for the final vegetation condition (i.e., typical upland grass cover) are conveyed. The landowner agreements also may include provisions for pre- and post-RA maintenance activities and equipment access and staging requirements to support RA construction.

During implementation of the RA and until post-RA Performance Standards have been attained, AR or its designee will coordinate with landowners to manage the property in a manner consistent with success of the remedy. In most cases, upon completion of RA construction activities and achievement of Performance Standards, property management and control revert back to the landowner to manage the property to minimize erosion or degradation of the remedy (e.g., vegetation cover). Property management (e.g., weed control) and future development of properties by the landowners must

comply with local and state laws, ordinances, building/development codes, and requirements identified in the DPS, and any amendments thereto.

3.1.6 Recalcitrant Landowners

In some instances, access to parcels requiring remedial activities may not be granted by landowners, even after multiple communications. Remedial activities cannot be completed on these properties until access is granted. These parcels are tracked by and for each OU in the Site Database as "Access Not Granted" and through the Geographic Information System (GIS) and managed and maintained as part of the ICIAP.

OW/EADA OU and ARWW&S OU Recalcitrant Landowners

If a landowner within the OW/EADA OU or ARWW&S OU fails or refuses to provide access for RA activities on his or her property by August 31, 2024, in order to allow for completion of RA activities by the end of 2025, then: (i) AR has no obligation to make further attempts to obtain access from the landowner after August 31, 2024; and (ii) the RA for that property will not be required until RA is requested and access is granted by the current owner or secured by EPA, or ownership of the property changes and the new owner grants access.

CSOU Recalcitrant Landowners

If a landowner within the CSOU fails or refuses request sampling or to provide access for RA activities on his or her property by August 31, 2024, to allow for completion of RA activities by the end of 2025, that property will not be eligible for future response actions until one of the following conditions are met: (i) property ownership changes; (ii) a member of a sensitive population group resides at the property; (iii) a person residing at the property is found to have a confirmed blood lead reading above 5 micrograms/deciliter (µg/dl); or (iv) the landowner requests and AR agrees to perform remediation post-2025. Additional details regarding post-2025 management and remediation of CSOU properties are described in Section 7 of the *Community Soils OU RAWP/FDR* (Site Document Register No. 500-05-762).

3.2 Communications

As discussed in the RAWPs, communication and coordination between the PRPs and the Agencies will be maintained through meetings and discussions, as necessary. The key entities involved in the remediation and OM&M, including their roles, are identified in Section 3.6. A meeting will be conducted between the PRPs and the Agencies to discuss upcoming RAs and to schedule pre-construction field meetings, as necessary. *See* Section 7.1.1.1.

3.2.1 Reporting and Recordkeeping

3.2.1.1 Weekly Progress Meetings

Weekly progress meetings will be held. These meetings will include representatives from the PRP performing the RA, EPA, DEQ, the QA/QC Oversight Personnel, the Design Engineer (as necessary), the Contractor's site representative, and affected landowners (as necessary). The weekly progress meeting agenda will include, at a minimum, the following:

- Status of the work items (construction and monitoring and maintenance) initiated to date;
- Scheduled work items for the following week;
- Problems encountered and proposed solutions;
- Health and safety or cultural/historic issues that have arisen in the past week; and
- Other issues that are pertinent to the work scheduled for the following week.

3.2.1.2 Monthly Progress Reports

As required by the SOW, monthly reports summarizing construction progress and OM&M activities will be submitted to the Agencies during the RA phases. As identified in section 7 of the SOW, the monthly report will include the following:

- The actions that have been taken toward achieving compliance with the CD;
- A summary of all results of sampling, tests, and all other data received or generated by AR;
- A description of all deliverables that AR submitted to EPA;
- A description of all activities relating to RA Construction that are scheduled for the next six weeks;
- An updated RA Construction Schedule, together with information regarding percentage of completion, delays encountered or anticipated that may affect the future schedule for implementation of the Work, and a description of efforts made to mitigate those delays or anticipated delays;
- A description of any modifications to the work plans or other schedules that AR has proposed or that have been approved by EPA; and
- A description of all activities undertaken in support of the Community Involvement Plan (CIP) during the reporting period and those to be undertaken in the next six weeks.

3.2.2 Plan Submissions and Approvals

RAWP/FDRs have been or will be approved for all OUs (including RDUs and Subareas) within the Site. Since implementation of the RA will continue over a period of several years, it is possible that changes in approach to implementation may be identified prior to implementation of the design(s), thus, requiring modification of the design(s). For example, an area may improve through natural recovery, thereby making the prescribed remedy in the approved RAWP/FDR no longer appropriate. In such a case, the RFC process identified in the RAWP/FDRs will be followed. Typically, the completed RFC will be submitted to the PRP representative to be reviewed, approved, and signed. The RFC will then be forwarded to the Agency oversight person and the Agency project coordinator

for approval, modification, and/or rejection. The signed RFC will then be returned to the PRP's project representative. Changes in implementation or how the RA is performed that do not affect the design are considered minor and generally do not require formal approval.

3.3 Remedial Action Tracking

Since cleanup at the Site is expected to be performed over several years, the progress of the RA will be tracked for each area and comprehensively for the Site. To accomplish this objective, a data management system, described in Section 4.0, has been developed with a GIS overlay to assist in the management and tracking of RA and Inspection & Maintenance (I&M) activities. Current RA status is discussed in Section 5.0; performance monitoring status is discussed in Section 8.0; LTIM status is discussed in Section 9.0; and the RA Completion Process is presented in Section 11.0. Annual status updates will be presented in an Annual SMP Report to assist in tracking all the work completed within each RDU and Expansion Area (discussed below).

3.4 SMP Annual Report

A SMP Annual Report will be prepared by the AR, or its designee, in the first quarter of each year (and issued by the end of the first week in April) for the previous year's work. The SMP Annual Report will address the RA components/phases described below. These phases are taken from EPA's *Close-Out Procedures for National Priority List Sites* ("*Close Out Guidance*," May 2011; amended June 2022) and *Operation and Maintenance in the Superfund Program* (EPA, 2001). An outline for the Annual SMP Report is provided in Appendix A. The Annual SMP Report will provide at least the following information:

- Construction update – Updates to the area-specific Status Maps and a summary of the previous year's construction activities for each area and a forecast for the upcoming two years will be provided. The schedule will be updated and provide dates for both submitted and forthcoming construction-specific Work Plans and CCRs, as required.
- Monitoring/Maintenance Update – All projects where construction activities have been deemed complete and have transferred into the monitoring/maintenance phase will be described for the previous year. Annually, remedial performance is evaluated under the media- or area-specific I&M/Management Plans and summarized in media- or area-specific I&M/Monitoring reports as identified in the chart below.

Annual Report	Due	Associated Site Document
Annual Engineered Controls I&M Report	End of 2Q	*Engineered Controls I&M Plan Revision 2* (Site Document Register No. No. 100-11-90)
Annual Vegetation Monitoring Report	End of 2Q	*Vegetation Management Plan, Rev. 2* (Site Document Register No. 100-12-89)
Annual Vegetation Compliance Reports	End of 2Q	*Vegetation Management Plan, Rev. 2* (Site Document Register No. 100-12-89)

Annual Dutchman Wetlands Operation, Monitoring and Maintenance Report	End of 2Q	*Final Dutchman Property Management Plan* (Site Document Register No. 617-26-*285)*
Anaconda Smelter Development Repository Annual Report	End of 1Q	*Final Anaconda Smelter Development Repository Operation and Management (O&M) Plan Revision 1.* (Site Document Register No. 608-12-93).
Annual Slag Operations Reports	End of 1Q	*MGS Management Plan* (Site Document Register No. 612-12-782); *WSS Management Plan* (Site Document Register No. 612-12-780); *ALS Management Plan* (Site Document Register No.612-12-935)
Annual Long-Term Groundwater Data Summary Report	End of 2Q	*Long-Term Groundwater Monitoring Program Quality Assurance Project Plan (QAPP) – Revision 2* (Site Document Register No. 100-23-872).
Annual Domestic Well Data Summary Report	End of 2Q	*Domestic Well Monitoring Plan – Revision 1* (Site Document Register No. 100-12-866)
Annual Smelter Hill Repository Complex Report	End of 2Q	*Smelter Hill Repository Complex (SHRC) Long-Term Operation, Monitoring, and Maintenance (OM&M) Plan* (Site Document Register No. 614-29-776)
Annual Railroad O&M Report	End of 2Q	*Railroad Superfund Operations and Maintenance (O&M) Plan* (Site Document Register No. 605-29-750)
Annual Old Works Golf Course O&M Report	End of 2Q	*Final Old Works Golf Course Operations and Maintenance Plan* (Site Document Register No. 400-29-773)
Annual RDU 9 Opportunity Ponds Groundwater and Surface Water Management System Report	End of 1Q	*Groundwater and Surface Water Management System Operation and Maintenance Plan* (Site Document Register Document No. 608-11-95)
Annual Riparian Report	End of 1Q	*Riparian Area Vegetation and Bank Stability Monitoring Plan for Willow Creek and Warm Springs Creek*, (Site Document Register No. 610-12-591)

The SMP Annual Report will include projected inspection dates to meet the submittal timeframe identified above. A map illustrating the status of the vegetation monitoring activities for remediated areas of the Site will be prepared and included.

- Surface Water Monitoring update – The SMP Annual Report will include tabulated water quality monitoring data in the form of summary tables from the United States Geologic Service (USGS) for Lost, Mill, Warm Springs, and Willow Creeks for the previous year to

the extent that the data is available. The data tables will display discharge and both dissolved and total recoverable concentrations for arsenic, cadmium, copper, lead, and zinc for the 8 annual sampling events for each creek. Exceedances will be shown in bold black font text for exceedances of chronic standards, and bold red font text for exceedances of acute standards.

- Site RA Schedule – As a part of the forecast for the upcoming year, a provisional schedule will be prepared/updated annually to provide a "look-ahead" of the anticipated RA activities. The annual schedule will be provided in the SMP Annual Report. Since the SMP Annual Report will be issued the first quarter of each year, the revised provisional schedule will cover the upcoming year starting at the end of the first quarter.
- Completion – The status of project construction completion (e.g., CCR submissions and approvals) and OU RA completion (e.g., RA Reports and Certification of RA Completion) will be provided.

3.4.1 SMP Meeting(s)

A meeting will be held early in the second quarter of each year between AR and the Agencies following submittal of the *Draft Final Annual SMP Report* to discuss upcoming remedial activities (i.e., which areas will go into construction that season, which areas will go into construction the following season, and anticipated OM&M activities for the year). A schedule for additional joint AR/Agency meetings, including any necessary field meetings, to confirm issues will be determined as necessary. The following is an agenda of the items expected to be covered, at a minimum, at the initial construction meeting held each year:

- Identify the area(s) of RA construction for the upcoming season;
- Identify any outstanding Landowner Agreements/issues;
- Schedule and determine who will perform pre-construction field meetings, as necessary;
- Discuss any significant issues that need to be addressed during the field meeting (e.g., location of BMPs, boundaries between remedy types, data requirements);
- Identify environmental consultation and mitigation needs (e.g., wetlands, historic and cultural resources) and schedule any required field meetings to address the same; and
- Overview of anticipated Monitoring & Maintenance activities.

Following the meeting, the Draft Final Annual SMP Report will be updated, as necessary, summarizing discussions at the meeting, and resubmitted to the Agencies. As needed, separate topic-specific meetings (e.g., construction, groundwater, ICs) may take place to address specific issues.

3.5 Community Involvement

The Site includes the communities of Anaconda and Opportunity and many rural residences are located within the Site. Community involvement is an essential component of the remedial process to engage in dialogue and collaboration with community members. Parts of Anaconda meet the criteria for special consideration based on environmental justice (EJ) screening. EPA's community involvement plan for the Site (EPA 2022, *Community Involvement Plan, Anaconda Smelter*

Superfund Site, Anaconda-Deer Lodge County, Montana) includes EJ goals and steps to meet them, and also includes EPA's Environmental Justice Action Plan (EPA 2022, *Environmental Justice Action Plan, Anaconda Smelter Superfund Site, Anaconda, MT*) as an appendix. The action plan uses EJ screening maps to highlight particular census blocks within the community where education levels, income levels, and population aged greater than 64 years indicate that special attention should be paid to communication.

The objective of community involvement is to:

- Keep the public involved and informed of ongoing and planned activities;
- Encourage and enable the public to get involved;
- Listen to public input and comment;
- Consider changing planned actions based on public comments or concerns; and
- Communicate to community members how the Agencies considered their comments, what the plan is, and why decisions were made.

AR and the Agencies, in coordination with the ADLC Superfund Coordinator, shall promote community involvement through public meetings, public notices, and periodic informational publications summarizing remedial progress. Upon request, AR will support EPA's community outreach activities.

3.6 Project Organization

This Section identifies the project roles and responsibilities for completing work activities identified in this SMP. AR is responsible for completing the scope of work identified in the SOW and this SMP; however, AR may coordinate with third parties to complete select components of the work. Due to the longevity of the project schedule and the likelihood that specific individuals will change over the course of the project, this SMP presents positions rather than identifying specific personnel and/or companies.

- **EPA Remedial Project Manager (RPM)** – EPA is the lead regulatory Agency for the Site. The RPM shall oversee the performance of AR's RD/RA activities to ensure compliance with applicable laws and requirements. The EPA RPM shall coordinate RD/RA activities amongst stakeholders.
- **DEQ Project Officer** – This individual is the State Representative that works in coordination with the EPA RPC to provide technical assistance to EPA related to AR's RD/RA activities and to enforce State cleanup requirements and regulations. The DEQ Project Officer shall help coordinate RD/RA activities amongst stakeholders.
- **EPA Construction Oversight** – EPA shall serve as a liaison between the public, the AR PC (defined below) and the EPA RPM and provide for oversight of AR's RA implementation to ensure that Remedial Action Objectives are being met in accordance with the Remedial Design.

- **ADLC Environmental Director** – This individual serves as the liaison between ADLC, EPA, DEQ and the AR PC to keep the community informed of the remedial progress and oversees the ADLC ICs Program.

- **AR Project Coordinator(s) (AR PC)** – This individual shall coordinate directly with the EPA RPM and DEQ Project Officer and is responsible for overall project management, coordination, reporting functions, project report/summary development, documentation of all project activities, and project implementation.

- **AR Technical Contractor(s)** – AR will retain contractors for development of remedial approaches and monitoring activities in accordance with applicable laws, requirements, and EPA criteria. Contractors will provide oversight of the RA implementation to confirm that the RA is being performed in accordance with RD specifications and requirements and shall serve as a liaison between the EPA Construction Oversight representative and the AR PC(s). Contractors shall perform monitoring and associated reporting activities in accordance with the appropriate O&M/I&M/Management Plans and shall interact directly with the AR PC and EPA Construction Oversight representative.

- **RA Contractor(s)** – AR shall retain contractors for implementation of the RA in accordance with the Agency-approved OU/RDU/Subarea-specific Remedial Designs. The RA Contractors shall interact directly with AR Oversight Personnel.

- **ICs Contractor** – ADLC shall retain a contractor for management of the Site ICs component in accordance with the requirements of the RCFSA, including coordinating development activities with Superfund remedial requirements and associated reporting activities.

4.0 DATA MANAGEMENT

The generation and use of RD, RA and inspection, operations, monitoring, and maintenance data are key elements in RA implementation, RA completion, and eventual deletion / delisting of the Site. During performance of these phases of the remedial process, significant data is generated by multiple entities and is subject to review and use by multiple groups. Thus, it is necessary to identify, organize, and store large amounts of information. Project data is used to support evaluations and decision making for RD/RA and post-remedy operations, inspection/monitoring, and maintenance. In order to accomplish this, a database (Geodatabase and/or a Microsoft (MS) Structured Query Language (SQL) database) that can be accessed by an on-line server Geographic Information Systems (GIS) interface for evaluation and distribution was developed for data storage and to serve as a portal for storing and accessing data. This system (referred to as the database) can be accessed via a web browser by authorized EPA, State, ADLC and AR representatives through a link with an active username and password.

Data Management and the Data Management System are described in more detail in the Data Management Plan (DMP) included as Appendix B to this SMP. In general, the data management system is a part of the overall Site Quality Management System (QMS), which includes the Quality Management Plan (QMP) (Document Register No. 100-30-617), project-specific Quality Assurance Project Plans (QAPP) or Sampling and Analysis Plans (SAPs), and the DMP. All data (field measurements, laboratory analytical, images, documents) collected under the QMS are managed and stored per procedures detailed in the DMP.

Data management for the Site falls into three primary categories: (1) Data Management Systems, (2) Data Storage and Management, and (3) Data Sharing. As technology changes and new components are introduced, the DMP will be updated to reflect current procedures.

4.1 Data Management Systems

The data management systems are the data sources, hardware, software, personnel and access and security involved in the data management for the Site. Typically, data sources fall into two categories—internal and external sources. Internal sources are those data collected/created within the Site's QMS following the approved QMP and related QAPPs. Specific QAPPs for the Anaconda Smelter NPL Site include, but are not limited to:

- *CS OU Final Residential Soils/Dust QAPP* (Site Document Register No. 500-23-634);
- *Final Domestic Well Monitoring Program QAPP* (Site Document Register No. 100-23-604);
- *Final Long Term Groundwater Monitoring Program QAPP* (Site Document Register No. 100-23-872);
- *Existing Data QAPP* (Site Document Register No. 100-23-770);
- *Final Vegetation Compliance Determination QAPP* (Site Document Register No. 100-23-873);
- *Sitewide Confirmation Sampling QAPP* (Site Document Register No. 100-23-618);
- Benthic Macroinvertebrate Monitoring QAPP (Appendix B of the SWMP); and

- Institutional Controls QAPP.

External sources are data collected/created outside the Site's QMS. These include, but are not necessarily limited to, the Montana Cadastral System ownership data, the Montana Bureau of Mines and Geology (MBMG) groundwater information center data, and the USGS surface water monitoring data, which provide useful information to supplement internal data sources. Additional data sources will be updated in the Annual SMP Report.

As hardware and software expand and evolve, new technologies will be deployed and implemented at the Site. The current configurations of software and hardware along with the personnel necessary to implement the DMP procedures are discussed within the DMP. These personnel include the data sources (such as data collectors in the field), the data producers (such as the labs which analyze the field samples), and the personnel who manage and maintain the hardware and software of the system. Lastly, the Data Management Systems include the necessary database access and security needed to ensure the data is stored and maintained properly, which in turn ensures data integrity.

4.2 Data Storage and Management

Data storage and management is concerned with the procedures for input, storage, and integration of project data into the database. All data that flows to the database must go through a Database QA Manager who ensures the integrity of the database. The Database QA Manager is responsible for the maintenance of the data itself and performs the final quality assessment review prior to importing into the database. Data submitted to the Database QA Manager typically falls into known data type categories and will be submitted following specific formats. Any non-typical data types will be reviewed by the Database QA Manager and determined if it should be included in the database. The Database QA Manager also will review the data and ensure that the data has followed approved data collection procedures and has been quality assessed and validated.

4.3 Data Sharing

Data sharing describes how data is requested and shared from the database with the various users and generally what is available in the database. The primary data users include AR, various governmental agencies (e.g., ADLC, DEQ, EPA), and consultants and subcontractors of AR or these governmental agencies. Data will be shared with the EPA and DEQ and their contractors to support and facilitate their regulatory oversight responsibilities and with ADLC and its contractors to support and facilitate performance and implementation of ADLC's ICs obligations required pursuant to the ICIAP and RCFSA. Direct public access to the database is not planned; however, data is available to the public by request. Once available, information can be retrieved from the system for property (parcels) located in the Superfund Overlay and other areas addressed under CERCLA by ADLC. Preferably, final data will be distributed "real" time" using the database web-portal. This method of data dissemination provides easier and quicker access to the data, eliminating the need to contact ADLC or the Database QA Manager with a data request.

Through the system described in the DMP (maintained by AR) and AR's Institutional Controls Management System plan attached to the ICIAP, used in conjunction with the system maintained by ADLC, as described in the ADLC Institutional Controls Management Plan attached to the ICIAP, ADLC will implement the Site's ICs obligations. AR's system, used in tandem with ADLCs Institutional Controls Management System, provides owners and other interested parties with information regarding remedial activities, DPS activities, land use restrictions, and maintenance requirements related to a given property in the Superfund Overlay.

5.0 REMEDIAL DESIGN/REMEDIAL ACTION STATUS

The objective of this Section is to summarize the status of RD/RA required under the SOW. Figures 5.1 through 5.19 of this SMP illustrate the extent of remedial activities that have been completed at the Site through 2020, including associated acreages for each action, as compared with outstanding RA activities. Tabular listings are provided on the drawings that identify the primary design documents (FDRs/RAWPs/ISWPs) pertinent to the RAs required in each area as well as all relevant CCRs providing the details for the various RAs that have been implemented to date. Section 5 Tracking Tables 5.1 through 5.19 summarize the actions implemented to date for each area along with the associated acreages for each action. Since RD/RA activities will be ongoing, information contained within this Section will be updated in the Annual SMP Reports to provide a yearly snapshot of current RD/RA status (i.e., implemented vs. outstanding activities). The following Subsections summarize the status of RD/RA activities through the end of 2020 for the five existing OUs at the Site.

5.1 Mill Creek OU

During the initial stages of investigating residential soils at the Site, elevated concentrations of arsenic were discovered in soils in the community of Mill Creek, located 2 miles east of Anaconda (directly downwind from the Anaconda smelter stack). Following an expedited RI/FS, the Mill Creek OU ROD was issued in 1987. The selected remedy included permanent relocation of all Mill Creek area residents and demolition of all structures within the OU. In 1988, EPA and AR entered into a Consent Decree (Civil Action No. 88-32, Site Document Register No. 200-03-199), under which AR was obligated to perform the selected remedy. Demolition debris was consolidated into the MGS Pile in RDU 12. AR implemented the Mill Creek remedy in September 1988, and EPA certified the Mill Creek OU remedial action as complete on July 15, 2022. Any outstanding response action activities for the Mill Creek OU, including any O&M, will be addressed as part of the ARWW&S OU RDU 12 and RDU 6 remedies.

5.2 Flue Dust Operable Unit

Flue dust was generated as a by-product of copper smelting operations at the Site, which contained high concentrations of heavy metals. Approximately 500,000 dry tons of flue dust from nine locations on Smelter Hill were treated and consolidated into an on-Site repository designed to meet RCRA Subtitle C requirements.

Although not part of the Flue Dust OU, the response actions for the Arbiter OU and Beryllium OU wastes were performed concurrently with the Flue Dust work in 1992, which consisted of removing waste materials and placing the materials into two on-site RCRA waste repositories. The work consisted of removing and disposing of wastes from the Arbiter Ponds and Bunkers, the Old Works tailings ponds, the Beryllium B-2 Pond, and the Weather Hill beryllium disposal sites into two separate repositories.

RD/RA activities for the Flue Dust OU, as well as the Arbiter OU and Beryllium OU, wastes have been completed and are summarized in the following documents:

- *Flue Dust Operable Unit Final Design Report, Volumes 1 and 2* (Site Document Register Nos. 300-05-589 and 300-05-590);
- *Flue Dust Operable Unit Construction Completion Report, Volumes 1 and 2* (Site Document Register No. 300-08-599);
- *Arbiter and Beryllium Expedited Response Action Work Plan* (attachment to Site Document Register No. 614-02-202);
- *Arbiter and Beryllium Expedited Response Action Construction Completion Report, Volumes 1 and 2* (Site Document Register Nos. 100-08-913 and 100-08-914);
- *Remedial Action Completion Report, Flue Dust Operable Unit 11* (Site Document Register No. 300-15-915); and
- *Remedial Action Completion Report, Arbiter Operable Unit 12 and Beryllium Operable Unit 9* (Site Document Register No. 612-15-916).

EPA has determined that all response actions for the Arbiter, Beryllium, and Flue Dust OUs—other than long-term operations, monitoring, and maintenance—have been completed. The agency issued a Notice of Intent to Delete these OUs from the Site on August 10, 2020. Following the public comment period, these three OUs were deleted from the NPL on September 30, 2020, pursuant to the Partial Deletion Rule. Operations, monitoring, and maintenance for the repositories constructed for consolidation of the Flue Dust, Arbiter, and Beryllium OU wastes is ongoing and will be performed as part of ARWW&S OU O&M activities as described in Section 9.0 of this SMP.

5.3 Old Works/East Anaconda Development Area OU

The OW/EADA OU is located north and east of Anaconda and is the boundary established for the original six subareas of the OW/EADA OU, as shown on Figure 2.1. These subareas include: the southern portion of Stucky Ridge (Subarea 1); the Old Works Golf Course (OWGC) (Subarea 2); the Ballfields and Industrial Park (Subarea 3); the Red Sands and Arbiter Plant (Subarea 4); the East Anaconda Yards and Benny Goodman Park (Subarea 5); and the Drag Strip (Subarea 6). The Aspen Hills Addition and Mill Creek Addition were added as part of the 1995 OW/EADA ESD (Site Document Register No. 403-03-579). This OU generally is characterized by large flatter-sloped areas of impacted soils and vegetation. The OW/EADA OU has multiple landowners and land uses and is classified as open space/recreational/commercial/industrial. The remedy for the OW/EADA OU is identified in the 1994 ROD, the 1995 ESD, and the 2020 ESD.

5.3.1 Summary of Remedial Design

The RD for the OW/EADA OU is presented in the following EPA-approved FDR/RAWP documents with a brief description of the area each document addresses.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
400-05-401; 400-05-402	*Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area (OW/EADA) Operable Unit (OU) Remedial Action Work Plan/Final Design Report Volumes I & II*	August 23, 1994	Addresses remedial design for the entire OW/EADA OU, except for Aspen Hills. Portions of the design were not complete and were addressed later as part of the documents listed below.
400-05-468	*Draft Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area (OW/EADA) Operable Unit (OU) Remedial Action Work Plan/Final Design Report Volume III*	September 25, 1996	Addendums A and B: Addresses the Aspen Hills Subdivision, Phases I and II (these Addendums also are included in Volume IV, Addendum E). Addendum C: Addresses portions of Subareas 3 and 4 not addressed as part of the Old Works Golf Course construction under Volumes I and II, including Red Sands and the Jig Tailings. Addendum C also addresses portions of the original design that were later modified in Subarea 1, including Stucky Ridge Stormwater Management and Historic Preservation (Historic Trails).
403-05-469	*Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area (OW/EADA) Operable Unit (OU) Industrial Area Remedial Action Work Plan/Final Design Report Volume IV, Addendum D Report I Industrial Area*	August 30, 2002	Addresses the Industrial Area properties in Subareas 3 and 4 that are not owned by AR and were not conveyed to ADLC.
N/A*	Volume IV, Addendum D Report II	November 30, 2001	Addresses the Anaconda Local Development Industrial Park properties in Subarea 3. Includes the Landowner Remedial Action Work Plans (LRAWP) for Action and No Action areas.
N/A*	Volume IV, Addendum D Report III	November 30, 2001	Addresses the LRAWP for Industrial properties privately owned and properties owned by the ADLC in Subareas 3 and 4.
403-05-470	*Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area (OW/EADA) Operable Unit (OU) Industrial Area Remedial Action Work Plan/Final Design Report Volume IV, Addendum D Report IV Arbiter Industrial Complex*	October 4, 2002	Addresses the Arbiter Industrial Complex including LRAWP for parcels within the Arbiter Industrial Complex.

405-05-430	*Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area (OW/EADA) Operable Unit (OU) Volume IV Addendums E and F Aspens Hills and East Anaconda Yards Remedial Action Work Plan/Final Design Report*	August 3, 1998	Addendum E: Addresses Aspen Hills and surrounding areas (Phases I, II and III). Addendum F: Addresses East Anaconda Yards (Subarea 5).
406-05-408	*Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area (OW/EADA) Operable Unit (OU) Volume IV Addendum G Mill Creek Subarea Remedial Action Work Plan/Final Design Report*	July 10, 1998	Addresses the Mill Creek Subdivision (part of Subarea 6) and surrounding areas.
406-05-403	*Final Anaconda Smelter NPL* Site *Old Works/East Anaconda Development Area (OW/EADA) Operable Unit (OU) Volume IV Addendum H Drag Strip Remedial Action Work Plan/Final Design Report*	July 17, 1998	Addresses the Dragstrip and surrounding areas (part of Subarea 6 and a portion of Subarea 4).

* Volume IV Addendum D Reports II and III were replaced by the ISWPs for each parcel and are not included in the Site Document Register. The ISWPs are listed in the following subsections.

The OW/EADA OU remedy includes the following work components:

- Preservation of historical features;
- Removal and consolidation of waste materials located outside of the Old Works WMA;
- Construction of 18-inch Engineered Cover using a combination of *in-situ* lime amended materials and the placement of cover soil over waste materials located within the Old Works WMA;
- *In-situ* soil treatment using tillage of surface soils ranging in depth from 6-to-24 inches in areas located outside the Old Works WMA;
- Construction of temporary 6-inch Engineered Cover in industrial development areas located outside the Old Works WMA;
- Construction of 6-inch industrial gravel cover in existing industrial areas located within the Old Works WMA;
- Upgrading and repairing existing storm water controls and constructing new storm water controls to manage surface water;
- Implementation of ICs; and
- Upgrading stream channel controls to safely pass the 100-year flood event.

ISWPs have been prepared to present the RA requirements specific to each individual property parcel or lot. These ISWPs are based on the approved designs presented in the above-referenced design reports. The ISWPs were prepared to present the detailed construction requirements for each parcel or lot that satisfy the design and any landowner requirements. These ISWPs are submitted to and

approved by the Agencies prior to construction. The status of RD/RA activities within each subarea, including the Aspen Hills and the Mill Creek Additions, are summarized below.

5.3.1.1 OW/EADA OU Subareas 1 and 2

Subarea 1 is located north of Anaconda and northwest of the OWGC within the Old Works WMA. This Subarea contains structures considered to be historical and cultural resources, including flues, historic rail grades, oven wastes, and demolition debris. The demolition debris consists of stone and brick remains from the six flues and numerous small feeder flues, smelting furnaces, and converters. This Subarea is located on property owned by ADLC and the State.

Subarea 2 represents the Heap Roast Slag, Miscellaneous Waste Piles, and a portion of the Warm Springs Creek Floodplain, and encompasses the OWGC. This Subarea originally contained waste, such as tailings, jig tailings, heap roast slag, demolition debris, and solid waste materials. The OWGC was constructed as an EPA-approved dedicated development (DD) in conjunction with the remedy for the historic Old Works smelters and is presently owned and operated by ADLC.

5.3.1.1.1 Summary of RD

The RD for Subareas 1 and 2 includes constructing Engineered Covers, upgrading existing and constructing new storm water management features, and preserving historic features. The Engineered Cover design included constructing the 230-acre OWGC to highlight the historical significance of the Old Works area. The design included construction of multiple engineered controls (i.e., storm water ponds, channels, streambank reinforcement, and an underdrain piping system) to control storm water runoff from Stucky Ridge to downgradient areas and to minimize surface water infiltration. The approved RD for Subareas 1 and 2 is presented in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
400-05-401; 400-05-402	*Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area (OW/EADA) Operable Unit (OU) Remedial Action Work Plan/Final Design Report Volumes I & II*	August 23, 1994	Addresses remedial design for the entire OW/EADA OU, except for Aspen Hills. Portions of the design were not complete and were addressed later as part of the documents listed below.
400-05-468	*Draft Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area (OW/EADA) Operable Unit (OU) Remedial Action Work Plan/Final Design Report Volume III*	September 25, 1996	Addendums A and B: Addresses the Aspen Hills Subdivision, Phases I and II (these Addendums also are included in Volume IV, Addendum E). Addendum C: Addresses portions of Subareas 3 and 4 not addressed as part of the OWGC construction under Volumes I and II, including Red Sands and the Jig Tailings. Addendum C also addresses portions of the original design that were later modified in Subarea 1, including Stucky Ridge Stormwater Management and Historic Preservation (Historic Trails).

400-05-904	*Final Old Works Golf Course (OWGC) Lake #2 Liner Repair Remedial Action Work Plan/Final Design Report*	October 4, 2013	Addresses the remedial design for repair of the Lake 2 liner and installation of the liner groundwater protection system at the Old Works Golf Course.

5.3.1.1.2 Summary of RA

RA activities for Subareas 1 and 2 have been substantially implemented, with most of the work being completed by 1998. Some areas within Subarea 1 were included in the ARWW&S OU RDU 1 Stucky Ridge Uplands RD, including steep slope reclamation and *in-situ* soil treatment along the northern boundary of the OWGC and the southern boundary of Stucky Ridge; these areas will be addressed as part of the RDU 1 RA. Figure 5.1 illustrates the areas of work completed and those still requiring RA. Table 5.1 summarizes the actions completed to date and those remaining within Subareas 1 and 2. Additional details associated with implemented RA can be found in the documents identified in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
401-08-466	*Final Remedial Action Completion Report Anaconda Smelter NPL Site Old Works/ East Anaconda Development Area Operable Unit Subareas 1 and 2*	April 1, 1998	Summarizes RA activities implemented within the OW/EADA Subareas 1 and 2, including construction of the OWGC.
402-08-740	*Draft Final Old Works Golf Course (OWGC) Lake #2 Liner Geotechnical Investigation, Piezometer Installation, and Interim Liner Repair Construction Completion Report*	December 19, 2012	Summarizes the results of the geotechnical investigation and interim repair activities for the Lake 2 liner system at the OWGC.
402-08-741	*Final Old Works Golf Course (OWGC) Metering Basins Construction Completion Report*	November 10, 2020	Summarizes upgrades to the OW/EADA OU storm water conveyance system located directly upgradient of the OWGC to address storm water erosion and sediment transport from an historic area.
402-08-472	*Draft Final Old Works Golf Course (OWGC) Lake #2 Liner Repair Construction Completion Report*	December 17, 2014	Summarizes the RA activities implemented for the repair of the Lake 2 liner and liner groundwater protection system at the OWGC
400-19-926	*Draft Final Old Works Golf Course (OWGC) Remedial Action (RA) Completion Report*	July 20, 2021	Summarizes the RA completed at the OWGC certifying that performance standards have been achieved according to EPA's *Close Out Guidance*.

5.3.1.2 OW/EADA OU Subareas 3 and 4

Subarea 3 is located within the township of Anaconda. It is a flat area consisting of roads, a few commercial building structures, the floodplain south of Warm Springs Creek, and ball fields. This Subarea is made up of both public and private property.

Subarea 4 is located northeast of Anaconda and directly north of the MGS pile. This Subarea encompasses the initial location of the Red Sands waste pile, Arbiter Plant, and property adjacent to the ADLC sewage treatment ponds. This Subarea is located on property owned by ADLC and multiple private landowners.

5.3.1.2.1 Summary of RD

The RD for Subareas 3 and 4 includes constructing Engineered Covers, excavating waste materials located outside of the OW/EADA OU WMA, upgrading existing and constructing new storm water management features, and preserving historic features. The RD includes approximately 350 acres of Engineered Covers, approximately 90 acres of waste excavation, and constructing multiple engineered controls (storm water ponds, channels, piping, and streambank reinforcement) to control storm water runoff to downgradient receptors and to minimize surface water infiltration. The approved RD for Subareas 3 and 4 is described in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
400-05-401; 400-05-402	*Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area (OW/EADA) Operable Unit (OU) Remedial Action Work Plan/Final Design Report Volumes I & II*	August 23, 1994	Addresses remedial design for the entire OW/EADA OU, except for Aspen Hills. Portions of the design were not complete and were addressed later as part of the documents listed below.
400-05-468	*Draft Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area (OW/EADA) Operable Unit (OU) Remedial Action Work Plan/Final Design Report Volume III*	September 25, 1996	Addendums A and B: Addresses the Aspen Hills Subdivision, Phases I and II (these Addendums also are included in Volume IV, Addendum E). Addendum C: Addresses portions of Subareas 3 and 4 not addressed as part of the OWGC construction under Volumes I and II, including Red Sands and the Jig Tailings. Addendum C also addresses portions of the original design that were later modified in Subarea 1, including Stucky Ridge Stormwater Management and Historic Preservation (Historic Trails).
403-05-577	*Landowner Remedial Action Work Plan (LRAWP) Anaconda Deer Lodge County A1 Lumber Parcel*	November 6, 1997	Addresses the remedial design for the Anaconda Deer Lodge County A1 Lumber Parcel.

403-05-578	*Landowner Remedial Action Work Plan (LRAWP) Anaconda Deer Lodge County Ball Field Parcel*	November 5, 1997	Address the remedial design for the Anaconda Deer Lodge County Ball Field Parcel including the placement of engineered cover soil.
404-06-228	*Draft Final Old Works – Warner Landowner Remedial Action Work Plan*	November 30, 2001	Addresses the remedial design for the Warner Parcel located within the Arbiter Industrial Complex including minor grading to address surface water ponding/infiltration and the placement of an industrial engineered cover (lime rock) over the entire parcel.
403-05-469	*Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area (OW/EADA) Operable Unit (OU) Industrial Area Remedial Action Work Plan/Final Design Report Volume IV, Addendum D Report I Industrial Area*	August 30, 2002	Addresses the Industrial Area properties in Subareas 3 and 4 that are not owned by AR and were not conveyed to ADLC.
N/A*	Volume IV, Addendum D Report II	November 30, 2001	Addresses the Anaconda Local Development Industrial Park properties in Subarea 3. Includes the Landowner Remedial Action Work Plans (LRAWP) for Action and No Action areas.
N/A*	Volume IV, Addendum D Report III	November 30, 2001	Addresses the LRAWP for Industrial properties privately owned and properties owned by the ADLC in Subareas 3 and 4.
403-05-470	*Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area (OW/EADA) Operable Unit (OU) Industrial Area Remedial Action Work Plan/Final Design Report Volume IV, Addendum D Report IV Arbiter Industrial Complex*	October 4, 2002	Addresses the Arbiter Industrial Complex including LRAWP for parcels within the Arbiter Industrial Complex.
403-06-424	*Landowner Remedial Action Work Plan (LRAWP) Stokan Parcel Lot No. 6 of 6 Lot Minor Subdivision, Plat Not 179-A*	September 2, 2003	Addresses the remedial design for the Stokan Parcel including minor grading to address surface water ponding/infiltration and the placement of an industrial engineered cover (lime rock) over the entire parcel.
404-06-429	*Final Individual Site Work Plan Ueland Ranches Parcels (Lots 5B and 5E of the Arbiter Minor Subdivision; Plat No. 281-A)*	August 10, 2005	Addresses the remedial design for the Ueland Lots located within the Arbiter Industrial Complex including minor grading to address surface water ponding/infiltration and the placement of an industrial engineered cover (lime rock) over the entire parcel.
404-06-221	*Draft Final Old Works – McDowell Parcel Individual Site Work Plan*	May 8, 2006	Addresses the remedial design for the McDowell Parcel including minor grading to address surface water ponding/infiltration and the placement of an industrial engineered cover (lime rock) over the entire parcel.

403-06-320	*Final Anaconda-Deer Lodge County (ADLC) Parcel D Individual Site Work Plan*	October 25, 2006	Addresses the remedial design for the ADLC Parcel D located within the Arbiter Industrial Complex including minor grading to address surface water ponding/infiltration and the placement of an industrial engineered cover (lime rock) over the entire parcel.
403-06-323	*Final Old Works Industrial Areas Individual Site Work Plan (ISWP) BBMI, L.L.C. Parcel (Lot 3C Arbiter Minor Subdivision; Plat No. 281-A, and Certificate of Survey No. 295-B*	October 25, 2006	Addresses the remedial design for the BBMI, L.L.C. Parcel located within the Arbiter Industrial Complex, including minor grading to address surface water ponding/infiltration and the placement of an industrial engineered cover (lime rock) over the entire parcel.
403-06-331	*Final Individual Site Work Plan (ISWP) for Anaconda Local Development Corporation (ALDC) Arbiter Industrial Park (AIC) Lots (Arbiter Minor Subdivision; Plat No. 281-A, and Certificate of Survey No. 295-A*	June 29, 2007	Addresses the remedial design for the ALDC Parcels located within the Arbiter Industrial Complex including minor grading to address surface water ponding/infiltration and the placement of an industrial engineered cover (lime rock) over the entire parcel.
403-06-326	*Final Old Works Industrial Areas Individual Site Work Plan (ISWP) for Hoscheid Arbiter Industrial Complex (AIC) Lot 3D (Arbiter Minor Subdivision; Plat No. 281-A, and Certificate of Survey No. 295-A)*	August 31, 2007	Addresses the remedial design for the Hoscheid Parcel located within the Arbiter Industrial Complex including minor grading to address surface water ponding/infiltration and the placement of an industrial engineered cover (lime rock) over the entire parcel.
403-06-328	*Final Old Works Industrial Areas Individual Site Work Plan (ISWP) for Miller Mechanical Arbiter Industrial Complex (AIC) Lot 4G (Arbiter Minor Subdivision; Plat No. 281-A, and Certificate of Survey No. 295-A)*	March 20, 2008	Addresses the remedial design for the Miller Mechanical Parcel located within the Arbiter Industrial Complex including minor grading to address surface water ponding/infiltration and the placement of an industrial engineered cover (lime rock) over the entire parcel.
403-06-414	*Final Old Works – Mike Sales Parcel Individual Site Work Plan (ISWP)*	September 4, 2015	Addresses the remedial design for the Mike Sales Parcel including minor grading to address surface water ponding/infiltration, the placement of an industrial engineered cover (lime rock) over the entire parcel, and 6-inch removal and backfill with Type A Material and sod placement.
403-06-329	*Final Old Works Industrial Areas Individual Site Work Plan (ISWP) for National Guard Parcel*	December 4, 2008	Addresses the remedial design for the National Guard Parcel including select removal and backfill of contaminated soils exceeding the commercial/industrial land use arsenic action level of 500 mg/kg.

403-06-580	*Final A-1 Lumber Yard Parcel Individual Site Work Plan (ISWP)*	April 2009	Addresses the remedial design for the A-1 Lumber Yard Parcel including select removal and backfill of contaminated soils exceeding the residential land use arsenic action level of 250 mg/kg.
403-06-321	*Final Individual Site Work Plan (ISWP) for Anaconda Local Development Corporation Industrial Park Subdivision Blocks 1, 3 and 4*	June 2, 2009	Addresses the remedial design for the ALDC lots within the industrial park subdivision including select removal and backfill of contaminated soils exceeding the commercial/industrial land use arsenic action level of 500 mg/kg.
403-06-335	*Final Old Works Industrial Areas Individual Site Work Plan (ISWP) for Scherman Parcel*	January 29, 2010	Addresses the remedial design for the Scherman including select removal and backfill of contaminated soils exceeding the commercial/industrial land use arsenic action level of 500 mg/kg.
403-06-327	*Final Old Works Industrial Areas Individual Site Work Plan (ISWP) for Anaconda Local Development Corporation (ALDC) KANA Parcel (Lot No. 2-A of Certificate of Survey No. 358-B)*	June 4, 2010	Addresses remedial design for the KANA Parcel including grading to enhance surface water drainage, the construction of a vegetative engineered cover, and construction storm water channel to collect and convey storm water flows.
404-06-225	*Final Old Works – Industrial Area (IA) Individual Site Work Plan for Sewage Treatment Plant (STP)*	October 19, 2011	Addresses remedial design for the STP property including removal of surface soils to a depth of 2 inches were the commercial/industrial land use arsenic level of 500 mg/kg is exceeded and consolidation within property owned by AR.
403-06-224	*Final Old Works – Industrial Area (IA) Individual Site Work Plan (ISWP) for AWARE, Inc. (Industrial Park Subdivision Block 1, Lots 8 and 9)*	January 31, 2012	Addresses the remedial design for the AWARE, Inc Industrial Park Subdivision Lots including select removal and backfill of contaminated soils exceeding the commercial/industrial land use arsenic action level of 500 mg/kg.
404-06-410	*Draft Final Old Works – Industrial Area (IA) Remedial Action Work Plan/Final Design Report (RAWP/FDR), Volume IV, Addendum D, Report IV – Arbiter Industrial Complex – Individual Site Work Plan (ISWP) Cesco Parcels Lot 1A and 3B; and Di Francesco Parel Lot 2 of the Arbiter Minor Subdivision; Plat No. 281-A*	February 4, 2015	Addresses the remedial design for the Cesco and Di Francesco Parcels located within the Arbiter Industrial Complex including minor grading to address surface water ponding/infiltration, installation of storm water controls (e.g., channels, valley gutters, and storm water piping), demolition of certain structures, and the placement of an industrial engineered cover (lime rock) over the entire parcel.

404-06-227	*Final Old Works – Industrial Area (IA) Individual Site Work Plan (ISWP) Pintler Pets Parcel (Lot IB Arbiter Minor Subdivision; Plat No. 281-A) Revision 1.*	May 21, 2012	Addresses the remedial design for the Pintler Pets Parcel located within the Arbiter Industrial Complex including minor grading to address surface water ponding/infiltration, installation of storm water controls (e.g., swale and manhole), installation of concrete slab on grade, and the placement of an industrial engineered cover (lime rock) over the entire parcel.
403-06-223	*Final Individual Site Work Plan (ISWP) Town Pump, Inc. Property (C.O.S. 358B: Parcel 2-B; C.O.S 193A: Parcel C-2)*	March 18, 2013	Addresses the remedial design for the Town Pump property including select removal and backfill of contaminated soils exceeding the commercial/industrial land use arsenic action level of 500 mg/kg.

5.3.1.2.2 Summary of RA

RA within Subareas 3 and 4 has been implemented, except for four private properties in Subarea 4 where access has not yet been granted (i.e., the McDowell, RDM, CESCO, and Warner properties). Figure 5.1 illustrates the RA completed within Subareas 3 and 4 and the remaining areas requiring RA. Table 5.1 summarizes the actions completed to date and those remaining within Subareas 3 and 4. Additional details associated with implemented RA can be found in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
403-08-571; 403-08-572	*Draft Final Remedial Action Construction Completion Report Subarea 3 (Ball Fields/Industrial Park) and Portion of Subarea 4 (Industrial Park/Red Sands)*	October 2000	Summarizes the 1997-1998 RA construction completed within Subarea 3 Ball Fields/Industrial Park and portion of Subarea 4 Red Sands/Industrial Park areas of approximately 192 acres of engineered covers including, construction of the Lower Historic Trail, preservation of existing historical features, and construction of storm water controls.
403-08-315	*A-1 Lumber Yard Parcels Remedial Action Construction Completion Report*	January 2010	Summarizes the 2009 RA construction completed at the A-1 Lumber Yard Parcels of 8.5 acres consisting of removal of contaminated soils exceeding the residential action level of 250 mg/kg, backfill with clean borrow soil, and revegetated.
403-08-412	*Draft Final 2010 Scherman Parcel Remedial Action (RA) Construction Completion (CCR)*	July 19, 2011	Summarizes the 2010 RA construction completed at the Scherman Parcel of 1.49 acres consisting of removal of contaminated soils exceeding the commercial/industrial action level of 500 mg/kg, backfill with clean borrow soil, and revegetated.

403-08-516	*Final 2012 Aware Inc. Remedial Action (RA) Construction Completion Report (CCR)*	May 23, 2014	Summarizes the 2012 RA construction completed at the Scherman Parcel of 0.79 acres consisting of removal of contaminated soils exceeding the commercial/industrial action level of 500 mg/kg, backfill with clean borrow soil and gravel, and sod placement.
403-08-555	*Final Old Works – 2013 Town Pump Inc. Property (C.O.S. 358B: Parcel 2-B C.O.S. 193A: Parcel C-29) – RA Construction Completion Report (CCR)*	June 17, 2014	Summarizes the 2013 RA construction completed at the Town Pump Inc. property of 4.30 acres consisting of removal of contaminated soils exceeding the commercial/industrial action level of 500 mg/kg and backfill with gravel.
403-08-556	*Final Old Works Industrial Area (IA) 2011 Anaconda Local Development Corporation (ALDC) Remedial Action (RA) Construction Completion Report (CCR)*	June 16, 2014	Summarizes the 2011-2012 RA construction completed on the ALDC properties consisting of 3.88 acres of removal of contaminated soils exceeding the commercial/industrial action level of 500 mg/kg and backfill with clean borrow soil, 39.0 acres of engineered cover construction (vegetative and gravel), construction of storm water controls (East Ditch, KANA Station Storm Drain, Atlas Storm Drain, McDowell Connector Storm Drain, and Channel 4A), and revegetation.
403-08-557	*Final National Guard Parcel Remedial Action (RA) Construction Completion Report (CCR)*	May 28, 2014	Summarizes the 2009 RA construction completed at the National Guard Parcel of 1.47 acres consisting of removal of contaminated soils exceeding the commercial/industrial action level of 500 mg/kg and backfill with clean borrow soil and revegetated.
403-08-561	*Final Old Works – Stokan Parcel – RA Construction Completion Report (CCR)*	May 23, 2014	Summarizes the 2003 RA c construction completed at the Stokan Parcel consisting of grading to address surface water ponding/infiltration and the placement 2.65 acres of an industrial engineered cover (lime rock).
404-08-517	*Final Sewage Treatment Plant (STP) Remedial Action (RA) Construction Completion Report (CCR)*	June 3, 2014	Summarizes the 2012 RA construction completed at the STP consisting of removal of surface soils to a depth of 2 inches over 33.5 acres, consolidation of excavated soils on AR property, construction of 6.32 of engineered cover soil (vegetative and gravel), and revegetation.
404-08-559	*Final Old Works – Puccinelli Parcel – RA Construction Completion Report (CCR)*	May 23, 2014	Summarizes the 2006 RA construction completed at the Puccinelli Parcel of 6.90 acres consisting of removal of contaminated soils and backfill with clean borrow soil and gravel.

404-08-560	*Final Anaconda-Deer Lodge County Properties Within Subarea 4 Remedial Action (RA) Construction Completion Report (CCR)*	May 30, 2014	Summarizes the 2010 RA construction completed on ADLC properties consisting of removal and backfill of soils, construction of 37.3 acres of engineered covers, and revegetation.
404-08-568	*Draft Final Old Works Arbiter Industrial Complex (AIC) Remedial Action (RA) Construction Completion Report (CCR)*	October 30 2013	Summarizes the 2005-2012 RA construction completed at the Arbiter Industrial Complex consisting of grading to address surface water ponding/infiltration, the placement 22.4 acres of an industrial engineered cover (lime rock), 20.7 acres of vegetative engineered cover, construction of storm water controls (channels and piping), and revegetation.
404-08-633	*Draft Final Old Works-Industrial Area (IA) Remedial Action Work Plan/Final Design Report (RAWP/FDR), Volume IV, Addendum D, Report III Mike's Sales Parcel (Lot No. 1 of 6 Lot Minor Subdivision; (Plat No. 179-A) Remedial Action (RA) Construction Completion Report*	February 23, 2016	Summarizes the 2015 RA construction completed at the Mike Sales Parcel consisting of removal of impacted materials and backfill with clean borrow soil, grading to address surface water ponding/infiltration, the placement 0.77 acres of an industrial engineered cover (lime rock), and removal and replacement of asphalt parking area.

5.3.1.3 OW/EADA OU Subarea 5

Subarea 5 is located west of the MGS pile and northwest of ARWW&S RDU 14. The Subarea includes the East Anaconda Yard; Benny Goodman Park; and the sites of a former brick plant, an acid plant, and a crushing plant. AR remediated much of this area during demolition activities. Landowners include ADLC, multiple private landowners, and ARCO Environmental Remediation, LLC (AERL).

5.3.1.3.1 Summary of RD

The RD for Subarea 5 includes constructing Engineered Covers and upgrading existing and constructing new storm water management features. The design includes approximately 171 acres of Engineered Covers and constructing multiple engineered controls (storm water channels and piping) to control storm water runoff to downgradient receptors and to minimize surface water infiltration. The approved RD for Subarea 5 is described in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
400-05-401; 400-05-402	*Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area (OW/EADA) Operable Unit (OU) Remedial Action Work Plan/Final Design Report (RAWP/FDR) Volumes I and II*	August 23, 1994	Addresses remedial design for the entire OW/EADA OU, except for Aspen Hills. Portions of the design were not complete and were addressed later as part of the documents listed below.
405-05-430	*Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area (OW/EADA) Operable Unit (OU) Volume IV Addendums E and F Aspens Hills and East Anaconda Yards Remedial Action Work Plan/Final Design Report (RAWP/FDR)*	August 3, 1998	Addendum to the August 23, 1994 RAWP/FDR addressing remedial design for the Aspen Hills and East Anaconda Yards.
405-05-374	*Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area Operable Unit Old Works East Anaconda Yard Lot 3 Beryllium Remedial Action Work Plan (RAWP)*	November 3, 2004	Addresses the remedial design for beryllium and laboratory wastes discovered within Lot 3 of the East Anaconda Yard.
405-06-319	*Final Old Works – Industrial Area (IA) Individual Site Work Plan (ISWP) Anaconda-Deer Lodge County (ADLC) East Anaconda Yards Parcels (Plat No. 289A and 339B)*	July 24, 2009	Addresses the remedial design for the ADLC Parcels within the East Anaconda Yard, including engineered covers (vegetative and gravel) over contaminated soils exceeding the commercial/industrial land use arsenic action level of 500 mg/kg, and the installation storm water controls.
405-06-322	*Final Old Works – Industrial Area (IA) Individual Site Work Plan (ISWP) Assembly of God Parcel (Lot 4 of East Anaconda Yards Subdivision; Plat No. 289-A)*	July 24, 2009	Addresses the remedial design for the Assembly of God Parcel within the East Anaconda Yard, including select removal and backfill of soils and engineered covers (vegetative and gravel) over contaminated soils exceeding the commercial/industrial land use arsenic action level of 500 mg/kg, and the installation storm water controls.
405-06-324	*Final Old Works – Industrial Area (IA) Individual Site Work Plan (ISWP) GM Partnership LLP Parcel (Lot 2 of East Anaconda Yards Subdivision; Plat No. 289-A)*	July 24, 2009	Addresses the remedial design for the GM Partnership LLP Parcel within the East Anaconda Yard, including select removal and backfill of soils and engineered cover (gravel) over contaminated soils exceeding the commercial/industrial land use arsenic action level of 500 mg/kg.

405-06-325	*Final Old Works – Industrial Area (IA) Individual Site Work Plan (ISWP) Guhlke Parcel (Tract 2; Plat No. 352B)*	July 24, 2009	Addresses the remedial design for the Guhlke Parcel within the East Anaconda Yard, including select removal and backfill of soils exceeding the commercial/industrial land use arsenic action level of 500 mg/kg.
405-06-330	*Final Old Works – Industrial Area (IA) Individual Site Work Plan (ISWP) Puccinelli Parcel (Lot 1 of East Anaconda Yards Subdivision; Plat No. 289-A)*	July 24, 2009	Addresses the remedial design for the Puccinelli Parcel within the East Anaconda Yard, including select removal and backfill of soils exceeding the commercial/industrial land use arsenic action level of 500 mg/kg.

5.3.1.3.2 Summary of RA

Subarea 5 RA activities have been substantially implemented, with most of the RA construction within the Subarea implemented by 2009. The remaining RA to be implemented within Subarea 5 is addressed under the ARWW&S OU RDU 5 RA and includes the active East Anaconda Rail Yard. Figure 5.1 illustrates the areas where RA has been implemented and the remaining areas requiring RA. Table 5.1 summarizes the actions implemented to date and those remaining within Subarea 5. Additional details associated with implemented RA can be found in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
405-08-465	*Final Remedial Action Construction Completion Report Subarea 5 (Aspen Hills)*	January 2001	Summarizes the 1995-1998 RA construction completed at the Aspen Hills area consisting of excavation of select ballast material from the Aspen Hills Loop Track and disposal in a repository on Smelter Hill, grading and installation of storm water controls to address surface water erosion, streambank stabilization, and revegetation.
405-08-404	*Final Remedial Action Construction Completion Report Subarea 5 (East Anaconda Yards/Benny Goodman Park)*	April 2001	Summarizes the 1997-1998 RA construction completed at the East Anaconda Yards/Benny Goodman Park consisting of grading and consolidation of wastes, placement of various types of engineered covers and treatments, installation of storm water controls, and revegetation.
405-08-334	*Draft Final East Anaconda Yards Lot 3 Beryllium Remedial Action Construction Completion Report (CCR)*	July 13, 2005	Summarizes the 2004-2005 RA construction completed at the East Anaconda Yards Lot 3 consisting of removing beryllium and laboratory wastes, backfilling, consolidating wastes within a repository on Smelter Hill, and revegetation.

405-08-439	*Final 2009 East Anaconda Yards (EAY) Remedial Action (RA) Construction Completion Report (CCR)*	January 19, 2011	Summarizes the 2009 RA construction completed at the East Anaconda Yards specifically the Guhlke Parcel, the ADLC Parcels, the Puccinelli Parcel, the GM Partnership Parcel, and the Assembly of God Parcel. RA construction consisted of the select removal and backfill of soils and engineered covers (vegetative and gravel) over contaminated soils exceeding the commercial/industrial land use arsenic action level of 500 mg/kg, and the installation storm water controls.

5.3.1.4 OW/EADA OU Subarea 6

Subarea 6 is located on the northeastern section of the OW/EADA OU. It is bounded by Warm Springs Creek to the south, Highway 274 to the east, and Stucky Ridge to the west. The primary feature is the drag strip privately owned by Lost Creek Raceway Association, Inc.

5.3.1.4.1 Summary of RD

The RD for Subarea 6 includes constructing Engineered Covers, *in-situ* soil treatments, and upgrading existing and constructing new storm water management features. The design includes approximately 210 acres of Engineered Covers, approximately 33 acres of *in-situ* soil treatments, and constructing multiple engineered controls (storm water ponds and channels) to control storm water runoff to downgradient receptors and to minimize surface water infiltration. The approved RD for Subarea 6 is described in the document listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
406-05-403	*Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area Operable Unit Volume IV Addendum H Drag Strip Remedial Action Work Plan/Final Design Report*	July 17, 1998	Addresses the remedial design for the Drag Strip and surrounding areas exceeding the recreational land use arsenic action level of 1,000 mg/kg including engineered covers over contaminated soils, *in-situ* soil treatments, grading and waste consolidation, the installation storm water controls, and revegetation.

5.3.1.4.2 Summary of RA

Subarea 6 RA activities have been substantially implemented, with most of the RA construction within the Subarea implemented by 2009. The remaining RA within Subarea 6 will be addressed under the ARWW&S OU RDU 1 RA, which includes approximately one acre located between Warm Springs Creek and the ALS Pile. Figure 5.1 illustrates the areas where RA has been implemented and the remaining areas requiring RA. Table 5.1 summarizes the RA activities implemented to date and those remaining within Subarea 6. Additional details associated with implemented RA can be found in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
406-08-575	*Draft Final Remedial Action Construction Completion Report Subarea 6 Drag Strip*	May 24, 2000	Summarizes the 1998-1999 RA construction completed at the Drag Strip and surrounding areas consisting of engineered covers (vegetative and gravel) over contaminated soils, *in-situ* soil treatments, grading and waste consolidation, the installation storm water controls (retention pond and intercept channel), and revegetation.
406-15-20	*Final Dragstrip Cover Repair Project Maintenance Summary Report*	January 2009	Summarizes the 2007 corrective action RA construction completed at the Drag Strip and surrounding areas to address vegetation and engineered controls performance standards. Work consisted of additional engineered covers (vegetative) and repairs within storm water channels.

5.3.1.5 OW/EADA OU Aspen Hills and Mill Creek Additions

The OW/EADA OU also included portions of the Aspen Hills and Mill Creek areas because the anticipated land uses, site characteristics, and contaminants of concern (COCs) are similar to other areas of the OU. A portion of the railroad loop in the Aspen Hills Subdivision that is located immediately adjacent to Mill Creek was included in the expansion of the OU. An expansion to the portion of Mill Creek included in the OW/EADA OU occurred under the 1995 ESD, as described in Section 2. This area of Mill Creek contains a portion of the former Smelter Hill Railroad Loop, which runs through several lots within the Aspen Hills Subdivision.

5.3.1.5.1 Summary of Aspen Hills Addition RD

The RD for the Aspen Hills Addition included removing and consolidating railroad ballast material, constructing Engineered Covers, *in-situ* soil treatments, and upgrading existing and constructing new storm water management features. The design includes approximately 56 acres of Engineered Covers using a combination of cover soil and *in-situ* soil treatments, as well as constructing multiple engineered controls (storm water channels and streambank reinforcement) to control storm water runoff to downgradient receptors and to minimize surface water infiltration. The approved RD for the Aspen Hills Addition is described in the document listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
405-05-430	*Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area (OW/EADA) Operable Unit (OU) Volume IV Addendums E and F Aspens Hills and East Anaconda Yards Remedial Action Work Plan/Final Design Report (RAWP/FDR)*	August 3, 1998	Addendum to the August 23, 1994 RAWP/FDR addressing remedial design for the Aspen Hills and East Anaconda Yards.

5.3.1.5.2 Summary of Aspen Hills Addition RA

RA activities within the Aspen Hills Addition have been implemented. Figure 5.1 illustrates where RA was implemented. Table 5.1 summarizes the actions implemented to date. Additional details associated with implemented RA can be found in the document listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
405-08-465	*Final Remedial Action Construction Completion Report Subarea 5 (Aspen Hills)*	January 2001	Summarizes the 1995-1998 RA construction completed at the Aspen Hills area consisting of excavation of select ballast material from the Aspen Hills Loop Track and disposal in a repository on Smelter Hill, grading and installation of storm water controls to address surface water erosion, streambank stabilization, and revegetation.

5.3.1.5.3 Summary of Mill Creek Addition RD

The Mill Creek Addition RD included removing and consolidating waste materials, constructing Engineered Covers, *in-situ* soil treatment, and constructing storm water controls. The ARWW&S OU RDU 6 remedy addresses final reclamation of the remaining impacted soils within the Mill Creek Addition. The approved RD for Mill Creek Addition is described in the document listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
406-05-408	*Final Anaconda Smelter NPL Site Old Works/East Anaconda Development Area Operable Unit Volume IV Addendum G Mill Creek Subarea Remedial Action Work Plan/Final Design Report*	July 10, 1998	Addresses the remedial design for the Mill Creek Subdivision exceeding the recreational land use arsenic action level of 1,000 mg/kg including engineered covers over contaminated soils, *in-situ* soil treatments, grading and waste consolidation, the installation storm water controls, and revegetation.

5.3.1.5.4 Summary of Mill Creek Addition RA

The Mill Creek Addition was identified for future industrial development. For this reason, a temporary Engineered Cover was constructed on approximately 45 acres and consisted of a uniform 6-inch in place layer of cover soil. The temporary Engineered Cover was constructed to provide a sufficient growth medium able to support vegetation until a permanent cover could be provided during future development. *In-situ* soil treatment was used to remediate soil and low concentration waste areas with elevated surface arsenic concentrations. *In-situ* soil treatment was completed on approximately 12 acres and consisted of deep tilling to a depth of 18 inches with incorporation of lime amendment. Storm water controls were constructed to control sediment transport from the Smelter Hill during storm and seasonal runoff events. Storm water controls constructed included upgrading existing channels, new channel construction linking the Aspen Hills and Mill Creek areas, repairing and/or replacing existing culverts, and constructing a detention basin along the northern boundary of the Site. Outstanding RA for the Mill Creek Addition is addressed under the ARWW&S OU RDU 6 remedy.

Figure 5.1 illustrates the areas where RA has been implemented and the remaining areas requiring RA. Table 5.1 summarizes the RA implemented to date and those remaining within the Mill Creek Addition. Additional details associated with implemented RA can be found in the document listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
406-08-467	*Final Remedial Action Construction Completion Report Subarea 6 (Mill Creek Addition)*	March 2001	Summarizes the 1998-1999 RA construction completed at the Mill Creek Subdivision consisting of engineered covers over contaminated soils, *in-situ* soil treatments, grading and waste consolidation, the installation storm water controls (interceptor channel and detention pond), and revegetation.

5.4 Community Soils OU

The CSOU remedy includes four main components: (1) Original / Phase 1 Residential Soils work (2002 through 2013); (2) Historic Railroad Beds and Commercial/Industrial Areas; (3) Phase 2 Residential Soils and Interior Dust work under the 2013 CS OU ROD Amendment work (2013 – 2019); and (4) Phase 3 Residential Soils work under the 2020 CS OU ESD (2020 to present). As shown on Figure 2.2, the CSOU addresses arsenic and lead contamination in residential areas within the communities of Anaconda and Opportunity, rural residential areas throughout the Site, commercial/industrial soils (arsenic) and abandoned railroad bed materials (visible waste) within the community of Anaconda. The status of the RD/RA activities within the four main components of the CSOU are summarized below.

5.4.1 Phase 1 CSOU Residential Soils

5.4.1.1 Summary of RD

The Phase 1 RD for residential soils included removing residential soils exhibiting arsenic concentrations exceeding 250 mg/kg, to a maximum depth of 18 inches. AR prepared and EPA approved the RD for CSOU Phase 1. The RD is presented in the following EPA-approved FDR/RAWP document.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
500-05-81	*CS OU Final Residential Soils Remedial Action Work Plan/Final Design Report*	July 19, 2002	Presents the design approach and basis for the CSOU residential soils design utilized within CSOU from 2002 through 2013.

5.4.1.2 Summary of RA

The RA required under the 1996 CSOU ROD encompassed cleanup of 350 residential properties. RA activities associated with the initial CSOU Residential Soils RA commenced on May 10, 2004, and were completed on August 26, 2010. Figures 5.2a through 5.2f illustrate the areas where RA has been implemented. Table 5.2 summarizes the actions completed through 2020. Additional details associated with implemented RA can be found in the document listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
500-08-407	*Final Community Soils Operable Unit (CS OU) Residential Soils Construction Completion Report*	May 9, 2014	Summarized the RA construction (soils removal up to depths of 18 inches) of approximately 350 residential yards within the community of Anaconda

5.4.2 CSOU Historic Railroad Beds and Commercial/Industrial Areas

5.4.2.1 Summary of RD

The RD applicable to historic railroad beds and commercial/industrial areas within the CSOU includes complete removal of historic railroad bed embankment and ballast materials (visible wastes), as well as removal of visible wastes observed in commercial/industrial areas located adjacent to the historic and active railroads. The RD applicable to commercial/industrial areas located adjacent to the historic railroad beds (containing no visible waste materials) includes complete removal of the soils to the depth at which action levels were exceeded, or to a maximum depth of 18 inches. The approved RD for this work is described in the document listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
500-05-82	*Final Historic Railroad Beds and Commercial/Industrial Areas Remedial Action Work Plan/Final Design Report*	October 12, 2005	Summarized the RD for historic railroad beds and commercial/industrial areas within the CS OU commercial/industrial areas located adjacent to the historic and active railroads.

5.4.2.2 Summary of RA

The RA associated with the CSOU Historic Railroad Beds and Commercial/Industrial Areas has been fully implemented. RA activities commenced on July 3, 2006, and were completed on November 23, 2011. Figures 5.2a through 5.2f illustrate the areas of work implemented. Table 5.2 summarizes the actions implemented through 2020. Additional details associated with implemented RA can be found in the document listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
500-08-406	*Final Community Soils Operable Unit (CS OU) Historic Railroad Beds and Commercial/Industrial Areas Construction Completion Report*	July 25, 2014	Summarized the RA for historic railroad beds and commercial/industrial areas within the CS OU including removal of historic railroad bed embankment, ballast materials (visible wastes), as well as removal of wastes exceeding action levels in commercial/industrial areas located adjacent to the historic and active railroads.

5.4.3 Phase 2 CSOU Residential Soils 2013 ROD Amendment Work

As described in Section 2, EPA issued a 2013 CSOU ROD Amendment. The 2013 CSOU ROD Amendment changes only those provisions of the original CSOU ROD that addressed residential soils; it did not modify remedies applicable to commercial/industrial areas and railroad beds within the CSOU.

The 2013 ROD Amendment added a cleanup level for lead in residential soils (400 mg/kg) and cleanup levels for arsenic and lead (250 mg/kg and 400 mg/kg, respectively) in accessible, interior residential dust and attic dust. Additionally, the 2013 CSOU ROD Amendment provides for expanding the CPMP to include lead in the local health education program.

The preferred RA alternatives identified in the 2013 CSOU ROD Amendment include the following:

- Conduct systematic soil sampling at those residences where existing (screening-level) lead data indicate the concentrations of lead greater than 400 mg/kg in soils;
- Conduct cleanup of residential soils having lead concentrations greater than 400 mg/kg to a maximum depth of 12 inches (except for gardens which have a maximum depth of 24 inches);
- Cleanup residential soils consistent with past residential arsenic cleanup (removal of contaminated soil and disposal in an approved WMA);
- Conduct interior residential dust and attic dust sampling when requested by landowners; and
- Cleanup interior dust (professional cleaning service) and attic dust (negative pressure dust removal/disposal followed by encapsulation) exceeding 250 mg/kg arsenic and/or 400 mg/kg lead.

5.4.3.1 Summary of Phase 2 RD

A new CSOU Residential Soils and Interior/Attic Dust RAWP/FDR was prepared by AR to address the requirements of the 2013 CSOU ROD Amendment to replace the original *CS OU Final Residential Soils Remedial Action Work Plan/Final Design Report*. The approved RD for the 2013 CSOU ROD Amendment requirements is described in the document listed in the table below. The associated RD logic was utilized within the CSOU over a span of 7 years (2013 through 2019).

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
500-05-83	*Final 2015 Community Soils Operable Unit (CS OU) Remedial Action Work Plan/Final Design Report*	August 11, 2015	Summarized the RD, as amended by the ROD Amendment for residential yards within the community of Anaconda beginning in 2013 through 2019.

5.4.3.2 Summary of Phase 2 RA

The RA associated with the Phase 2 CSOU RA work under the CSOU ROD Amendment has been fully implemented. RA activities commenced on June 13, 2016, and were completed on December 20, 2019. During the Phase 2 CSOU RA, approximately 1,730 residences in Anaconda and the surrounding rural areas were sampled and 1,021 yards where the concentrations for the yard components exceeded the 250-ppm residential use action level for arsenic or exceeded the 400-ppm residential use action level for lead in any depth interval were remediated. A total of 110 residential attics have been addressed. Figures 5.2a through 5.2f illustrate the areas of residential yard work implemented as of the end of 2020. Table 5.2 summarizes the actions implemented. Figure 5.2g

illustrates the status of Attic Dust RA activities through 2020. Additional RA details can be found in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
500-08-888	*Final 2016 Community Soils Operable Unit (CS OU) Residential Soils Remedial Action (RA) Construction Completion Report (CCR)*	December 4, 2019	Summarized the 2016 CSOU residential yard RA activities for 40 residential yards (16 in Anaconda, 19 in Opportunity and 5 regional yards) including removal of soils to the depth at which the residential arsenic and/or lead action level was exceeded, or to a maximum of 12 inches in earthen driveway and rock garden areas, to a maximum of 12 inches in lawn/garden areas, or to a maximum of 24 inches in garden soil areas.
500-08-887	*Final 2016 Community Soils Operable Unit (CS OU) Attic Dust Remedial Action (RA) Construction Completion Report (CCR)*	December 4, 2019	Summarized the 2016 CSOU attic RA activities addressing elevated levels of arsenic and lead in attic dust at 16 residential attics within the community of Anaconda.
500-08-906	*Final 2017 Community Soils Operable Unit (CS OU) Residential Soils Remedial Action (RA) Construction Completion Report (CCR)*	December 4, 2019	Summarized the 2017 CSOU residential yard RA activities for 318 residential yards (316 in Anaconda, 1 in Opportunity and 1 regional yard) including removal of soils to the depth at which the residential arsenic and/or lead action level was exceeded, or to a maximum of 12 inches in earthen driveway and rock garden areas, to a maximum of 12 inches in lawn/garden areas, or to a maximum of 24 inches in garden soil areas.
500-08-905	*Final 2017 Community Soils Operable Unit (CS OU) Attic Dust Remedial Action (RA) Construction Completion Report (CCR)*	January 12, 2021	Summarized the 2017 CSOU attic RA activities addressing elevated levels of arsenic and lead in attic dust at 25 residential attics within the community of Anaconda.
500-08-886	*Final 2018 Benny Goodman Park Residential Soils Remedial Action (RA) Construction Completion Report (CCR)*	January 19, 2021	Summarized the 2018 CSOU RA activities for Benny Goodman Park including excavation and disposal of approximately 10,000 cy of contaminated soils, soil backfill with clean soil, sod installation and aggregate material installation, constructing a new softball infield and removal of the existing underground sprinkler system.
500-08-907	*Final 2018 Community Soils Operable Unit (CS OU) Residential Soils Remedial Action (RA) Construction Completion Report (CCR)*	January 19, 2021	Summarized the 2018 CSOU residential yard RA activities for 325 residential yards (315 in Anaconda, 3 in Opportunity and 7 regional yards) including removal of soils to the depth at which the residential arsenic and/or lead action level was exceeded, or to a maximum of 12 inches in earthen driveway and rock garden areas, to a maximum of 12 inches in lawn/garden areas, or to a maximum of 24 inches in garden soil areas.

500-08-878	*Final 2018 Community Soils Operable Unit (CS OU) Attic Dust Remedial Action (RA) Construction Completion Report (CCR)*	January 15, 2021	Summarized the 2018 CSOU attic RA activities addressing elevated levels of arsenic and lead in attic dust at 34 residential attics within the community of Anaconda.
500-08-908	*Final 2019 Community Soils Operable Unit (CS OU) Residential Soils Remedial Action (RA) Construction Completion Report (CCR)*	January 20, 2021	Summarized the 2019 CSOU residential yard RA activities for 338 residential yards (331 in Anaconda, 1 in Opportunity and 6 regional yards) including removal of soils to the depth at which the residential arsenic and/or lead action level was exceeded, or to a maximum of 12 inches in earthen driveway and rock garden areas, to a maximum of 12 inches in lawn/garden areas, or to a maximum of 24 inches in garden soil areas.
500-08-879	*Final 2019/2020 Community Soils Operable Unit (CS OU) Attic Dust Remedial Action (RA) Construction Completion Report (CCR)*	April 30, 2021	Summarized the 2019-2020 CSOU attic RA activities addressing elevated levels of arsenic and lead in attic dust at 39 residential attics within the community of Anaconda.

5.4.4 Phase 3 CSOU Residential Soils

The 2017 CSOU ESD changed the maximum removal depths of residential soils and modified the 2013 ROD Amendment requirement of sampling and cleanup of interior dust to rely on a comprehensive health and education program, including an interior dust program, to address residual interior dust contamination in the living space for all residents within the Site. The 2020 CSOU ESD changed the residential soils sampling depth intervals and eliminated the use of area weighted averaging (AWA) to trigger cleanup of arsenic in residential soils. The 2020 CSOU ESD also clarified the definition of residential soils and the requirements for lead paint coordination. This RD logic has been utilized within the CSOU since the 2020 construction season.

5.4.4.1 Summary of Phase 3 RD

To address arsenic and lead contamination in residential areas within the communities of Anaconda and Opportunity, rural residential areas throughout the Site, and commercial/industrial soils (arsenic), the Phase 3 CSOU RD was presented in the document listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
500-05-762	*Final Community Soils Operable Unit (CSOU) Remedial Action Work Plan/Final Design Report*	June 12, 2020	Expanded the attic dust cleanup through a comprehensive attic dust abatement program, provided for the implementation of certain ICs contingencies if ADLC does not perform some or all the primary ICs in the future. Redefined the residential yard definition to be a maximum of 125 feet from the exterior of the residence unless a property or natural boundary is encountered at a distance less than 125 feet. Assigned the commercial/industrial action level of 500 mg/kg to commercial/industrial and unpaved parking lots within the community of Anaconda. Assigned a residential action level of 250 mg/kg arsenic and 400 mg/kg lead to all unpaved alleys within the community of Anaconda that have not already been remediated and limited the sampling of unpaved alleys and parking lots to the 0- to 6-inch interval.

5.4.4.2 Summary of Phase 3 RA

The RA associated with the Phase 3 CSOU RA is ongoing for both Residential Soils RA and Attic Dust RA. Residential Soils RA activities commenced on January 20, 2020, and are ongoing. Through the 2020 construction season, approximately 220 residences in Anaconda and the surrounding rural areas were sampled and 207 yards where the concentrations for the yard components exceeded the 250-ppm residential use action level for arsenic or exceeded the 400-ppm residential use action level for lead in any depth interval were remediated. ADLC, under the oversight of EPA, will perform future Phase 3 residential attic remediation, pursuant to the RCFSA. Figures 5.2a through 5.2f illustrate the areas where RA has been implemented as of the end of 2020. Table 5.2 summarizes the actions implemented. Figure 5.2g illustrates the status of Attic Dust RA activities through 2020. Additional details associated with implemented RA can be found in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
500-08-923	*Draft Final 2020 Community Soils Operable Unit (CS OU) Residential Soils Remedial Action (RA) Construction Completion Report (CCR)*	January 2022	Summarized the 2020 CSOU residential yard RA activities for 207 residential yards (198 in Anaconda, 1 in Opportunity and 8 regional yards) including removal of soils to the depth at which the residential arsenic and/or lead action level was exceeded, or to a maximum of 12 inches in earthen driveway and rock garden areas, to a maximum of 12 inches in lawn/garden areas, or to a maximum of 24 inches in garden soil areas.

500-08-879	*Final 2019/2020 Community Soils Operable Unit (CS OU) Attic Dust Remedial Action (RA) Construction Completion Report (CCR)*	April 30, 2021	Summarized the 2019-2020 CSOU attic RA activities addressing elevated levels of arsenic and lead in attic dust at 38 residential attics within the community of Anaconda.

5.5 Anaconda Regional Water, Waste, & Soils OU

The ARWW&S OU is a comprehensive OU that addresses soil, surface water, and groundwater contamination at the Site not addressed by other Site OUs. As described in Section 2, due to the large size of the ARWW&S OU, it has been separated into 15 smaller RDUs and 2 Expansion Areas to provide a more manageable approach for RD/RA. Figure 2.3 illustrates the location of each of the RDUs and Expansion Areas within the ARWW&S OU. The status of RD/RA activities within each RDU and Expansion Area are summarized in the following Subsections.

5.5.1 RDU 1 Stucky Ridge Uplands RD/RA Status

Pursuant to the settlement embodied within the Clark Fork River OU Consent Decree (Site Document Register No. 100-03-566), the State is responsible for RD, RA, and O&M activities required on State-owned portions of RDU 1. AR is responsible for all other portions. RD/RA in RDU 1 is ongoing as described below.

5.5.1.1 Summary of RD

RDU 1 Stucky Ridge Uplands includes approximately 3,900 acres of remedial design polygons. Approximately 2,300 acres of these polygons require implementation of RA (treatment via tillage, steep slope remediation), while the remaining approximately 1,600 acres do not require physical remediation (i.e., treatment) as they are rock outcrops, historic areas, previously reclaimed areas, NFA facilities, or well vegetated areas that may require only monitoring/weed spraying. Due to the large size of the Stucky Ridge RDU, it has been divided into four areas based on, but not limited to, topography, remedial action acreage, and drainages to implement and manage the RA more effectively. Approximately 145 acres of RDU 1 were previously remediated prior to the approval of the *RDU 1 Stucky Ridge Final Design Report/Remedial Action Work Plan* (discussed below) as part of demonstration projects implemented by AR and/or the Agencies. The RD for RDU 1 includes the construction of multiple engineered controls (i.e., stormwater ponds and channels) to control stormwater run-off to down-gradient receptors. In addition, as described in Section 5.5.18, supplemental surface water controls (i.e., BMPs, additional slope work, and engineered controls) have been included under the *ARWW&S OU Supplemental Surface Water Controls RD/RA Report* as components to the surface water remedy for the Site to address surface water quality improvements in select drainages within RDU 1. The approved RDU 1 RD is presented in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
601-05-513	*Remedial Design Unit 1 – Stucky Ridge Remedial Action Work Plan (RAWP)/Final Design Report (FDR) 2002 Stucky Ridge RA (portion of Stucky Ridge Area No. 4 RAWP) Uplands Vegetation*	July 22, 2002	Presented the remedial requirements, design criteria, data, areas subject to remediation and prescribed the remediation techniques to address impacted soils through in-situ treatment and steep slope remediation and minimize impacts to surface water for areas within the eastern portion of RDU 1 – Stucky Ridge on AR owned property.
601-05-21	*Remedial Design Unit 1 – Stucky Ridge Final Design Report (FDR)*	June 3, 2005	Presented the remedial requirements, design criteria, data, areas subject to remediation and prescribed the remediation techniques to address impacted soils via in-situ treatment, steep slope remediation, selective waste removal and minimize impacts to surface water via BMPs and engineered controls for areas within the eastern portion of RDU 1 – Stucky Ridge.
601-05-22	*Remedial Design Unit 1 – Stucky Ridge Remedial Action Work Plan (RAWP)*	June 3, 2005	Presented the remedial methods and procedures for remediation of impacted soils areas within RDU 1 – Stucky Ridge to comply with the ARWWS ROD.
618-24-46	*Remedial Design Unit 1 – Stucky Ridge Individual Site Investigation Report (ISIR) PRLU OWSR-014.08*	May 13, 2014	Presented the data and evaluation of data against site cleanup levels supporting a No Action remedy for a 23-acre motorcycle track facility operated by the Anaconda Motocross Association, Inc. located south of Lost Creek Road within the north-eastern portion of RDU 1 – Stucky Ridge.
618-24-910	*Remedial Design Unit 1 – Stucky Ridge Facilities Sampling Individual Site Investigation Report (ISIR) Lost Creek Raceway Salvage Yard (OWSR-005)*	May 28, 2015	Summarized the remedial design data supporting a No Action remedy for a designated privately owned auto salvage yard facility within the eastern portion of RDU 1 – Stucky Ridge.

5.5.1.2 Summary of RA

RA construction within RDU 1 is ongoing. AR has remediated approximately 1,200 acres within RDU 1 through various projects. Under the Montana NRD program, the State addressed approximately 480 additional acres of remediation on the State-owned parcel within RDU 1. Reclamation of the East Knob Borrow Area, which is represented by PRLU OWSR-010.02, is being completed under MT DEQ Opencut Permit #682 and Amendment #ARC-002. Additional details associated with the implemented RA within RDU 1 can be found in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
NA	1994 Stucky Ridge Revegetation Project	NA	Approximately 85 acres were disc plowed to a depth of 12 inches. Twenty to forty percent of the area was amended with lime, the site was fertilized, and straw mulch was incorporated. The site was drill seeded in the spring of 1995. The areas where lime was not applied in 1994 were limed to a depth of 12 inches in the fall of 1996. These areas were subsequently approved by the Agencies as previously reclaimed in the June 2005 RDU 1 FDR/RAWP and subsequently determined to have met vegetation and site stability standards by EPA in 2012.
601-08-514	*Remedial Design Unit (RDU) 1 – Stucky Ridge 1999/2000 Stucky Ridge/Fertilizer Demonstration Project Interim Construction Completion Report (CCR) (Work Plan for Developing Growth Media Criteria for Remediation)*	July 26, 2000	Summarized the RA activities implemented in 1999 by AR to provide additional evaluation of available reclamation techniques prior to full-scale implementation of remedies at the ARWW&S OU. The three types of demonstration projects evaluated included: • 60-acre Tilling Demonstration Project (T6 and T12) with variable lime amendment rates to evaluate dilution effects at both depths; • 6-acre Fertilizer Demonstration Study (FT); and • 24-acre Vegetation Improvement (VI) Demonstration Study. The tilling demonstration plot areas were evaluated by the EPA and were determined to have met vegetation and site stability performance standards in 2012. The VI plots were not approved and subject to additional RA within RDU 1.
601-08-253	*Remedial Design Unit (RDU) 1 – Stucky Ridge Engineered Storm Water Runoff Controls (ESCR) Construction Completion Report (CCR)*	August 26, 2005	Summarized the RA activities completed by AR for engineered storm water controls (approximately 2.4 cumulative miles of storm water channel and sediment ponds) to collect storm water runoff and sediment from the east end of Stucky Ridge. RA consisted of the construction of three intercept channels: North Intercept Channel (NIC), South Intercept Channel (SIC), and East Intercept Channel (EIC); three smaller channels: LC5A, LC6, and LC6A; and two sediment ponds: South Sediment Pond (SSP) and North Sediment Pond (NSP). Revegetation of 56 acres of disturbed area was completed in April 2005. Follow-up punch-list work was performed in 2007 to address areas deferred during the 2002 RA and remnant areas associated with the construction of the engineered storm water controls in 2004/2005. Approximately 41.1 acres of tillage adjacent to the storm water controls were identified along with areas of good vegetation to be preserved and areas requiring BMP maintenance or installation. The punch-list items were completed in 2007

601-08-11	*Remedial Design Unit (RDU) 1 – Stucky Ridge 2002 Stucky Ridge RA Construction Completion Report (CCR)*	February 2, 2006	Summarized the RA for approximately 230 acres of AR-owned property on the east end of RDU 1 including *in-situ* treatment with lime, steep slope remediation, storm water BMPs and revegetation. Approximately 25% of the area constituted No Action and M-WV areas requiring no active RA. The 2002 RA areas were evaluated by the EPA and were determined to have met vegetation and site stability performance standards in 2012.
	Final Construction Completion Report (CCR), Anaconda Smelter NPL Site, Anaconda Regional Water, Waste & Soils Operable Unit, Remedial Design Unit (RDU) 1, Stucky Ridge Uplands, prepared by the NRDP	January 29, 2016	Summarized the RA initiated in 2010 by the NRDP for approximately 480 acres of State-owned property. The majority of the State-owned property has a T12 remedy with lime amendment prescribed under the Final RDU 1 - Stucky Ridge FDR/RAWP and the remaining areas consist of steep slope reclamation, BMPs, and No-Action areas primarily located along the parcel boundary and within interior drainages. The RA was completed in 2014 and monitoring and maintenance obligations are the responsibility of the State.
401-08-466	*Final Remedial Action Completion Report, Anaconda Smelter NPL Site, Old Works/East Anaconda Development Area OU Subareas 1 and 2*	April 1, 1998	Summarized the 1994-1996 RA activities related to remediation of impacted soils and wastes within OW/EADA Subareas 1 and 2 including the construction of the OWGC.
404-08-576	*Anaconda Landfill Closure, Anaconda Mt, Deer Lodge County*	March 1, 1996	Summarized the reclamation activities (Type A cap installation) completed by ADLC for closure of the former Anaconda Landfill (approximately 50 acres). This area was subsequently approved by the Agencies as previously reclaimed in the June 2005 RDU 1 FDR/RAWP and subsequently determined to have met vegetation and site stability standards by EPA in 2010.
601-08-929	*Remedial Design Unit (RDU) 1 – Stucky Ridge 2018-2020 RA Construction Completion Report (CCR)*	January 2022	Summarizes construction activities performed during completion of the 2018-2020 RDU 1 RA over approximately 795 acres impacted by aerial deposition. RA included *in-situ* treatment, steep slope remediation, storm water BMPs, and revegetation.

Figure 5.3 illustrates the areas of work completed, the NRD project boundary, and the remaining areas requiring RA. Table 5.3 summarizes the actions completed to date within RDU 1.

5.5.2 RDU 2 Lost Creek Uplands RD/RA Status

RD activities for RDU 2 have been completed as described below.

5.5.2.1 Summary of RD

RDU 2 Lost Creek Uplands includes approximately 1,500 acres of remedial design polygons. Approximately 850 acres of these polygons require implementation of RA (i.e., treatment via tillage, steep slope remediation) while the remaining 650 acres do not require physical remediation (i.e., treatment) as they are rock outcrops, NFA facilities, or well vegetated areas that may require only monitoring/weed spraying. The RD for RDU 2 includes the construction of multiple engineered controls (i.e., stormwater ponds and channels) to control stormwater run-off to down-gradient receptors. In addition, as described in Section 5.5.18, supplemental surface water controls (i.e., BMPs, additional slope work, and engineered controls) have been added under the *ARWW&S OU Supplemental Surface Water Controls RD/RA Report* as components to the surface water remedy for the Site to address surface water quality improvements in select drainages within RDU 2. The approved RDU 2 RD is presented in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
602-05-24	*Remedial Design Unit (RDU) 2 – Lost Creek Final Design Report (FDR)*	June 7, 2005	Presented the remedial requirements, design criteria, data, areas subject to remediation and prescribed the remediation techniques to address impacted soils via in-situ treatment, steep slope remediation, selective waste removal and minimize impacts to surface water via BMPs and engineered controls for areas within RDU 2 – Lost Creek.
602-05-23	*Remedial Design Unit (RDU) 2 – Lost Creek Uplands Final Remedial Action Work Plan (RAWP)*	June 7 2005	Presented the remedial methods and procedures for remediation of impacted soils areas within RDU 2 – Lost Creek to comply with the ARWWS ROD.
618-24-65	*Remedial Design Unit (RDU) 2 – Lost Creek Uplands Individual Site Investigation Report (ISIR) PRLU LTCK-017.01*	May 12, 2014	Presented the investigation results from a privately owned gravel pit/disturbance located west of Galen Road and north of Lost Creek Road.
618-06-51	*Remedial Design Unit (RDU) 2 – Lost Creek Uplands Individual Site Work Plan (ISWP) PRLU LTCK-002.11 & LTCK-002.13*	May 28, 2015	Presented the remedial requirements for areas utilized for ranching/calving operations and a privately-owned junk yard located north of Lost Creek Road.

5.5.2.2 Summary of RA

As of 2020, no RA has been implemented within RDU 2, as illustrated on Figure 5.4 and summarized in Table 5.4.

5.5.3 RDU 3 Smelter Hill Uplands RD/RA Status

RD/RA in RDU 3 is ongoing as described below.

5.5.3.1 Summary of RD

RDU 3 Smelter Hill Uplands includes approximately 3,350 acres of remedial design polygons. Approximately 1,720 acres of these polygons require implementation of RA (i.e., treatment via tillage, steep slope remediation) while the remaining 1,630 do not require physical remediation (i.e., treatment) as they are rock outcrops, previously reclaimed areas, NFA facilities, or well vegetated areas that may require only monitoring/weed spraying. The design for RDU 3 includes the construction of multiple engineered controls (i.e., stormwater ponds and channels) to control stormwater run-off to down-gradient receptors. In addition, as described in Section 5.5.18, supplemental surface water controls (i.e., BMPs, additional slope work, and engineered controls) have been added under the *ARWW&S OU Supplemental Surface Water Controls RD/RA Report* as components to the surface water remedy for the Site to address surface water quality improvements in select drainages with RDU 3. The approved RD is presented in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
603-05-26	*Remedial Design Unit (RDU) 3 – Smelter Hill Uplands Draft Final Design Report (FDR)*	July 26, 2013	Presented the remedial requirements, design criteria, data, areas subject to remediation and prescribed the remediation techniques to address impacted soils via *in-situ* treatment, steep slope remediation, selective waste removal and minimize impacts to surface water via BMPs and engineered controls for areas within RDU 3.
603-05-25	*Remedial Design Unit (RDU) 3 – Smelter Hill Uplands Draft Final Remedial Action Work Plan (RAWP)*	July 26, 2013	Presented the remedial methods and procedures for remediation of impacted soils areas within RDU 3 to comply with the ARWW&S ROD.
603-05-286	*Draft Final Smelter Hill Uplands Remedial Design Unit (RDU) 3 Final Design Report (FDR) Appendix B.5 Engineered Storm Water Controls Plan (ESWCP) Addendum 2 - Birch Street and AFFCO Gulch Sediment Controls Ponds*	April 25, 2016	Presented the remedial requirements, design criteria, data, areas subject to remediation and prescribed the remediation to address surface water erosion from impacted soils through the design of engineered storm water controls consisting of sedimentation ponds located within Birch Gulch and AFFCO Gulch.

618-24-48	*Remedial Design Unit (RDU) 3 – Smelter Hill Uplands Individual Site Investigation Report (ISIR) PRLU SMHL-028*	May 16, 2014	Presented the remedial investigation results for a privately-owned auto salvage yard southeast of Anaconda supporting a No Action remedy.
618-06-66	*Remedial Design Unit (RDU) 3 – Smelter Hill Uplands Individual Site Work Plan (ISWP) PRLU SMHL-055.06 & .07*	June 13, 2014	Presented the remedial approach and RA requirements for two privately-owned gravel pits/disturbance areas within the Aspen Hills subdivisions.
618-06-50	*Remedial Design Unit (RDU) 3 – Smelter Hill Uplands Individual Site Work Plan (ISWP) AFFCO Facility*	November 3, 2017	Presented the remedial approach and RA requirements for within a metal fabrication facility situated between the community of Anaconda and the RDU 3 uplands. .

5.5.3.2 Summary of RA

As of 2020, limited RA has been implemented within RDU 3 as illustrated on Figure 5.5. RDU 3 RA performed to date is summarized in Table 5.5. In addition, both the Birch Gulch and AFFCO Gulch Sediment Ponds were constructed in 2016 and 2017, respectively. Additional details associated with the implemented RA within RDU 3 can be found in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
604-08-375	*Remedial Design Unit (RDU) 4 – Anaconda Ponds Nazer Gulch Debris Removal Construction Completion Report (CCR)*	August 3, 2005	Summarized the RA construction for impacted soils within Nazer Gulch debris removal area including debris disposal within the Anaconda Ponds, and reclamation of the Nazer Gulch drainage including. engineered controls, tillage, constructing dozer basins in steep slope areas, planting of trees and shrubs, and seeding.
603-08-749	*Final Smelter Hill Uplands Remedial Design Unit (RDU) 3 Birch Gulch Sediment Pond Construction Completion Report (CCR)*	March 7, 2018	Summarized the 2016-2017 RA construction completed to construct the Birch Gulch Sedimentation Pond.
603-08-742	*Draft Final Smelter Hill Uplands Remedial Design Unit (RDU) 3 AFFCO Gulch Sediment Pond Construction Completion Report (CCR)*	June 27, 2019	Summarized the 2017-2018 RA construction completed to construct the AFFCO Gulch Sedimentation Pond.

5.5.4 RDU 4 Anaconda Ponds RD/RA Status

RD/RA in RDU 4 is substantially complete, as described below, and the majority of the RDU is in the LTIM Phase, as described in Section 9.0.

5.5.4.1 Summary of RD

The RD for RDU 4 is presented in the document listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
604-05-409, 604-05-458, 604-05-459	*Final Anaconda Ponds Remedial Design Unit (RDU) 4 Remedial Action Work Plan/Final Design Report*	November 16, 2000	Presented the remedial requirements, design criteria, data, areas subject to remediation and prescribed the remediation techniques to address 480 acres of tailings consisting of historical preservation, engineered storm water controls, various engineered covers, and revegetation.

5.5.4.2 Summary of RA

RA construction for approximately 700 acres associated with Anaconda Ponds RDU 4 was implemented from September 25, 2000, through May 16, 2002, under the approved *Anaconda Ponds Remedial Design Unit RAWP/FDR*, as illustrated on Figure 5.6 and summarized in Table 5.6. Additional details associated with these remediated areas can be found in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
604-08-217	*Final Anaconda Ponds Remedial Design Unit (RDU) 4 Anaconda Ponds Remedial Action Construction Completion Report (CCR)*	March 1, 2005	Summarized the 2000-2002 RA construction of the Anaconda Ponds consisting of borrow development, haul road construction, tailings surface grading, construction of various engineered covers, historic preservation of decant structures, and revegetation.
604-08-301	*Final Anaconda Ponds Remedial Design Unit (RDU) 4 Storm Water Runoff Controls Construction Completion Report (CCR)*	March 2005	Summarized the 2000-2002 RA construction of the Anaconda Ponds consisting of storm water runoff controls for the perimeter of the Anaconda Ponds (SAP and NAP channels).
604-08-375	*Final Anaconda Ponds Remedial Design Unit (RDU) 4 Nazer Gulch Debris Removal Construction Completion Report (CCR)*	August 3, 2005	Summarized the RA construction for soils within Nazer Gulch debris removal area including debris disposal within Anaconda, and reclamation of the Nazer Gulch drainage, including engineered controls, tillage, constructing dozer basins in steep slope areas, planting of trees and shrubs, and seeding.

604-08-368	*Final Anaconda Ponds Remedial Design Unit (RDU) 4 Dike Slope Repair Project Construction Completion Report (CCR)*	February 8, 2005	Summarized the 2001-2002 RA construction to repair areas of the Anaconda Ponds dike slopes for erosion rills and poor vegetation. Work consisted of additional engineered cover soil placement and revegetation.

Figure 5.6 illustrates the remaining RDU 4 area requiring RA (West Facing Dike), which will be completed in conjunction with RA activities for the MGS Pile described in Section 5.5.12.

5.5.5 RDU 5 – Railroads/Blue Lagoon RD/RA Status

RD/RA in RDU 5 is substantially complete, as described below, and the majority of the RDU is in the monitoring and maintenance stage.

5.5.5.1 Summary of RD

The RD for the approximately 16 miles of rail grade encompassed within RDU 5 has been divided into two separate subsections, the East Portion and the West Portion. The East Portion of RDU 5 has two PRPs (i.e., AR and RARUS). The RDU 5 East section includes the Active Railroad generally located in a relatively undeveloped setting and includes the section of railroad line from the Streamside Tailings (SST) OU boundary near Silver Bow Creek west to the East Anaconda Yards and includes the following main work areas: Mill and Willow Creek trestles, Blue Lagoon, Son of Blue Lagoon, Mill Creek Flood Irrigation Area, and a portion of the Yellow Ditch. The West Portion of RDU 5 has two PRPs (i.e., AR and RARUS). The RDU 5 West section addresses the portion of the RARUS railroad that extends from the East Anaconda Yards westward to the West Anaconda Yard and the West Valley Spur, a 4.7-mile segment that leads from the West Anaconda Yard to North Cable Road west of Anaconda. These lines are located within residential, commercial/industrial, and open space/recreational areas, and include the following main work areas: East Anaconda Yards, West Anaconda Yards, mainline through the Town of Anaconda, and West Valley line.

Within each of these two areas (East and West) there are several Agency approved RAWP/FDRs, which are listed in the table.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
605-05-364	*Final Remedial Design Unit (RDU) 5 Anaconda Active Railroad Beds Remedial Action Work Plan/Final Design Report (RAWP/FDR)*	September 19, 2003	Presented the remedial requirements, design criteria, data, areas subject to remediation and prescribed the remediation for the Active Railroad Beds (classified as a DD) from the Anaconda city limits from at the East Anaconda Yard westward to the West Anaconda Yard including the Brown Spur from the West Anaconda Yard to the Lime Quarry west of Anaconda. RD generally includes engineered cover over the railroad beds to prevent direct contact with and reduce sediment transport.

605-05-363	*Final Remedial Design Unit (RDU) 5 In-Town Remedial Action Work Plan (RAWP)*	March 19, 2008	Presented the remedial requirements, design criteria, data, areas subject to remediation and prescribed the remediation for the Active Railroad Beds (classified as a DD) from the East Anaconda Yard westward to the West Anaconda Yard (does not include rail yards, West Line and RDU 5 East Portion). RD includes engineered cover (aggregate) over the railroad beds to prevent direct contact with and reduce sediment transport.
605-05-29	*Final Remedial Design Unit (RDU) 5 East Portion Active Railroad/Blue Lagoons Remedial Action Work Plan/Final Design Report (RAWP/FDR)*	August 3, 2007	Presented the remedial requirements, design criteria, data, areas subject to remediation and prescribed the remediation for the Active Railroad Beds (classified as a DD) from the east end of the East Anaconda Yard to Fairmont Road and includes stream crossing at Mill and Willow Creeks, a portion of the Yellow Ditch, the Blue Lagoon and Washout, Son of Blue Lagoon, and Mill Creek Flood Irrigation Area. RD generally includes waste removal/consolidation and backfill, surface water controls, and revegetation for areas outside of the active railroad track.
605-05-871	*Draft Final Remedial Design Unit (RDU) 5 East Portion Active Railroad/ Blue Lagoons Remedial Action Work Plan/Final Design Report (RAWP/FDR) – Addendum 1: Mill Creek & Willow Creek Railroad Trestle Crossings Removal and Replacement Design*	January 31, 2019	Presented the remedial requirements, design criteria, data, areas subject to remediation and prescribed the remediation for the Mill and Willow Creek Trestle Crossings (classified as a DD). RD includes removing both trestle crossings, impacted soils and replacing with corrugated metal, open-bottom span structures and clean fill materials.

5.5.5.2 Summary of RA

RA within RDU 5 has been implemented except for work on an approximate 4-acre parcel at the East Anaconda Yards. Figure 5.7 illustrates the various major work areas within RDU 5, and Table 5.7 summarizes the RA that has been implemented within each of these areas to date. Additional details associated with the implemented RA within RDU 5 can be found in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
605-08-257	*Final RDU 5 In-Town Railroad RA Construction Completion Report (CCR)*	December 4, 2013	Summarized the RA construction for the active railroad line through Anaconda including engineered cover placement, surface water controls and waste removal and consolidation.

605-08-463	*Final Remedial Design Unit (RDU) 5 West Valley Remedial Action (RA) Montana Department of Transportation Transfer Section Construction Completion Report (CCR)*	June 10, 2014	Summarized the RA construction for the abandoned West Valley Line from west of Anaconda to the Lime Quarry and included waste removal, consolidation, and revegetation. The property was transferred to MDT.
605-08-461	*Final Remedial Design Unit (RDU) 5 West Valley Remedial Action (RA) Construction Completion Report (CCR)*	June 10, 2014	Summarized the RA construction for the abandoned West Valley Line from west of Anaconda to the Lime Quarry and included waste removal, consolidation, and revegetation.
605-08-417	*Final Remedial Design Unit (RDU) 5 West Anaconda Yard 2010/2011 Remedial Action (RA) Construction Completion Report (CCR)*	June 6, 2014	Summarized the West Anaconda Yards construction project completed in 2011 and included the RA construction for the West Anaconda Yards, an active switching yard along the Active Railroad line through the Town of Anaconda including engineered cover construction, and waste consolidation.
605-08-596	*Draft Final Remedial Design Unit (RDU) 5 East Anaconda Yards Individual Site Work Plan (ISWP) South Parcel Construction Completion Report (CCR)*	February 28, 2014	Summarized the East Anaconda Yard South Parcel project RA completed in 2008 and included the RA construction for the 4-acre South Parcel located adjacent to the East Anaconda Yards. The South Parcel was completed to facilitate construction of the Anderson rail car cleaning facility and two new rail lines and included engineered cover construction, storm water controls and waste consolidation.
605-08-488	*Final Remedial Design Unit (RDU) 5 Son of Blue Lagoon 2012 Remedial Action (RA) Railroad and Private Property Construction Completion Report (CCR)*	April 15, 2014	Summarized the Son of Blue Lagoon project completed in 2012 and included the RA construction for the Son of Blue Lagoon by removing waste material and armoring the Active Railroad line that runs through the project area and constructing storm water controls.
605-08-500	*Final Remedial Design Unit (RDU) 5 Mill Creek Irrigation Site Remedial Action (RA) Construction Completion Report (CCR)*	April 18, 2014	Summarized the Mill Creek Flood Irrigation project completed in 2012 and included the RA construction for the Mill Creek Flood Irrigation Area by select waste removal, grading, and installing water control ditches and headgate structures to control irrigation water and prevent ponding against the railroad embankment.
605-08-489	*Final Remedial Design Unit (RDU) 5 Blue Lagoon 2012/2013 Remedial Action (RA) Railroad and Private Construction Completion Report (CCR)*	March 16, 2015	Summarized the Blue Lagoon project completed in 2013 and included the RA construction for the Blue Lagoon by removing waste material within the railroad embankment and immediately downgradient of the railroad embankment, reconstructing the railroad embankment with clean fill material and constructing storm water controls.

605-08-746	*Final Remedial Design Unit (RDU) 5/9 Yellow Ditch Removal Remedial Action (RA) Construction Completion Report (CCR)*	March 16, 2018	Summarized the Yellow Ditch project completed in 2014-2015 and included the RA construction for the Yellow Ditch by removing waste material backfilling with clean fill material and revegetation.
605-08-745	*Final Remedial Design Unit (RDU) 5 Blue Lagoon Washout and Upland Treatments Remedial Action (RA) Construction Completion Report (CCR)*	March 19, 2018	Summarized the Blue Lagoon Washout project completed in 2015 and included the RA construction for the Blue Lagoon Washout by removing waste material backfilling with clean fill material, *in-situ* treatments, and revegetation.
605-08-775	*Final Remedial Design Unit (RDU) 5 Mill Creek and Willow Creek Railroad Trestle Crossings Removal and Replacement Construction Completion Report (CCR)*	February 23, 2021	Summarized the Mill and Willow Creek Railroad Trestle Crossings Removal and Replacement project completed in 2019 and included removing both trestle crossings, impacted soils and replacing with corrugated metal, open-bottom span structures and clean fill materials.

5.5.6 RDU 6 – South Opportunity Uplands RD/RA Status

RD/RA in RDU 6 is ongoing as described below.

5.5.6.1 Summary of RD

RDU 6 South Opportunity Uplands includes approximately 1,000 acres of remedial design polygons. Approximately 920 acres of these polygons require implementation of RA (e.g., treatment via tillage), while the remaining 97 do not require physical remediation (i.e., treatment) as they are NFA facilities or well vegetated areas that may require only monitoring/weed spraying. The approved RD for RDU 6 is presented in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
606-05-32	*Remedial Design Unit (RDU) 6 – South Opportunity Final Design Report (FDR)*	April 12, 2006	Presented the remedial requirements, design criteria, data, areas subject to remediation and prescribed the remediation techniques to address impacted soils through *in-situ* treatment and selective removal to minimize impacts to Mill Creek.
606-05-31	*Remedial Design Unit (RDU) 6 – South Opportunity Uplands Final Remedial Action Work Plan (RAWP)*	April 12, 2006	Presented the remedial methods and procedures for remediation of impacted soils areas within RDU 6 – South Opportunity Uplands to comply with the ARWWS ROD.
618-06-59	*Remedial Design Unit (RDU) 6 – South Opportunity Uplands Final Individual Site Work Plan (ISWP) PRLU SHOP-11.01*	March 13 2014	Summarized the data and remedial methods and approach for approximately 150 acres within RDU 6, a portion of which consisted of active gravel mining operations under Open Cut Permits and a portion slated for expansion of the gravel mining activity.

618-06-67	*Remedial Design Unit (RDU) 6 – South Opportunity Uplands Final Individual Site Work Plan (ISWP) PRLU SHOP-008*	June 13, 2014	Summarized the data and remedial methods and approach for an approximately 10-acre former borrow area adjacent to MT Highway 1 within RDU 6.
606-06-896	*Remedial Design Unit (RDU) 6 – South Opportunity Uplands Final Individual Site Work Plan (ISWP) S&N Facility*	Dec 8, 2017	Summarized the data and remedial methods and approach for an approximately 150-acre parcel within RDU 6, approximately 60 acres comprise active gravel mining operations while the remaining approximately 90 acres are slated for expansion of operations.

5.5.6.2 Summary of RA

RA construction within RDU 6 is ongoing. Approximately 800 acres have been remediated as of 2020. Figure 5.8 illustrates the areas where RA has been implemented and the remaining areas requiring/undergoing RA, and Table 5.8 summarizes the actions completed to date within RDU 6. Additional details associated with the implemented RA within RDU 6 can be found in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
606-08-107	*Remedial Design Unit (RDU) 6 – South Opportunity Uplands Mill Creek Road RA Construction Completion Report (CCR)*	January 29, 2010	Summarized the 2008 RA construction of approximately 195 acres within RDU 6 and a portion of RDU 14 including approximately 150 acres within RDU 6 and included stripping of approximately 100 acres, *in-situ* soil treatment of approximately 48 acres and revegetation. Additional acreage along the east Anaconda Ponds dike were remediated with this project.
606-08-288	*Remedial Design Unit (RDU) 6 – South Opportunity Uplands Mill Creek Substation RA Construction Completion Report (CCR)*	May 2011	Summarized the RA construction of approximately 58 acres within RDU 6 that were addressed as part of the Phase 1 (2007) and Phase 2 (2009) Mill Creek Substation RA Project with some of the acreage receiving both stripping and *in-situ* treatment. RA included stripping of approximately 37 acres, *in-situ* soil treatment of approximately 43 acres and revegetation of approximately 61 acres. Approximately 20 acres within the facility area of the substation was capped with gravel since vegetation was not desirable.
606-08-289	*Remedial Design Unit (RDU) 6 – South Opportunity Uplands Draft Mill Creek Substation Construction Completion Report (CCR) Addendum 1 (North Portion of the Dave Gates Generation Station)*	January 13, 2012	Summarized the 2011 RA construction of approximately 18 acres within RDU 6 addressed as part of the Phase 3 of the Mill Creek Substation RA. RA included approximately 16.5 acres stripped and tilled with an additional 1.3 acres along the south fence and under the power lines harrowed and/or hand raked prior to seeding.

606-08-894	*Remedial Design Unit (RDU) 6 – South Opportunity Uplands Remaining Portions of RDU6 2018-2020 RA Construction Completion Report (CCR)*	July 9, 2021	Summarizes construction activities performed during completion of the 2018-2020 RDU 6 RA over approximately 520 acres impacted by aerial and fluvial deposition. RA construction included in-situ treatment, selective removal and backfill and revegetation.

5.5.7 RDU 7 – North Opportunity Uplands RD/RA Status

RD/RA in RDU 7 has been fully implemented, as described below, and the RDU is in the monitoring and maintenance stage.

5.5.7.1 Summary of RD

RDU 7 North Opportunity Uplands includes approximately 800 acres of remedial design polygons. The approved RD for RDU 7 is presented in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
607-05-33	*Remedial Design Unit (RDU) 7 – North Opportunity Uplands Final Design Report (FDR)*	May 1, 2008	Presented the remedial requirements, design criteria, data, areas subject to remediation and prescribed the remediation techniques to address impacted soils through in-situ treatment and removal/consolidation to minimize down-gradient impacts to surface water.
606-05-34	*Remedial Design Unit (RDU) 7 – North Opportunity Uplands Final Remedial Action Work Plan (RAWP)*	May 1, 2008	Presented the remedial methods and procedures for remediation of impacted soils areas within RDU 7 – North Opportunity Uplands to comply with the ARWW&S ROD.

5.5.7.2 Summary of RA

RA construction for approximately 651 acres within RDU 7 was implemented in 2009 and 2010, as illustrated on Figure 5.9 and summarized in Table 5.9. RA activities associated with RDU 7 also included remedial maintenance activities at the ADLC Airport. Additional details associated with the implemented RA within RDU 7 can be found in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
607-08-491	*Remedial Design Unit (RDU) 7 – North Opportunity 2009/2010 RA Construction Completion Report (CCR)*	April 24, 2012	Summarized the 2008 through 2010 RA construction within RDU 7. The RDU 7 RA was divided into two areas bisected by Warm Springs Creek. The south portion (156 acres) is located north of Highway 48, east of Galen Road and south of Warm Springs Creek including a 13-acre parcel that was remediated for the construction of the new Community, Counseling and Correctional Services (CCCS) facility. The north portion (499 acres) of the remedial area is east of Galen Road, north of Warm Springs Creek, south of Lost Creek and includes a portion of the Anaconda-Deer Lodge Regional Airport. The RA area included: 1. Stripping and consolidation of highly impacted soils; 2. In-situ soil treatment with the addition of amendments; 3. Cover soil placement; 4. Revegetation of treated soils; and, 5. Development of storm water controls.
607-15-911	*ADLC Airport Maintenance Summary Report*	July 22, 2020	Summarized the 2019 RA construction for approximately 10 acres within the ADLC airport including excavation, consolidation and backfill of excavated areas and revegetation.

5.5.8 RDU 8 - Opportunity Ponds RD/RA Status

RD/RA in RDU 8 has been substantially implemented, as described below, and the majority of the RDU is in the monitoring and maintenance stage.

5.5.8.1 Summary of RD

RDU 8 Opportunity Ponds RD addresses approximately 7,400 acres of impacted soils and waste areas within and adjacent to the Opportunity Ponds WMA. The approved RD is presented in the documents listed in the table below. In addition, the RDU 8 remedy may include construction of a new waste area cell for disposal of materials excavated and transported from the Rocker Timber Framing and Treating Plant Operable Unit (Rocker OU) of the Silver Bow Creek/Butte Area NPL Site by AR or the State. If a new waste area cell is constructed for disposal of Rocker OU materials, it will be done in accordance with a RAWP / FDR prepared by AR and/or DEQ and approved by EPA.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
608-05-36	*Final Opportunity Ponds Remedial Design Unit (RDU) 8 Triangle Waste Area Remedial Action Work Plan/Final Design Report (RAWP/FDR)*	May 24, 2002	Presented the remedial requirements, design criteria, data, areas subject to remediation and prescribed the remediation techniques to address 400 acres of Waste Left-in-Place (WLIP) that were later incorporated into the Smelter Hill/Opportunity Ponds WMA in the 2011 ARWW&S OU ROD Amendment through storm water runoff/run-on controls, various engineered covers and revegetation.
608-05-121	*Final Opportunity Ponds Remedial Design Unit (RDU) 8 A-Cells Area Remedial Action Work Plan/Final Design Report (RAWP/FDR)*	November 26, 2002	Presented the remedial requirements, design criteria, data, areas subject to remediation and prescribed the remediation techniques to address 170 acres of wastes and impacted soils through storm water runoff/run-on controls, various engineered covers, *in-situ* treatments and revegetation.
608-05-413	*Final Opportunity Ponds RDU 8 Triangle Waste Area Remedial Action Work Plan/Final Design Report (RAWP/FDR) North WLIP Addendum*	May 1, 2003	Presented the remedial requirements, design criteria, data, areas subject to remediation and prescribed the remediation techniques to address 115 acres of the Northern WLIP (also later incorporated into the Smelter Hill/Opportunity Ponds WMA) through storm water runoff/run-on controls, various engineered covers and revegetation.
608-05-303	*Final Opportunity Ponds Remedial Design Unit (RDU) 8 A-Cells Area Remedial Action Work Plan/Final Design Report (RAWP/FDR) A.9 Cell Addendum*	October 21, 2003	Presented the remedial requirements, design criteria, data, areas subject to remediation and prescribed the remediation techniques to address 84 acres of the A-Cells through storm water runoff/run-on controls, various engineered covers, and revegetation.
608-05-367	*Final Opportunity Ponds Remedial Design Unit (RDU) 8 Phase I Haul Road Construction Remedial Action Work Plan (RAWP)*	April 29, 2004	Presented the remedial requirements, design criteria, and data to provide the primary infrastructure necessary to facilitate the placement of Milltown Reservoir Sediments, Streamside tailings and other engineered covers within the Opportunity Ponds by constructing haul road networks within the C2 Cells and portions of B2-Cells of the Opportunity Ponds along with the construction of engineered cover in the C2.1 Cell.

608-05-376, 608-05-377, 608-05-416, 608-05-378, 608-05-379, 608-05-381, 608-05-382	*Final Opportunity Ponds Remedial Design Unit (RDU) 8 Remedial Action Work Plan/Final Design Report Volumes I through VI*	January 20, 2006 January 24, 2006 November 7, 2003 April 2, 2004 November 19, 2004 October 22, 2004 April 27, 2004	Presented the remedial requirements, design criteria, data, areas subject to remediation and prescribed the remediation techniques for the entire Opportunity Ponds through waste and impacted soils stripping and consolidation, interior and exterior storm water runoff controls, borrow development, various engineered covers, in-*situ* treatments, wetlands creation and enhancement, groundwater and surface water management system, and revegetation.
608-05-317	*Final Opportunity Ponds Remedial Design Unit (RDU) 8 Milltown Sediments Remedial Action Work Plan/Final Design Report (RAWP/FDR)*	March 2, 2012	Presented the remedial requirements, design criteria, data, areas subject to remediation and prescribed the remediation techniques for the inadequate vegetation for the Milltown Sediments placed within the D2-Cells and B1 Cells of the Opportunity Ponds through borrow development, engineered covers, and revegetation.

5.5.8.2 Summary of RA

RA construction within the Opportunity Ponds RDU 8 was implemented from 2004 through 2014. The work remaining includes operating the ADLC Development Repository within the A.9 Cell and closing the B2.12 Cell and the D1 Cell waste consolidation areas and corresponding haul roads. Wastes from the Milltown Reservoir were consolidated within RDU 8 and waste consolidation activities from the Clark Fork River are ongoing. AR, pursuant to the settlement embodied within the Clark Fork River OU Consent Decree (Site Document Register No. 100-03-566, at ¶¶ 53-56), currently is responsible for closure and reclamation of the B2.12 cell at Opportunity Ponds. Operation and eventual final closure of the ADLC Development Repository (wastes from local development activities within ADLC) located in the A.9 Cell will be completed pursuant to the *Final Anaconda Smelter Development Repository Operation and Management (O&M) Plan* (Site Document Register No. 608-12-93). Closure of the D1 Cell will be completed by AR once waste consolidation activities within the cell are complete. Figure 5.10 illustrates the areas where RA has been implemented and Table 5.10 summarizes the actions implemented to date within RDU 8. Additional details associated with these RDU 8 remediated areas can be found in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
608-08-388	*Final RDU 8 Triangle Waste Area (TWA) Remedial Action (RA) Construction Completion Report (CCR)*	December 19, 2006	Summarized the 2002 through 2004 RA construction for the Triangle Waste Area located at the southwestern end of the Opportunity Ponds. Including waste consolidation and engineered cover placement in anticipation of commercial/industrial development, construction of storm water controls and revegetation
608-08-448	*Final RDU 8 A-Cells Remedial Action (RA) Construction Completion Report (CCR)*	November 27, 2006	Summarized the 2003 through 2005 RA construction for the A-Cells portion of Opportunity Ponds. The project consisted of constructing haul roads, installing Engineered Covers, consolidating waste and debris, constructing perimeter storm water controls and revegetation.
608-08-492	*Draft Final Opportunity Ponds Remedial Design Unit (RDU) 8 Milltown Sediment Remedial Action (RA) Construction Completion Report (CCR)*	November 5, 2014	Summarized the 2012 through 2014 Opportunity Ponds RDU 8 Milltown Sediments Project included placing additional cover over the D2 Cells and the B1 Cell. RA construction completed during the Milltown Sediments Project including hauling and placing cover soil material from nearby borrow areas over the areas previously covered with the imported materials from the Milltown Dam OU.
608-08-931	*2014-2015 Construction Completion Report for Visible Tailings Soil Removal from Part of Railroad and MDOT Rights of Way in RDU 8*	October 8, 2015	Documented construction activities removal of visible tailings from the railroad and MDOT rights of ways within RDU 8.
608-08-291	*Final Opportunity Ponds Remedial Design Unit (RDU) 8 Remedial Action (RA) Construction Completion Report (CCR)*	October 18, 2017	Summarized the Opportunity Ponds project initiated in 2004 and completed in 2014 included RA construction primarily within the B, C, and D Cells and surrounding areas. RA construction at the Opportunity Pond RDU 8 consisted of constructing haul roads, removing, and consolidating waste, installing Engineered Covers consisting of both cover and tillage, constructing storm water run-on and runoff controls, developing borrow areas, constructing a groundwater treatment system, and constructing wetlands.

5.5.9 RDU 9 - Fluvial Tailings RD/RA Status

RD/RA in RDU 9 is ongoing, as described below.

5.5.9.1 Summary of RD

The RDU 9 Fluvial Tailings RD includes approximately 5,000 acres of remedial polygons, 217 acres of which are associated with the Lower Willow Creek floodplain. Approximately 2,091 acres of these polygons require implementation of RA (i.e., treatment via tillage or removal) while the

remaining 2,924 acres do not require physical remediation (i.e., treatment) as they are NFA facilities or well vegetated areas that may require only monitoring/weed spraying. The approved RD for RDU 9 is presented in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
609-05-1	*Remedial Design Unit (RDU) 9 – Fluvial Tailings Final Design Report*	November 16, 2007	Presented the remedial requirements, design criteria, data, areas subject to remediation and prescribed the remediation techniques to address impacted soils through *in-situ* treatment and selective removal to minimize impacts to adjacent surface waters.
609-05-2	*Remedial Design Unit (RDU) 9 – Fluvial Tailings Remedial Action Work Plan*	November 16, 2007	Presented the remedial methods and procedures for remediation of impacted soils areas within RDU 9 – Fluvial Tailings to comply with the ARWW&S ROD.
609-05-3	*Willow Creek Floodplain Project Area Final Design Report (FDR), Remedial Design Unit 9, Fluvial Tailings*	April 6, 2012	Presented the remedial requirements, design criteria, data, the Willow Creek corridor reaches subject to remediation and prescribed the remediation techniques to address impacted soils through *in-situ* treatment, selective removal and streambank reconstruction/stabilization to minimize impacts to adjacent surface waters.
609-05-4	*Willow Creek Floodplain Project Area Remedial Design Unit (RDU) 9 – Fluvial Tailings Draft Final Remedial Action Work Plan (RAWP)*	June 27, 2012	Presented the remedial methods and procedures for remediation of impacted soils and streambank stabilization methods within the Willow Creek corridor to comply with the ARWW&S ROD.
618-06-64	*Remedial Design Unit (RDU) 9 – Fluvial Tailings Individual Site Work Plan (ISWP) PRLU FT-012*	March 13, 2014	Presented the data and remedial methods and approach for an approximately 19-acre active gravel mining operation within RDU 9.
618-24-70	*Remedial Design Unit (RDU) 9 – Fluvial Tailings Individual Site Investigation Report (ISIR) PRLU FT-008.02*	June 10, 2014	Presented the data for an approximately 28-acre inactive gravel pit formerly operated by Pioneer Concrete. Data supported an M-WV remedy under the monitoring requirements of the VMP.
618-06-68	*Remedial Design Unit (RDU) 9 – Fluvial Tailings Individual Site Work Plan (ISWP) PRLU FT-009.11*	June 13, 2014	Presented the data and remedial methods and approach for an approximately 17-acre privately owned borrow area within RDU 9.
618-06-49	*Remedial Design Unit (RDU) 9 – Fluvial Tailings Individual Site Work Plan (ISWP) PRLU FT-008.04*	July 23, 2014	Presented the data and remedial methods and approach for an approximately 23-acre privately owned auto salvage yard (S&S Salvage) within RDU 9.

618-06-71	*Remedial Design Unit (RDU) 9 – Fluvial Tailings Individual Site Work Plan (ISWP) PRLU FT-008.07*	July 23, 2014	Presented the data and remedial methods and approach for an approximately 4-acre privately owned gravel mining area within RDU 9.
618-06-60	*Remedial Design Unit (RDU) 9 – Fluvial Tailings Individual Site Work Plan (ISWP) PRLU FT-008.05*	March 13, 2015	Presented the data and remedial methods and approach for an approximately 28-acre active gravel mining operation by the State of Montana within RDU 9.
618-06-61	*Remedial Design Unit (RDU) 9 – Fluvial Tailings Individual Site Work Plan (ISWP) PRLU FT-010.01*	March 13, 2015	Presented the data and remedial methods and approach for an approximately 68-acre active gravel mining operation by Pioneer Concrete within RDU 9.
618-06-63	*Remedial Design Unit (RDU) 9 – Fluvial Tailings Individual Site Work Plan (ISWP) PRLU FT-011*	March 13, 2015	Presented the data and remedial methods and approach for an approximately 50-acre active gravel mining operation by Gilman Excavating within RDU 9.
618-24-52	*Remedial Design Unit (RDU) 9 – Fluvial Tailings Individual Site Investigation Report (ISIR) PRLU FT-006*	March 20, 2015	Presented the soils data associated with the investigation within a 60-acre privately-owned agricultural field within RDU 9. Data supported a No Action remedy.

5.5.9.2 Summary of RA

RA construction within RDU 9 is ongoing with approximately 2,000 acres having been remediated as of 2020. Approximately 98 acres of previously remediated areas within RDU 9 were developed as a borrow area to complete RA associated with the *RDU 8 Milltown Sediments RAWP/FDR* (Site Document Register No. 608-05-317). Reclamation of the Stewart Street Borrow Area within RDU 9 is addressed under the Milltown Sediments RA, as detailed in the *RDU 8 Milltown Sediments CCR* (Site Document Register No. 608-08-492). Figure 5.11 illustrates the areas of work completed and the remaining areas requiring remedial action. Table 5.11 summarizes the actions that have been implemented to date within specific project areas. Additional details associated with the implemented RDU 9 RA can be found in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
609-08-238	*Remedial Design Unit (RDU) 9 – Fluvial Tailings 2010/2011 RA Construction Completion Report (CCR)*	November 14, 2012	The 2010/2011 RDU 9 RA construction included approximately 490 acres of property owned by AR Company and the Montana Department of Transportation. along both sides of I-90. The project included stripping of 19 acres and in-situ treatment and revegetation of approximately 490 acres (including stripped areas).

609-08-493	*Remedial Design Unit (RDU) 9 – Fluvial Tailings Lower Willow Creek 2012/2013 RA Construction Completion Report (CCR)*	June 30, 2014	The 2012/2013 RDU 9 Lower Willow Creek RA construction included stripping and consolidation of fluvially deposited tailings and impacted soils from approximately 35 acres of the Lower Willow Creek corridor followed by floodplain backfill and revegetation. Additionally, in conjunction with tailings removal activities, approximately 4,200 linear feet of actively eroding streambanks were stabilized with bioengineered treatments and planting of native riparian grasses and woody species.
609-08-563	*Remedial Design Unit (RDU) 9 – Fluvial Tailings 2011 Yellow Ditch Final Construction Completion Report (CCR)*	October 29, 2013	Summarized the 2011 construction activities associated with the Yellow Ditch RA. The project area encompassed approximately 40 acres and consisted of removal of waste, consolidation of waste within the Anaconda Smelter Hill RDU 14 Waste Management Area (WMA), backfill and ditch reconstruction, culvert installations, site grading, and revegetation.
609-08-761	*Remedial Design Unit (RDU) 9 – Fluvial Tailings Remaining Portion of RDU 9 Area 3 2015-2016 RA Construction Completion Report (CCR)*	June 30, 2017	Documents RA construction activities for approximately 350 acres within RDU 9 east of I-90 impacted by fluvial and aerial deposition. Approximately 300 acres were remediated via *in-situ* treatment and approximately 2,500 cubic yards of highly impacted soils were removed and consolidated within Opportunity Ponds. All disturbed areas were revegetated.
609-08-747	*Remedial Design Unit (RDU) 9 – Fluvial Tailings Yellow Ditch Montana Highway 1 Construction Completion Report (CCR)*	March 21, 2018	Documents RA construction activities for approximately 250 feet of Yellow Ditch located directly south of Montana Highway 1. Less than 1,000 cy of waste materials within the ditch required removal and consolidation within the Opportunity Ponds. Excavated areas were backfilled and the ditch reconstructed to facilitate flow.
609-08-898	*Remedial Design Unit (RDU) 9 – Fluvial Tailings 2018-2020 RA Construction Completion Report (CCR)*	April 27, 2021	Documents the RA construction for approximately 1,000 acres of fluvially and aerially impacted private property within RDU 9. RA activities included, *in-situ* treatment, selective removal, consolidation and backfill, revegetation of disturbed areas and temporary BMP installation to control erosion.

5.5.10 RDU 10 - Warm Springs Creek RD/RA Status

RD/RA in RDU 10 has been fully implemented, as described below, and the RDU is in the monitoring and maintenance phase.

5.5.10.1 Summary of RD

The RD for RDU 10 addresses approximately 4.5 total miles of Warm Springs Creek that was impacted to varying degrees. The RD divided the areas requiring RA into two separate project reaches—the Section 32 and the Lower Warm Springs Creek project areas. The proposed RA for Warm Springs Creek included tailings removal, historic channel re-activation, bank stabilization, and

revegetation to reduce COC loading in surface waters. The RD for RDU 10 is provided in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
610-05-249	*Remedial Design Unit (RDU) 10 – Warm Springs Creek Final Design Report (FDR)*	August 1, 2012	Presented the remedial requirements, design criteria, data, areas subject to remediation and prescribed the remediation techniques, including tailings removal, bank stabilization, and revegetation to reduce COC loading in Warm Springs Creek.
610-05-5	*Warm Springs Creek Remedial Design Unit (RDU) 10 Final Remedial Action Work Plan (RAWP)*	July 1, 2014	Presented the remedial methods and procedures for remediation of impacted reaches along Warm Springs Creek within RDU 10 to comply with the ARWW&S ROD.
618-24-74	*Remedial Design Unit (RDU) 10 – Warm Springs Creek Individual Site Investigation Report (ISIR) Gochanour 2*	June 13, 2014	Presented the investigation results from a privately owned agricultural field located north of Highway 48 Road adjacent to Warm Springs Creek.

5.5.10.2 Summary of RA

The RDU 10 RA construction was implemented from 2016 to 2018, as illustrated on Figure 5.12 and summarized in Table 5.12. A large portion of the Warm Springs Creek floodplain in Section 32 was remediated in 2009-2010 as part of the RDU 7 North Opportunity Upland RA, and therefore is not included as part of the RDU 10 RA. Additional details associated with remediated RDU 10 areas can be found in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
610-08-771	*Remedial Design Unit (RDU) 10 – Warm Springs Creek RA Construction Completion Report (CCR)*	April 28, 2020	Summarized the 2016 through 2018 RA construction along two reaches of Warm Springs Creek, including the removal of fluvially deposited tailings located in streambanks and on the floodplain contributing to elevated COCs in surface water, the selective removal of streambank tailings, and stream bank stabilization and channel reconstruction techniques.

5.5.11 RDU 11 - Cashman Concentrates RD/RA Status

RD/RA in RDU 11 has been fully implemented, as described below.

5.5.11.1 Summary of RD

RDU 11 includes the Cashman Concentrate materials that consisted of approximately 20,000-22,000 tons of copper ore concentrate. Approximately 18,000-20,000 tons were located adjacent to the East

Anaconda Yards while approximately 2,000 tons were in Skykomish, Washington. RA construction for these materials included removal and/or reprocessing.

The approved RD for RDU 11 is presented in the document listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
611-05-6	*Remedial Design Unit (RDU) 11 – Remedial Action Work Plan/Final Design Report (RAWP/FDR) for Relocation/Reprocessing of Cashman Concentrate*	October 1, 2003	Presented the design approach and basis for the RDU 11 RA, as well as identified the methods and procedures that were followed for the implementation and management of the RDU 11 RA. In addition, the RDU 11 RAWP/FDR set forth task specific methods or approaches and schedules and other provisions to comply with Performance Standards and other criteria required by the ARWW&S OU ROD.

5.5.11.2 Summary of RA

The Cashman Concentrates were in two areas: the Smelter Hill Concentrates stockpile within the Anaconda Smelter NPL Site and the Cashman (Apex) Mill site near Skykomish, Washington. The RDU 11 RA included relocating the Cashman Concentrates and adjacent contaminated soils for reprocessing at the Montana Resources Mine in Butte, Montana, to ensure protection of human health and the environment. RA construction within RDU 11 began on October 20, 2003 and was completed on December 16, 2003. Unloading and hauling of the Skykomish, Washington concentrates began November on 12, 2003, and was completed on December 9, 2004. Figure 5.13 illustrates the areas where RA has been implemented at the Site, and Table 5.13 summarizes the implemented actions associated with RDU 11. Additional details associated with the Cashman Concentrates are presented in the document listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
611-08-306	*Remedial Design Unit (RDU) 11 – Draft Final Relocation of the Cashman Concentrates Construction Completion Report (CCR)*	September 22, 2004	RDU 11 RA construction consisted of removing abandoned power line poles along the active RARUS rail line, constructing a staging area, hauling concentrates to be processed at MR in Butte and consolidating impacted soils and debris in the RDU 8 B2.12 cell. The Smelter Hill Cashman Concentrates stockpile area within ownership of RARUS Railway was reclaimed consistent with the RDU 5 Anaconda Active Railroads RAWP/FDR. As identified in the RDU 11 FDR/RAWP, final reclamation of the hillside adjacent to the pile will be performed during implementation of the RDU 3 RA following regrading and interim seeding completed as part of the RDU 11 work.

5.5.12 RDU 12 - Slag RD/RA Status

RD/RA in RDU 12 is ongoing, as described below.

5.5.12.1 Summary of RD

RDU 12 Slag includes three slag piles located one mile east of Anaconda, Montana, covering approximately 200 acres and consisting of approximately 25.5 million cubic yards of slag. The three slag pile sites are: the MGS Pile Site, the WSS Pile Site and the ALS Pile Site. The ARWW&S OU ROD provides for beneficial reuse of the slag materials as commercial products for reuse as blasting media, manufactured roofing material, other building materials, underground pipe bedding material, as an additive in the manufacturing of Portland cement, and for landscaping use at the OWGC. Other uses may be considered with EPA approval.

The remedies for the MGS, WSS, and ALS piles were further defined under the following slag management plans and consist of measures to be implemented pursuant to and performed in accordance with the interim management and closure of the slag materials as presented in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
612-12-782	*Remedial Design Unit (RDU) 12 – Main Granulated Slag Site Final Slag Management Plan*	August 7, 2020	Document presents the management practices for the MGS Pile, including property management, slag processing operations, and partial cover placement, as well as presents a conceptual Final Closure/Reclamation plan in support of the ARWW&S OU ROD.
612-12-780	*Remedial Design Unit (RDU) 12 – West Stack Slag Site Final Slag Management Plan*	August 7, 2020	Document presents the management practices for the WSS Pile, including property management, slag processing operations, and presents a conceptual Final Closure/Reclamation plan in support of the ARWW&S OU ROD.
612-05-9	*Remedial Design Unit (RDU) 12 - Anaconda Landfill Slag Site Final Slag Management Plan*	July 2022	Document presents the management practices for the ALS Pile, including property management, slag processing operations, and presents a conceptual Final Closure/Reclamation plan in support of the ARWW&S OU ROD.

5.5.12.2 Summary of RA

RA activities for the slag materials have not been implemented pending permanent suspension of slag processing activities as illustrated on Figure 5.14 and summarized in Table 5.14.

5.5.13 RDU 13 - Old Works WMA Groundwater RD/RA Status

RD/RA activities within RDU 13 are ongoing, as described below.

5.5.13.1 Summary of RD

The ARWW&S OU portion of the RD for RDU 13 addresses the groundwater monitoring design for the Old Works WMA. The RD for RDU 13 is presented in the document listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
613-05-365	*Final Old Works Remedial Design Unit (RDU) 13 Final Design Report (FDR)*	April 23, 2010	The FDR presents a conceptual site model for groundwater under and around the Old Works WMA and presents a conceptual monitoring plan. This monitoring is further summarized under the groundwater component of Section 9 and detailed in the *Groundwater Management Plan* (GWMP). No remedial construction activities are required under the RDU 13 FDR as all surface reclamation activities within the RDU 13 Old Works are addressed as part of the remedial activities for the OW/EADA OU (see Section 5.3).

5.5.13.2 Summary of RA

No RA construction activities are required for RDU 13 because all construction activities are included in the OW/EADA OU RA, as summarized in Section 5.3. Figure 5.15 shows the location of the Old Works RDU 13 WMA, but does not illustrate any RA construction (see Section 5.3). Table 5.15 summarizes the groundwater remediation status for the Old Works WMA.

5.5.14 RDU 14 Smelter Hill Facility Area RD/RA Status

RD/RA in RDU 14 has been substantially implemented, as described below, and the RDU is in the monitoring and maintenance stage.

5.5.14.1 Summary of RD

The RD for the RDU 14 Smelter Hill Facilities (Smelter Hill WMA) includes approximately 1,400 acres of remedial polygons. Approximately 950 acres of these polygons require implementation of RA (i.e., treatment via tillage, steep slope remediation, and engineered cover installation) while the remaining 450 acres do not require physical remediation (i.e., treatment) as they are previously reclaimed areas, NFA facilities, or well vegetated areas that may require only monitoring/weed spraying. The design for RDU 14 includes the construction of multiple engineered controls (i.e., stormwater ponds and channels) to control stormwater run-off to down-gradient receptors. The RD for the Smelter Hill Facilities Area is presented in documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
614-05-371, 614-05-372, 614-05-373	*Final ARWW&S OU Smelter Hill Facilities Area Remedial Design Unit (RDU) 14 Remedial Action Work Plan/Final Design Report (RAWP/FDR)*	December 22, 2005	Presented the remedial requirements, design criteria, data, areas subject to remediation and prescribed the remediation techniques, including constructing engineered covers consisting of both cover and tillage, constructing storm water run-on and runoff controls, developing borrow areas, and constructing haul roads.
614-05-460	*Final Aspen Hills Loop Track Remedial Action Work Plan/Final Design Report RAWP/FDR*	July 30, 2002	Presented the remedial requirements, design criteria, data, areas subject to remediation and prescribed the remediation techniques for the Aspen Hills RR Loop Track, including *in-situ* remediation of impacted soils, waste excavation and consolidation, engineered cover installation, steep slope reclamation, installation of surface water controls and BMPs, and revegetation.

5.5.14.2 Summary of RA

RA within RDU 14 was implemented from 2011 to 2019. Portions of the RA construction within the RDU 14 boundary were remediated in conjunction with the Aspen Hills Loop Track RA and RDU 6 – Mill Creek Road RA in 2003 and 2008, respectively. Figure 5.16 illustrates the areas where RA has been implemented and Table 5.16 summarizes the actions implemented to date within RDU 14. Additional details associated with the implemented RDU 14 RA can be found in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
614-08-366	*Final Smelter Hill RDU 14 Aspen Hills Loop Track RA Construction Completion Report (CCR)*	January 26, 2007	Summarized the 2001-2003 RA activities for the Aspen Hills Loop Track, including the removal/consolidation of approximately 52,000 cy of waste within the Anaconda Ponds, borrow development for placement of an 18-inch cover over the loop track, *in-situ* treatment of adjacent areas, and revegetation.
606-08-107	*Remedial Design Unit (RDU) 6 – South Opportunity Uplands Mill Creek Road RA Construction Completion Report (CCR)*	January 29, 2010	Summarized the 2008 RA construction of approximately 195 acres within RDU 6 and a portion of RDU 14, including approximately 150 acres within RDU 6, and stripping of approximately 100 acres, *in-situ* soil treatment of approximately 48 acres, and revegetation. Additional acreage along the east Anaconda Ponds dike within RDU 14 was remediated with this project.

614-08-426	*Final Smelter Hill Facilities Area RDU 14 2011 Haul Road Construction Completion Report (CCR)*	March 8, 2013	Summarized the 2011-2012 Haul Road Construction project, including the construction of haul roads necessary to facilitate future hauling and placing of engineered covers within the site, which was initiated in October 2011 and completed in May 2012. Existing haul roads were widened, and, in some locations, new haul roads were constructed. In addition to haul road construction, storm water controls were installed to convey runoff around the haul roads and a minor amount of waste consolidation was completed.
614-08-494	*Final Smelter Hill Facilities Area RDU 14 Storm Water Controls Remedial Action (RA) Construction Completion Report (CCR)*	November 26, 2014	Primarily summarized the 2012-2014 construction activities for RDU 14 engineered controls, including installing storm water control channels and structures/ponds. Some additional work was completed to regrade steep slopes, install engineered covers, and consolidate wastes near the constructed storm water controls.
614-08-756	*Final Smelter Hill Facilities Area Remedial Design Unit (RDU) 14 Engineered Cover Installation Remedial Action (RA) Construction Completion Report (CCR)*	March 2, 2021	Summarized the 2016-2017 RDU 14 engineered cover RA construction, including borrow development, regrading of steep slope areas for cover placement, *in-situ* soil treatment, storm water upgrades, debris/structure removal, building demolition, waste consolidation, and revegetation.
614-08-909	*Draft Final Smelter Hill Facilities Area Remedial Design Unit (RDU) 14 Secondary Steep Slope Regrading and Capping Remedial Action (RA) Construction Completion Report (CCR)*	August 31, 2016	Summarized the 2014-2016 RDU 14 RA construction for the reclamation of approximately 166 acres of secondary steep slopes, including borrow development, regrading debris/structure removal, stormwater control, cover placement, and revegetation.
614-08-788	*Draft Final Smelter Hill Facilities Area Remedial Design Unit (RDU) 14 Final Site RA - Steep Slopes 1 and 2 Construction Completion Report (CCR)*	September 14, 2020	Summarized the 2018-2019 RDU 14 RA construction within Steep Slopes 1 and 2 including borrow development and reclamation, installing Engineered Covers, constructing new storm water controls, upgrading existing storm water controls, steep slope regrading, steep slope tree and shrub planting, implementing steep slope erosion protection measures, aerial fertilizer and seeding of steep slope and monitor-well vegetated areas, installing a rock fall barrier system, and revegetating reclaimed areas.

614-08-928	*Draft Final Smelter Hill Repository Complex (SHRC) Long-Term Leachate Management System Construction Completion Report*	February 18, 2020	Summarized the construction of the SHRC long-term leachate management system to manage leachate generated from the Arbiter, Beryllium, and Flue Dust Repositories. The long-term leachate management system generally consists of the following components: treatment/storage building; storage tanks containment area and access stairs; EEA; repository sump pump and valve manifold assembly; pH adjustment system; storage tanks; and EEA pump and dispersal system.

5.5.15 RDU 15 Mt. Haggin Uplands RD/RA Status

Pursuant to the Clark Fork River OU Consent Decree (Site Document Register No. 100-03-566), RD, RA, and O&M activities within RDU 15 are the responsibility of the State of Montana Natural Resource Damages Program.

5.5.15.1 Summary of RD

RDU 15 Mt. Haggin Uplands includes approximately 776 acres of remedial design polygons, as shown on Figure 5.17 and summarized in Table 5.17. Approximately 137 acres of these polygons require implementation of RA (i.e., treatment via tillage and steep slope remediation) while the remaining 639 acres do not require physical remediation (i.e., treatment) as they are well vegetated areas that may require only monitoring/weed spraying. The approved RDU 15 RD is presented in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
615-05-42	*Remedial Design Unit (RDU) 15 – Mt. Haggin Final Design Report (FDR)*	October 12, 2007	Presented the remedial requirements, design criteria, data, areas subject to remediation and prescribed the remediation techniques to address impacted soils via *in-situ* treatment, steep slope remediation, selective waste removal and minimize impacts to surface water.
615-05-43	*Remedial Design Unit (RDU) 15 – Mt. Haggin Uplands Final Remedial Action Work Plan (RAWP)*	October 12, 2007	Presented the remedial methods and procedures for remediation of impacted soils areas within RDU 15 – Mt. Haggin to comply with the ARWW&S ROD.
615-12-936	*Mount Haggin Uplands (RDU 15) Remedy and Restoration Work Plan*	May 2018	Presented the State of Montana's alternative design and work plan for RDU 15 – Mount Haggin to comply with the ARWW&S OU ROD and ROD Amendments.

5.5.15.2 Summary of RA

As noted above, pursuant to the terms of the Clark Fork River OU CD, RA within RDU 15 is the responsibility of the State Natural Resource Damages Program. Consequently, tracking of RA progress in RDU 15 is beyond the scope of this SMP and subsequent annual reports. Additional

details associated with the implemented RDU 15 Mount Haggin RA can be found in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
615-08-937	*Interim Construction Completion Report, Cabbage Gulch, Remedial Design Unit 15.*	March 2018	Summarized the 2009-2016 RA construction for approximately 67 acres within the Cabbage Gulch drainage basin that received a variety of steep slope reclamation and plantings, including 40 acres of grass seeding, 15,713 trees and shrubs planted, and over 500 feet of sediment berms and catch basin installations.
615-08-940	*Mount Haggin Wildlife Management Area Erosion Control Project Construction Completion Report, 2018.*	March 2021	Summarized the 2018 RA construction for approximately 47 acres within the California Creek, Joyner Gulch, and Muddy Gulch drainage basins that received a variety of steep slope reclamation and plantings, including grass seeding, soil scarification, slope stability features, in-stream structures, gully slash filters and check dams, dozer basins, and spreader dikes.
615-08-939	*Mount Haggin Wildlife Management Area Erosion Control Project Construction Completion Report, 2019-2020.*	July 2021	Summarized the 2019-2020 RA construction for approximately 148 acres within the California Creek, Joyner Gulch, and Muddy Gulch drainage basins that received a variety of steep slope reclamation and plantings, including grass seeding, soil scarification, slope stability features, in-stream structures, gully slash filters and check dams, dozer basins, spreader dikes, and sediment basins.

5.5.16 West Galen Expansion Area RD/RA Status

RD/RA in West Galen Expansion Area is ongoing, as described below.

5.5.16.1 Summary of RD

The West Galen Expansion Area Uplands RD includes approximately 6,300 acres of remedial polygons. Approximately 4,500 acres of these polygons require implementation of RA while the remaining 1,800 acres do not require physical remediation (i.e., treatment via tillage) as they are NFA facilities or well vegetated areas that may require only monitoring/weed spraying. The approved RD for the West Galen Expansion Area is presented in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
616-05-44	*West Galen Expansion Area Final Design Report (FDR)*	June 7, 2005	Presented the remedial requirements, design criteria, data, areas subject to remediation and prescribed the remediation techniques to address impacted soils via *in-situ* treatment and limited steep slope remediation within the West Galen Expansion Area.
616-05-45	*West Galen Expansion Area 1 Final Remedial Action Work Plan (RAWP)*	June 7, 2005	Presented the remedial methods and procedures for remediation of impacted soils areas under private ownership (excluding Ueland-owned properties) within the West Galen Expansion Area to comply with the ARWW&S ROD.
616-05-250	*West Galen Expansion Area 2 Final Remedial Action Work Plan (RAWP)*	June 7, 2005	Presented the remedial methods and procedures for remediation of impacted soils areas owned by AR and Ueland Ranches within the West Galen Expansion Area to comply with the ARWW&S ROD.
618-24-72	*West Galen Expansion Area Individual Site Investigation Report (ISIR) PRLU WGAL-003.10*	April 8, 2014	Presented the soils data for a privately owned former gravel pit, approximately 6-acres in size, within the Powell Vista subdivision in West Galen. Data supported a No Action remedy.
618-24-69	*West Galen Expansion Area Individual Site Investigation Report (ISIR) PRLU WGAL-001.02*	April 11, 2014	Presented the soils data for a privately owned former gravel pit, approximately 4-acres in size, adjacent to the Launderville subdivision in West Galen. Data supported a No Action remedy
618-24-73	*West Galen Expansion Area Individual Site Investigation Report (ISIR) PRLU WGAL-003.29*	May 12, 2014	Presented the soils data for a privately owned former gravel pit, approximately 5-acres in size, in West Galen. Data supported a No Action remedy.
618-24-56	*West Galen Expansion Area Individual Site Investigation Report (ISIR) PRLU WGAL-008.01*	May 16, 2014	Presented the soils data associated with the investigation within a 320-acre privately owned agricultural field east of Highway 273 within West Galen. Data supported a No Action remedy.
618-06-54	*West Galen Expansion Area Individual Site Work Plan (ISWP) PRLU WGAL-006.06-A*	May 23, 2014	Presented the soils data and remedial methods and approach for an approximately 60-acre privately owned seasonal horse pasture field east off the Antelope Gulch Road within West Galen.

618-06-55	*West Galen Expansion Area Individual Site Work Plan (ISWP) PRLU WGAL-007.01*	May 23, 2014	Presented the soils data and remedial methods and approach for an approximately 130-acre privately owned agricultural field west of Highway 273 within West Galen.

5.5.16.2 Summary of RA

RA construction activities within West Galen were initiated in 2005 and were substantially implemented by 2018. Figure 5.18 illustrates the areas where RA has been implemented and the remaining areas requiring RA, and Table 5.18 summarizes the actions implemented to date within the West Galen Expansion Area. Additional details associated with the implemented West Galen RA can be found in the documents listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
616-08-145	*West Galen Expansion Area 2005 Area 2 Construction Completion Report (CCR)*	January 1, 2009	Summarized the 2005-2006 RA construction for 126 acres of impacted soils that received a combination of soil tilling up to 12-inches (LT, T6, or T12), lime application, organic amendment application, and/or high phosphorous fertilizer application. Soil treatment was followed by revegetation consisting of soil compaction, fertilizer, and drill seeding.
616-08-146	*West Galen Expansion Area 2006 Area 2 Construction Completion Report (CCR)*	January 1, 2009	Summarized the 2006-2007 RA construction for approximately 225 acres of impacted soils that received a combination of soil tilling up to 12-inches (LT, T6, or T12), lime application, organic amendment application, and/or high phosphorous fertilizer application. Soil treatment was followed by revegetation consisting of soil compaction, fertilizer, and drill seeding.
616-08-147	*West Galen Expansion Area 2007 Area 2 Construction Completion Report (CCR)*	February 18, 2009	Summarized the 2007-2008 RA construction for approximately 1,200 acres of impacted soils that received a combination of soil tilling up to 12-inches (LT, T6, or T12), lime application, organic amendment application, and/or high phosphorous fertilizer application. Soil treatment was followed by revegetation consisting of soil compaction, fertilizer, and drill seeding.
616-08-148	*West Galen Expansion Area 2008 Area 2 Construction Completion Report (CCR)*	February 15, 2010	Summarized the 2008-2009 RA construction for approximately 713 acres of impacted soils that received a combination of soil tilling up to 12-inches (LT, T6, or T12), lime application, organic amendment application, and/or high phosphorous fertilizer application. Soil treatment was followed by revegetation consisting of soil compaction, fertilizer, and drill seeding.

616-08-149	*West Galen Expansion Area 2009 Area 2 Construction Completion Report (CCR)*	February 18, 2011	Summarized the 2009-2010 RA construction for approximately 575 acres of impacted soils that received a combination of soil tilling up to 12-inches (LT, T6, or T12), lime application, organic amendment application, and/or high phosphorous fertilizer application. Soil treatment was followed by revegetation consisting of soil compaction, fertilizer, and drill seeding.
616-08-150	*West Galen Expansion Area 2011 Powell Vista RA Construction Completion Report (CCR)*	January 30, 2013	Summarized the 2011 Powell Vista Subdivision RA construction consisting of 43 residential parcels, various easements, and open common spaces representing approximately 143 acres of required RA. The RA did not include existing residential yard areas addressed separately under the CSOU. RA consisted of soil tilling up to 12-inches (T6 or T12), lime application, fertilizer application, and revegetation of disturbed areas.
616-08-629	*West Galen Expansion Area Launderville Subdivision 2014-2015 RA Construction Completion Report (CCR)*	April 29, 2016	Summarized the 2014-2015 Launderville Subdivision project consisting of 16 residential parcels, various easements, and open common spaces representing approximately 320 acres of required RA construction. Additional adjacent open space areas were also remediated. The RA construction did not include existing residential yard areas addressed separately under the CSOU. RA construction consisted of soil tilling up to 12-inches (T6 or T12), lime application, and revegetation of disturbed areas.
616-08-895	*West Galen Expansion Area Remaining Portions of West Galen Area 1 2016-2018 Construction Completion Report (CCR)*	March 20, 2019	Summarized the 2016-2018 West Galen RA consisting of approximately 1,050 acres including 21 residential parcels, various easements, and open agricultural field. The RA construction did not include existing residential yard areas addressed separately under the CSOU. RA construction consisted of soil tilling up to 12-inches (T6 or T12), lime application, fertilizer application, and revegetation of disturbed areas.
616-15-912	*West Galen 2019 RA Maintenance Summary Report*	August 7, 2020	Summarized the remedial maintenance of approximately 20 acres of impacted soils within non-O&F vegetation on privately owned land within West Galen. The area was not addressed during earlier adjacent RA construction in 2007 due to site constraints and surface water drainage that restricted access to implement the tillage remedy.

5.5.17 Dutchman Creek Expansion Area RD/RA Status

The RD/RA for the Dutchman Creek Expansion Area has been substantially implemented, as described below, and the area is in the LTIM phase, as described in Section 9.

5.5.17.1 Summary of RD

The RD for the Dutchman Creek Expansion Area (the Dutchman) is presented in the document listed in the table below.

Site Document Register No.	Document Title	Date Published	Portion of Overall Project Addressed
617-05-273	*Dutchman Creek High Arsenic Area Final Design Report (FDR)*	September 1, 2012	The FDR established a HAA within the Dutchman, the boundary of which was finalized under the 2011 ARWW&S ROD Amendment. No RA is required for the Dutchman as existing vegetation is adequate to meet the remedial requirements for HAAs and is monitored under the requirements of the VMP and managed under the *Final Dutchman Property Management Plan*. Wetlands also are present within the Dutchman that are being monitored under the four-step wetland mitigation process.

5.5.17.2 Summary of RA

No RA construction activities are required in the Dutchman area associated with the ARWW&S OU at this time. Some infrastructure construction was proposed under the *Final Dutchman Property Management Plan* (Site Document Register No. 617-26-285) to facilitate safe public access. AR has built and currently maintains the infrastructure proposed under the *Final Dutchman Property Management Plan*. The boundary of the Dutchman Creek area, associated HAA, and wetlands are shown on Figure 5.19, and a summary is presented in Table 5.19. A summary of the wetlands process completed within the Dutchman area to date is provided in Section 7 of this SMP.

5.5.18 Supplemental RD/RA Areas

5.5.18.1 Summary of RD

In support of the 2017 *ARWW&S OU Final Surface Water Technical Impracticability (TI) Evaluation Report (TI Report)* (Site Document Register No. 100-15-867), supplemental surface water controls (i.e., BMPs, additional slope work, and engineered controls) have been added to the surface water remedy for the Site to address surface water quality improvements in select drainages, as detailed in the *ARWW&S OU Supplemental Surface Water Controls RD/RA Report* and the SWMP.

The major components of the additional work include the following:

1. Additional Engineered Controls – Construction/O&M of additional storm water sediment ponds in the Lost Creek and Warm Springs Creek drainages.
2. Remedy Implementation in Additional Barren and Moderately Vegetated Slope Areas – Additional Slope Reclamation (SR) and maintenance to areas in the Lost Creek drainage, Warm Springs Creek drainage, and Mill Creek drainage north of Mill Creek Road.
3. RDU Remedy Enhancement – In areas addressed by other RDU RAWPs, where no or limited sized engineered controls are proposed, the original designs have been re-evaluated for potential enhancements, such as applying soil amendments or installing additional BMPs, typically including hand-installed controls (e.g., slope wattles, check dams, brush boxes, erosion control blanket).

4. Additional BMPs – BMPs have been considered in the design of the additional SR areas and in existing RDU remedy areas, where they have been considered implementable and effective. Ephemeral gullies were given specific attention as both sources and conveyors of sediment.

The *ARWW&S OU Supplemental Surface Water Controls RD/RA Report* includes approximately 143 acres of remedial design polygons in the Lost Creek drainage and 410 acres of remedial design polygons in the Mill Creek Drainage, as well as BMPs in numerous erosive gullies in the Lost Creek, Mill Creek, and Warm Springs Creek drainages. RDU remedy enhancement in the form of BMPs and ponds also will be completed in the Lost Creek, Mill Creek, and Warm Springs Creek drainages. Additional engineered controls include designs for three sediment ponds in the Lost Creek drainage and three sediment ponds in the Warm Springs Creek drainage. Figures 5.3, 5.4, and 5.5 illustrate the locations of the supplemental storm water controls.

Supplemental controls shall be incorporated into the RDU 1, 2, and 3 RAs through the RFC process. It is anticipated that many of the drainage BMPs and vegetation enhancement components will be implemented concurrently with the RDU 1, 2, and 3 Upland RA activities.

5.5.18.2 Summary of RA

As of the end of 2020, RA has not been implemented in the Supplemental RD/RA areas. RA work associated with the Supplemental RD/RA areas will be performed concurrently with the execution of the remaining work in RDUs 1, 2 and 3.

6.0 SCHEDULE

6.1 Schedule for Completion of Site RD/RA Activities

Prescribed remedies within the Site consist of many types of remedial techniques to be implemented over several thousand acres, across diverse areas with several different land uses and landowners, and over a period of multiple years. Thus, it is essential that the remedial activities be coordinated and prioritized such that RA implementation and completion occurs in an effective and cost-efficient manner. The objective of this Section is to identify the anticipated schedule for outstanding RAs, as described in the SOW. Except as otherwise noted, it is anticipated that remaining RA construction activities at the Site will be performed over an approximately 5- to 10-year timeframe, followed by the appropriate completion reporting and monitoring and maintenance requirements, as discussed in Sections 7, 8, and 9. The intent of this Section is not to identify a fixed timeline or assign specific dates for each outstanding area subject to RA. Rather, this Section will identify the considerations that are evaluated as part of the initial RA planning phase leading up to implementation of RA. Figure 6.1 illustrates the currently anticipated, provisional schedule for completion of Site RA activities.

Revised provisional RA schedules providing a "look-ahead" of the anticipated RA activities will be included in the SMP Annual Reports, as discussed in Section 3.4. The SMP Annual Report will provide a two-year projection of the detailed RA schedule. Following submission of the SMP Annual Report, the Agencies, AR and their respective representatives and contractors, and certain interested stakeholders (e.g., ADLC) will hold the SMP Annual Meeting to review the schedule and make any necessary adjustments based on the considerations described below and as additional data and information is received. The Annual Report RA schedule requires approval from the Agencies.

6.2 Considerations for RA Implementation Planning

6.2.1 Landowner Access Agreements

Much of the area requiring RA is located on private properties requiring access for both implementation of the RA and post-RA monitoring and maintenance. Pre-RA planning activities include the execution of access agreements with the landowners allowing access for pre-RA activities (e.g., sampling, weed spraying), temporary storage of equipment and materials, and performance of the RA and post-RA monitoring and maintenance. The access agreements include maps of the parcels identifying the scope of the remedy on the parcels. Additional considerations such as consolidation of personal property, livestock management and temporary (i.e., typically 3-5 years) restrictions on land use (i.e., grazing) that could compromise the remedy are identified. Properties where access has not been granted by the landowner(s) after multiple attempts will be tracked and managed as discussed in Section 3.1.6 (Recalcitrant Landowners) and in Subsections below.

6.2.2 Contiguous Areas

Remedy implementation is most efficiently implemented over large areas. Landowner parcels often require more than one remedy based on topography, existing vegetation, and identified impacts, and

the extent of those remedies often spans more than one parcel. Access to larger contiguous parcels results in greater efficiency in RA implementation, more complete implementation of the remedy, and more efficient post-RA monitoring and maintenance.

6.2.3 Impacts to Receptors

Prioritization of RA areas may include addressing areas that are impacting adjacent receptors, such as surface water, wetlands, and/or adjacent residences or communities. This may include impacts from erosion via wind or water.

6.2.4 Coordination with Development

To the extent practicable, areas may be prioritized to complete RA activities in advance of proposed development to reduce requirements related to working around utilities, structures, personnel, and avoid potential safety hazards.

6.3 Anticipated RA Schedule

AR has implemented much of the RA required at the Site. Summaries of the RA activities that have previously been implemented are presented in Section 5. Outstanding areas subject to RA implementation and the anticipated timeframe for completion of these activities are described in the following Subsections.

6.3.1 Old Works/EADA OU

RA activities associated with the OW/EADA OU have been ongoing and have been substantially completed, except for four properties within Subarea 4 (McDowell, RDM, CESCO, and Warner), as discussed in Section 5.3. The RA for these remaining four properties includes surface water controls, site grading, and industrial cover installation. The timing of the outstanding RA implementation is dependent on obtaining landowner access to these properties. Any updates to the existing ISWPs and resubmittal for Agency approval for the four remaining properties discussed above will be addressed if and when AR has acquired access. These four parcels will be tracked and managed under the ICIAP as described in Section 3.1.6.

Continued O&M of the remedial features constructed at the OWGC will be completed and reported annually in accordance with the *Final Old Works/East Anaconda Development Area (OW/EADA) Operable Unit (OU) Old Works Golf Course Operations and Maintenance (O&M) Plan* (Site Document Register No. 400-29-773), as well as applicable provisions of the *Engineered Controls I&M Plan* (Site Document Register No. 100-11-90).

6.3.2 Community Soils OU

Remediation of residential yards and attics has been ongoing for several years, as summarized in Section 5.4. As detailed in the *Community Soils OU RAWP/FDR*, it is anticipated that residential soil remediation will be completed, where access is granted, by the end of 2025. The RD/RA process for these properties typically consists of sampling a year prior to performance of the RA to determine

remedial requirements. Thus, the "last call" for CSOU residential yard sampling is August 2024 to allow for completion of RA activities by the end of 2025. Leading up to this date, community outreach efforts will be made to encourage owners to request sampling and identify the post-"last call" implications. Post-2025, properties will be managed as described in Section 7 of the *Community Soils OU RAWP/FDR* (Site Document Register No. 500-05-762) to determine whether additional RA performance may be required.

Pursuant to the RCFSA, ADLC will perform the remaining residential attic dust remediation required pursuant to the *Community Soils OU RAWP/FDR* (Site Document Register No. 500-05-762) through a long-term attic dust abatement program. Under this program, attic remediation will be available for residential attics where the following two criteria are met: (1) the home was constructed prior to 1980; and (2) sampling confirms that lead or arsenic concentrations in the attic dust exceed their respective action levels. ADLC will prioritize for remediation eligible residential attics with an obvious exposure pathway (as defined in the *Community Soils OU RAWP/FDR*). It is anticipated that ADLC will complete the priority residential attic dust remediation in approximately 2027. Non-priority attic dust abatement will be implemented by ADLC through approximately 2047.

6.3.3 ARWW&S OU

6.3.3.1 Ongoing RA

RA activities are currently ongoing in multiple locations at the ARWW&S OU and the ongoing projects are at various stages of implementation, as described in the following Subsections.

6.3.3.1.1 RDU 1 – Stucky Ridge Uplands

The Agency-approved RDU 1 design and RA process is presented in the approved *Remedial Design Unit (RDU) 1 – Stucky Ridge Final Design Report (FDR)* (Site Document Register No. 601-05-21) and the approved *Remedial Design Unit (RDU) 1 – Stucky Ridge Uplands Final Remedial Action Work Plan (RAWP)* (Site Document Register No. 601-05-22). In accordance with the approved RDU 1 FDR/RAWP, and as directed under Administrative Order for Remedial Design/Remedial Action, Docket No. CERCLA-08-2002-10, RA activities within RDU 1 commenced in 2019 and are anticipated to be substantially implemented by the end of 2023. The ongoing work includes *in-situ* treatment, steep slope remediation, limited removal/backfill, and installation of surface water BMPs/engineered controls. Portions of the remaining RA include remedial components included in the *Anaconda Surface Water Management Plan* and the *ARWW&S OU Supplemental Surface Water Controls Remedial Design/Remedial Action (RD/RA) Report*, as discussed in Section 6.3.3.3 below.

6.3.3.1.2 RDU 3 - Smelter Hill Uplands

The Agency-approved RDU 3 design and RA process is presented in the approved *Remedial Design Unit (RDU) 3 – Smelter Hill Uplands Draft Final Design Report (FDR)* (Site Document Register No. 603-05-26) and the approved *Remedial Design Unit (RDU) 3 – Smelter Hill Uplands Draft Final Remedial Action Work Plan (RAWP)* (Site Document Register No. 603-05-25). In accordance with

the approved RDU 3 FDR/RAWP, and as directed under Administrative Order for Remedial Design/Remedial Action, Docket No. CERCLA-08-2016-0005, RA activities within RDU 3 commenced in 2020 and are anticipated to be substantially implemented by the end of 2024. Given the large quantity of steep slope remediation within RDU 3, it is anticipated that the tree and shrub component of the steep slope remediation remedy will extend into Fall 2025, depending on the yearly procurement quantity of plant materials. The ongoing work includes *in-situ* treatment, steep slope remediation, and installation of surface water BMPs/engineered controls. Portions of the remaining RA include remedial components included in the *Anaconda Surface Water Management Plan* and the *ARWW&S OU Supplemental Surface Water Controls Remedial Design/Remedial Action (RD/RA) Report*, as discussed in Section 6.3.3.3 below.

6.3.3.1.3 RDU 6 – South Opportunity Uplands

The Agency-approved RDU 6 design and RA process is presented in the approved *Remedial Design Unit (RDU) 6 – South Opportunity Uplands Final Design Report (FDR)* (Site Document Register No. 606-05-32) and the approved *Remedial Design Unit (RDU) 6 – South Opportunity Uplands Final Remedial Action Work Plan (RAWP)* (Site Document Register No. 606-05-31). In accordance with the approved RDU 6 FDR/RAWP, and as directed under Administrative Order for Remedial Design/Remedial Action, Docket No. CERCLA-08--2007-008, RA activities within RDU 6 commenced in 2008 and have been intermittently performed and are anticipated to be substantially implemented by the end of 2022. The outstanding work includes remediation of areas determined to be of potential historic/cultural significance.

6.3.3.1.4 RDU 9 – Fluvial Tailings

The Agency-approved RDU 9 design and RA process is presented in the approved *Remedial Design Unit (RDU) 9 – Fluvial Tailings Final Design Report (FDR)* (Site Document Register No. 609-05-1) and the approved *Remedial Design Unit (RDU) 9 – Fluvial Tailings Final Remedial Action Work Plan (RAWP)* (Site Document Register No. 609-05-2). In accordance with the approved RDU 9 FDR/RAWP, and as directed under Administrative Order for Remedial Design/Remedial Action, Docket No. CERCLA-08--2010-005, RA activities within RDU 9 commenced in 2010 and have been intermittently performed and are anticipated to be substantially implemented by the end of 2022, pending landowner access. The outstanding work includes *in-situ* remediation via tillage.

6.3.3.2 Outstanding RA

RA activities have not commenced within a small number of RDUs within the ARWW&S OU, as discussed in the following Subsections.

6.3.3.2.1 RDU 2 Lost Creek Uplands

Minimal work within RDU 2 has been performed to date. It is anticipated that, pending regulatory directive, in accordance with the *Remedial Design Unit (RDU) 2 – Lost Creek Final Design Report (FDR)* (Site Document Register No. 602-05-24) and the approved *Remedial Design Unit (RDU) 2 –*

Lost Creek Uplands Final Remedial Action Work Plan (RAWP) (Site Document Register No. 602-05-23), RA activities within RDU 2 will commence in late 2022 and will be substantially implemented by 2024. Outstanding work includes *in-situ* treatment, steep slope remediation, and installation of surface water BMPs/engineered controls. Portions of the remaining RA include remedial components included in the *Anaconda Surface Water Management Plan* and the *ARWW&S OU Supplemental Surface Water Controls Remedial Design/Remedial Action (RD/RA) Report*, as discussed in Section 6.3.3.3 below.

6.3.3.2.2 RDU 12 Main Granulated, West Stack, and Anaconda Landfill Slag Piles

The ARWW&S OU ROD and the 2020 ARWW&S OU ROD Amendment allow for reuse of smelter slag from the MGS, WSS, and ALS Piles for certain approved uses, consistent with the requirements of applicable federal and state environmental and health and safety regulations regarding the reuse, reprocessing, disposal, and transport of the slag material, as approved by EPA.

Remediation of the MGS, WSS, and ALS Piles will be implemented pursuant to and performed in accordance with the *Slag Management Plan, Remedial Design Unit 12 – Slag, Main Granulated Slag Site (MGS Management Plan)* (Site Document Register No. 612-12-782); the *Slag Management Plan, Remedial Design Unit 12 – Slag, West Stack Slag Site (WSS Management Plan)* (Site Document Register No. 612-12-780); and the *Slag Management Plan, Remedial Design Unit 12 – Slag, Anaconda Landfill Slag Site (ALS Management Plan)* (Site Document Register No. 612-12-935). The RA for the Slag Piles is summarized below.

MGS Pile

A partial cover shall be implemented by 2026 over the north and west facing slopes of the MGS pile as an interim management practice to control potential slag migration and improve aesthetics. Management components for the MGS pile consist of grading portions of the pile to a slope no steeper than a 3:1 ratio; constructing a partial cover with 12-inches of soil; and establishment of vegetation on the partial cover. A Partial Cover Work Plan shall be provided by 2024 (one year prior to construction) for approval by EPA.

Within 90 days following permanent suspension of slag processing operations at the MGS Pile or upon a finding by EPA that operations or conditions present an unacceptable risk to human health or the environment (whichever occurs first), a RDWP for final closure of the pile will be submitted to the Agencies for review and approval. A detailed design shall be presented in a Final RAWP and will be provided to EPA and DEQ for review and approval.

WSS and ALS Piles

Within 90 days following permanent suspension of slag processing operations at the WSS Pile or ALS Pile, or by the end of 2025 if no processing is initiated by that date, or within 90 days after a finding by EPA in that operations or conditions present an unacceptable risk to human health or the environment (whichever occurs first), a RDWP for final closure of the WSS Pile or ALS Pile will be

submitted to the Agencies for review and approval. Final closure of the WSS Pile or ALS Pile consists of grading of the slag based on final post-processing configuration to slopes no steeper than a 3:1 ratio; installation of an 18-inch cover; establishment of vegetation; and management of surface water (from an existing drainage up-gradient of the WSS Pile; or as needed at the ALS Pile). A detailed design for the WSS Pile or ALS Pile shall be presented in a Final RAWP and will be provided to EPA and DEQ for review and approval. The implementation of RA at the ALS pile will depend on when and whether the owner and operator of the pile agrees to perform the work or agrees to or is ordered to provide safe access to the property where RA is required.

6.3.3.3 Supplemental Surface Water RD/RA

In support of the 2017 TI Report, supplemental surface water controls (i.e., BMPs, additional slope work, and engineered controls) have been added to the Surface Water Remedy for the Site to address surface water quality improvements in select drainages in accordance with the *Anaconda Surface Water Management Plan* and the *ARWW&S OU Supplemental Surface Water Controls Remedial Design/Remedial Action (RD/RA) Report*.

The Scope of these Supplemental Controls includes installation of check dams in multiple drainages, vegetation enhancement of barren areas within and adjacent to the upland RDUs, and construction of engineered controls in select locations along with monitoring and maintenance. These Supplemental Controls shall be incorporated into the RDU 1, 2, and 3 RAs through the RFC process. It is anticipated that many of the drainage BMPs and vegetation enhancement components will be implemented concurrently with the RDU 1, 2, and 3 RAs; however, construction of the engineered controls (i.e., sediment basins) and vegetation enhancement activities in areas outside the RDU boundaries may be performed at different times.

6.4 Vegetation/Erosion Performance Monitoring and Maintenance

Monitoring and maintenance of the remedy following completion of construction activities shall be ongoing as detailed in Sections 8 and 9 of this SMP.

6.5 Surface Water Compliance Monitoring

Surface water performance monitoring in support of the soils/waste remedies is detailed in Section 8 of this SMP.

7.0 REMEDIAL ACTION IMPLEMENTATION

Implementation of prescribed remedies at the Site, as described in area-specific RAWP/FDR/ISWPs and the *ARWW&S OU Supplemental Surface Water Controls Remedial RD/RA Report*, consists of pre-construction planning and field activities, RA construction, and post-RA documentation and initial monitoring and maintenance activities. This Section presents a general guide to RA implementation at the three Active OUs at the Site (i.e., OW/EADA OU, CSOU, and ARWW&S OU), developed to ensure that RA construction projects are initiated with Agency and PRP concurrence, completed in accordance with the requirements for construction to meet the Performance Standards presented in each RAWP/FDR/ISWP (as modified by applicable approved design changes), the *ARWW&S OU Supplemental Surface Water Controls RD/RA Report*, the SOW, and this SMP, and documented appropriately through the submission and subsequent approvals of the CCRs and operational and functional (O&F) determinations, prior to entry into the Monitoring and Maintenance phase (*see* Section 8) and progression toward RA Completion (*see* Section 11).

RA at the Site is implemented differently within the different OUs. As previously discussed, the CSOU remedy addresses impacts within residential areas (i.e., towns of Anaconda and Opportunity as well as rural residential areas). The ARWW&S OU addresses impacts primarily within the surrounding upland areas. The OW/EADA OU primarily addresses impacts within commercial/industrial areas. Overlap between the areas does exist and RA is coordinated utilizing the appropriate remedial requirements. Section 7.1 details the RA implementation steps taken at the ARWW&S and OW/EADA OUs, while Section 7.2 below details the remedial action steps taken at the CSOU.

7.1 ARWW&S and OW/EADA RA Implementation

7.1.1 Pre-Construction Planning and Field Activities

Section 6 presents the provisional schedule for RA activities at the Site. To the extent possible, RA projects will be prioritized and scheduled 1-2 years in advance of construction, with the proposed RA schedules being updated in the SMP Annual Reports (*see also* Section 3.7). Although the RD for each RDU has been completed and the associated FDR/RAWPs have been approved by the Agencies, additional pre-construction planning is required once an RA project is scheduled. Some pre-planning activities require significant lead-time, sometimes 6 months to 2 years ahead of construction, to allow time for adequate coordination and additional approvals. Other pre-construction activities may require 6 months or less of lead-time or may not be appropriate until an RA contractor has been selected for a given project and is available to provide input to the project plan. Landowner access, availability of materials, and Agency review of deliverables may impact these timelines. To facilitate planning and Agency coordination prior to initiating each RA scope of work, a Pre-Construction Checklist has been provided in Appendix C of this SMP for use by managers of RA projects at the Site. Many of the considerations identified in this Section will be prompted and tracked by initiating the Pre-Construction Checklist for each project during the initial Pre-Construction Conference.

Typical pre-construction planning and field activities, including those identified on the attached checklist, are listed below, and described in the following Subsections:

- Pre-Project Planning Items (6 months to 2 years ahead of construction):
  - Pre-Construction Conference
  - Cultural and Historic Resources
  - Environmental Mitigation
  - Remedy Confirmation and Data Gap Evaluations
  - Design Changes
  - Material Requirements
  - Landowner Coordination
  - Pre-Construction Weed Management

- Pre-Mobilization Planning Items (0 to 6 months ahead of construction):
  - Scope of Work Submittal
  - Pre-Construction Walkthrough
  - Mitigation of Off-Site Impacts (e.g., BMPs, dust, traffic, noise)
  - Utility Considerations
  - Boundary Staking and Adjustments
  - Vegetation and Habitat Preservation
  - Equipment Limitations
  - Pre-Construction QA/QC
  - Material Delivery/Quality Testing

7.1.2 Pre-Project Planning

Once a RA project is scheduled, pre-project planning activities are typically initiated as early as 2 years ahead of construction and may continue until project kickoff. These early planning stage activities generally consist of stakeholder coordination and refinements/clarifications to the approved design to ensure the RA scope of work is agreed on and provisions are in place prior to selecting a contractor to complete the work. The following Subsections describe major pre-project planning considerations, identifying the various parties involved and anticipated lead time required for each activity.

7.1.2.1 Pre-Construction Conference

Once an RA project has been targeted for implementation, a Pre-Construction Conference will be scheduled within the preceding 1 to 2 years that includes appropriate representatives from AR and the Agencies to identify and formulate a plan to address outstanding issues prior to finalizing the scope of work for RA construction. Additional personnel involved in the conference also may include the project oversight team, design engineer, contractor (if one has been selected), and affected landowners, as appropriate at this point in the planning process.

The primary purpose of the meeting will be to review the previously approved designs for the project area, as presented in the appropriate FDR/RAWPs, and to evaluate approaches for executing the approved work plans considering current circumstances that may have the potential to affect the manner in which the RA is implemented. Because many of the FDR/RAWPs for areas at the Site have been developed multiple years prior to RA implementation, consideration must be given to any changes in site conditions, stakeholder interests, land use practices, environmental standards, remedial goals, and/or new methods or technologies that may have transpired in the years since their initial approval. Additionally, some elements of the remedies presented in the approved FDR/RAWPs may need further evaluation at the time of RA construction and incorporation of the additional designs presented in the *ARWW&S OU Supplemental Surface Water Controls Remedial RD/RA Report*. These items typically include field reconnaissance and assessments to identify material requirements and suitable sources, areas of potential cultural or historical significance, areas requiring pre-construction weed management, site access limitations, potential environmental impacts, possible third-party permitting requirements (e.g., encroachment permits, permits for work within a utility easement), and/or special design considerations (e.g., utilities, stream crossings). Additional considerations may include lessons learned from previous projects, remedy confirmation requirements, key scheduling and sequencing constraints (e.g., seasonal requirements, up-gradient controls, critical milestones), recordkeeping and submittal requirements, use of premises and staging/storage procedures, and health and safety concerns.

The end goal of the Pre-Construction Conference will be to emerge with a clear understanding of the action items, required lead-times, and responsibilities assigned to each party to address outstanding issues and ensure successful implementation of the RA and ultimate achievement of applicable Performance Standards. The Pre-Construction Checklist (Appendix C) for the project will be initiated as part of the Pre-Construction Conference and will be used to prompt discussions and track progress in addressing outstanding items. As a result of this meeting, the need for additional consultation/coordination and/or field assessments will be identified and scheduled. Site-specific issues identified during the conference or initial site walkthroughs may require additional consultation or site visits by qualified personnel prior to finalizing the scope of work or initiating construction activities within the proposed project area. To the extent needed, subsequent meetings and/or site visits will be conducted to address site-specific issues that may influence RA performance.

The results of this Pre-Construction Conference will be summarized in the Annual SMP Report as part of the RA status update for the Site. The summary will include the Pre-Construction Checklist, as completed to date; identification of future submittals such as ISWPs, Requests for Changes, QAPP addendum for additional characterization and/or confirmation sampling, and other documentation regarding changes of clarifications of the previously approved RAWPs; and a provisional schedule for completion of these deliverables and activities. The purpose of including this information is to inform and obtain the approval of Agency project coordinators / officers of the process agreed upon to move the project forward in accordance with ROD, ROD Amendment, and ESD requirements, as many of the RAWPs were completed before ROD Amendments and/or ESDs were completed, and

updated Construction Quality Assurance Plan (CQAP) and technical specifications were developed under this SMP.

7.1.2.2 Cultural and Historic Resources

The 2022 *Cultural and Historic Mitigation and Preservation Plan* (Site Document Register No. 100-12-921) summarizes all historic mitigation and preservation conducted to date, remaining historic mitigation requirements identified in the approved FDRs/RAWPs, and modifications to those requirements after those FDRs/RAWPs were approved based on changes to those documents through the CCRs, annual EPA Reports prepared pursuant to the Second Programmatic Agreement, and other agreements between the parties. The *Cultural and Historic Mitigation and Preservation Plan* sets forth the agreed upon process to be followed during RA implementation for addressing previously undiscovered and undocumented cultural and historic properties within the Site.

7.1.2.3 Environmental Mitigation

Potential impacts and mitigation measures, as necessary, to wetlands, streams, and threatened or endangered species will be evaluated early in the pre-construction planning process for each RA project area. Review of design documents, site location maps, and other relevant information will be completed during the Pre-Construction Conference to identify the presence of resources with the potential to be adversely impacted during performance of the RA. If it is unclear during the conference the extent to which these resources exist or have the potential to be impacted, an initial site visit will be scheduled with appropriate personnel to identify and further evaluate sensitive features or species in the field. Additional evaluations, including field inspections and consultation with appropriate entities (e.g., FWP, USFWS), will be scheduled with sufficient lead-time ahead of construction if Agency representatives determine environmental resources are present that require further discussion. Mitigation procedures for each of these resources at the Site are discussed in the following Subsections.

7.1.2.3.1 Wetlands

Wetlands are defined as those areas that are inundated or saturated by groundwater or surface water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. The regulatory guidelines for wetlands at the Site arise from Section 404 of the CWA, which regulates the discharge of dredge or fill materials into aquatic ecosystems, and Executive Order 11990, which sets forth a national policy of minimizing losses and adverse impacts to wetlands. Regulatory guidelines for wetlands also are established in the Memorandum of Agreement (MOA) of February 6, 1990 between the EPA and the U.S. Army Corps of Engineers (USACE) (often referred to as the "Mitigation MOA"), which articulates the national "no net loss" wetlands policy and goals and provides guidance for implementing this policy.

To meet regulatory requirements for wetlands at the Site, it is necessary to determine where jurisdictional wetlands exist and what functional values such wetlands provide. This information is

then used to develop an accounting of losses and gains of wetland functional value from pre- to post-remediation conditions. To meet this objective, a Four-Step Wetlands Mitigation Process was established for all Superfund sites in the UCFRB, which is documented in AR's letter to the EPA on January 27, 1992, and corresponding *Evaluation Form for Determining Wetland Functional Value and Effective Wetland Area in Upper Clark Fork River Superfund Sites* (Site Document Register No. 100-11-585). The Four-Step Wetland Mitigation Process allows for comparisons to be made of the pre- and post-RA Functionally Effective Wetland Areas (FEWA) to evaluate and summarize the success for projects in meeting the "no net loss" wetlands goal at Superfund sites within the UCFRB. The four-step process for the Site accounts for RA impacts to wetlands within the ARWW&S and OW/EADA OUs.

AR began the process to delineate and inventory wetlands (and threatened and endangered species) within the UCFRB in 1989. The *Upper Clark Fork River Wetlands Mitigation Process Status Summary Report* (1999) summarizes all wetland assessment work completed in the UCFRB through May 1999, including the initial Step 1 through 4 assessments for the Site, which quantified delineated wetland areas, wetland functional value, and FEWAs. Since 1999, additional Step 3 assessments (detailed analysis of impacts) and Step 4 assessments (confirmation of response action impacts) have been performed within the Site and documented in separate reports that have been submitted to EPA. The following is a status summary of the Four-Step UCFRB Wetland Mitigation Process as applied to the Site:

- Step 1 – Wetland Identification and Delineation: This step includes initial identification and delineations to determine the approximate presence, size, and functional value of wetlands at the Site prior to implementing RA. For the Site, this step is documented in the *Wetlands and Threatened/Endangered Species Inventory with Determination of Effective Wetland Area: Anaconda Smelter NPL Site* (Site Document Register No. 600-15-529).
- Step 2 – Preliminary Analysis of Impacts: This step forecasts changes to the wetland areas and functional rating as a result of implementing remedial action alternatives. Step 2 for the ARWW&S OU was completed in 1997 and documented in the *Draft Feasibility Study Deliverable No. 5, Detailed Analysis of Anaconda Regional Water, Waste, and Soils OU* (1997). A Step 2 assessment was not formally conducted for the OW/EADA OU; however, evaluation of wetland impacts was considered as part of the FS for the OU.
- Step 3 – Detailed Analysis of Impacts: This step includes a detailed field assessment to delineate the boundary and functional rating of wetland areas prior to implementing RA construction. The detailed field assessment and resulting data serve as the baseline for pre-RA wetland areas and functional ratings to which post-RA wetland areas and functional ratings are compared. If additional wetland areas are identified prior to or during completion of the RA that were not assessed under this step, then a detailed field survey delineating the pre-RA boundary and functional value of the additional wetlands is required. This step has been completed for all areas where wetlands have been identified at the Site to date.

- Step 4 – Confirmation of Response Action Impacts: This step occurs after RA has been completed and includes, if wetlands are present, a detailed field assessment to determine boundaries and functional score of wetland areas post-RA. Typically, this step occurs after wetlands vegetation has matured following RA, which can occur anywhere from 1 year to 10 years following remedy implementation, depending on the intensity of work that occurred in the wetland. This step includes a comparison with pre-RA wetland areas and functional scores to develop an accounting of gains and losses and track wetland mitigation across the Site.

The following table provides a status summary of the most recent completed Wetland Step Assessments.

Operable Unit	Sub-Unit (Subarea, RDU, or Assessment Areas)	Pre-Response FEWA Wetland Area	Post-Response FEWA Wetland Area	Pre- to Post-Response FEWA Acres Change	RA Status	Most Recent Step Assessment Completed	Most Recent Step Assessment Report Reference
Anaconda Regional Water, Waste & Soils	RDU 1 - Stucky Ridge	6.16	NC	NA	RA In Progress	Step 3 (2005)	*Draft Final 2005 Wetlands Mitigation Process Step-3 Detailed Analysis* (Site Document Register No. 600-15-105)
	RDU 2 - Lost Creek	15.06	NC	NA	RA Not Started	Step 3 (2005)	*Draft Final 2005 Wetlands Mitigation Process Step-3 Detailed Analysis* (Site Document Register No. 600-15-105)
	RDU 3 - Smelter Hills Upland	26.11	NC	NA	RA In Progress	Step 3 (2006)	*Draft Final 2006 Wetlands Mitigation Process Step-3 Detailed Analysis* (Site Document Register No. 600-15-220)
	RDU 4 - Anaconda Ponds	0.00	0.00	0.00	RA Complete	Step 4 (2006)	*Draft Final Anaconda Ponds Remedial Design Unit (RDU) 4 Wetlands Mitigation Process, Step 4 – Confirmation of Response Actions* (Site Document Register No. 604-15-302)
	RDU 5 - Blue Lagoons/ Active Railroad	3.36	NC	NA	RA Complete	Step 3 (2005)	*Draft Final 2005 Wetlands Mitigation Process Step-3 Detailed Analysis* (Site Document Register No. 600-15-105)
	RDU 6 & 9 [1] - South Opportunity Uplands/ Fluvial Tailings	1,111.79	NC	NA	RA In Progress	Step 3 (2006)	*Draft Final 2006 Wetlands Mitigation Process Step-3 Detailed Analysis* (Site Document Register No. 600-15-220)
	RDU 7 - North Opportunity Uplands	17.04	NC	NA	RA Complete	Step 3 (2004)	*Draft Final 2004 Wetlands Mitigation Process Step-3 Detailed Analysis* (Site Document Register No. 600-15-308)
	RDU 8 - Opportunity Ponds	408.62	NC	NA	RA Complete	Step 3 (2004)	*Draft Final 2004 Wetlands Mitigation Process Step-3 Detailed Analysis* (Site Document Register No. 600-15-308)
	RDU 10 - Warm Springs Creek	226.31	NC	NA	RA In Progress	Step 3 (2007)	*Draft Final 2007 Wetlands Mitigation Process Step-3 Detailed Analysis* (Site Document Register No. 600-15-332)
	RDU 11 - Cashman Concentrates	0.00	0.00	0.00	RA Complete	Step 4 (2006)	*Draft Final Cashman Concentrates Remedial Design Unit (RDU) 11 Wetlands Mitigation Process, Step 4 – Confirmation of Response Actions* (Site Document Register No. 611-15-314)

	RDU 12 - Slag	0.00	0.00	0.00	RA Complete	Step 4 (2006)	*Draft Final Main Granulated Slag, Landfill Slag, and West Stack Slag Remedial Design Unit (RDU) 12 Wetlands Mitigation Process, Step 4 – Confirmation of Response Actions* (Site Document Register No. 612-15-307)
	RDU 14 - Smelter Hill Facilities	8.26	NC	NA	RA In Progress	Step 3 (2006)	*Draft Final 2006 Wetlands Mitigation Process Step-3 Detailed Analysis* (Site Document Register No. 600-15-220)
	RDU 15 - Mt. Haggin	11.82	NC	NA	RA Not Started	Step 3 (2003)	*Final 2003 Wetlands Mitigation Process Step-3 Detailed Analysis* (Site Document Register No. 600-15-309)
	West Galen Expansion Area	9.25	NC	NA	RA In Progress	Step 3 (2005)	*Draft Final 2005 Wetlands Mitigation Process Step-3 Detailed Analysis* (Site Document Register No. 600-15-105)
	Dutchman Expansion Area	1,715.00	2,232.22	210.22[2]	RA Complete	Step 4 (2012)	*Final Dutchman Riparian Lands Wetlands Mitigation Process Step 4 Confirmation of Response Actions* (Site Document Register No. 617-15-535).
ARWW&S TOTALs (To Date)		**3,558.76[3]**	**1,9255.22[2]**	**-1,633.54**			
Old Works/ East Anaconda Development Area	Warm Springs/ Mill Creeks	39.3	39.3	0.0	RA Complete	Step 4 (1999)	*Wetlands Mitigation Process, Step 4 – Confirmation of Response Actions: Old Works/East Anaconda Area Operable Unit* (Site Document Register No. 400-15-521)
	Upland AA	14	20.9	6.9	RA Complete	Step 4 (1999)	*Wetlands Mitigation Process, Step 4 – Confirmation of Response Actions: Old Works/East Anaconda Area Operable Unit* (Site Document Register No. 400-15-521)
OW/EADA TOTALs		**53.3**	**60.2**	**+ 6.9**			

Notes:
NC – Not Complete
NA – Not Applicable

[1] Boundaries between natural and flood irrigated wetlands in RDU 6 and RDU 9 were indistinguishable, therefore 967.46 FEWA acres from the 1999 Step 1 analysis were carried forward and are represented in this table with the combined RDUs. The Step 4 process will be consistent with the accounting decisions from Step 3 for RDU 6 and 9, with 967.46 FEWA acres carried over to Step 4 because irrigated wetlands would not be lost due to RA impacts. The Step 3 calculation for RDU 6 and 9 is 144.33 + 967.46 = 1111.79.

[2] 307 FEWA acres were used to meet the substantial requirements of the *Streamside Tailings OU Consent Decree* for restored wetlands.

[3] Total Pre-response FEWA acres does not include Step 3 wetlands that lie outside of RDU boundaries.

Wetlands located within or adjacent to work areas will be delineated and flagged prior to initiating remedial activities by a qualified wetlands scientist familiar with the four-step UCFRB Wetlands Mitigation Process. For project areas where RA work has the potential to impact wetlands directly, remedy boundaries may be adjusted to allow for buffer zones adjacent to wetland features and storm water BMPs may be installed along wetland boundaries to provide a visual indicator of the wetland boundary and capture potential sediment runoff that could occur. The need for these and/or other wetland mitigation options will be discussed during the Pre-Construction Conference, while minor boundary adjustments and BMP selections may occur during the Pre-Construction Walkthrough, as discussed in Section 7.1.2.1

7.1.2.3.2 Wildlife/Threatened and Endangered Species

EPA completed a Site-Wide Biological Assessment in 2020 for the remaining remedial work at the ARWW&S OU and received USFWS concurrence that minimal impacts to sensitive, threatened, and endangered plant and wildlife species will occur through the proposed RAs. In accordance with Site ARARs, the potential to impact sensitive species or their habitats while preforming a given RA project will be discussed at the Pre-Construction Conference. If it is suspected based on location or site characteristics that sensitive species or their habitat exist within the project area, an initial site visit will be scheduled with appropriate personnel to identify and further evaluate potential impacts associated with the proposed work. If it is known that sensitive, threatened, or endangered species exist within or adjacent to the project area, or if a project is proposed in an environmentally sensitive area (e.g., streams or riparian corridors), then additional evaluations, field inspections, and/or consultation with appropriate entities (e.g., FWP, USFWS) will be scheduled with sufficient lead-time ahead of construction to properly mitigate impacts. Otherwise, if there is little reason to suspect their presence in the project area, sensitive species and/or their habitats will be addressed in the event they are encountered during pre-construction field activities and performance of RA construction.

The ARWW&S OU ROD requires compliance with ARARs for sensitive species, as identified in the approved FDR/RAWPs for each work area. Therefore, if endangered species or migratory birds or their nests are encountered within the project area during pre-construction field activities, the appropriate Agency representatives will be notified, and provisions may be added to the scope of work ahead of construction to mitigate impacts. These provisions may include identification of habitat areas to avoid and/or installation of protective BMPs. Special care also should be taken whenever possible to avoid disturbance to large mature vegetation and wetland areas while implementing the RA where sensitive species could live or nest. If these species or their habitats are encountered during performance of the RA, Agency oversight personnel will be notified, and construction activities will stop in that area until the species are no longer present, or continuation of the work no longer interferes with the species. Any endangered species or migratory birds observed by project personnel will be documented in the CCR.

7.1.2.3.3 Construction Best Management Practices (BMPs)

A major focus of the Pre-Construction Conference will be identification of design elements and construction practices that minimize sediment transport to down-gradient receptors. Pre-construction considerations for such work include, but are not limited to, seasonal constraints, contaminant removal criteria, critical habitat to protect or avoid, stream stabilization techniques, requirements for designed structures, floodplain and wetland impacts, construction BMPs (such as silt fences, wattles, and vegetated buffers, as further discussed in Section 7.1.3.1), temporary construction crossings, fish capture/relocation plans, and post-RA monitoring and Performance Standards. Early coordination with project area landowners also may be required to establish project area access and/or grazing management requirements that are protective of the completed remedies (e.g., installation of fences, designated livestock watering structures).

Construction activities generally proceed from upgradient to downgradient to avoid impacting previously remediated segments and are limited as much as possible to localized areas of disturbance to minimize the amount of area exposed at a given time. Required construction BMPs will be evaluated during the Pre-Construction Walkthrough (*see* Section 7.1.3.1) to proactively mitigate sediment transport to downgradient areas or other potential environmental impacts potentially resulting from performance of the RA. A major objective of the RA also will be to reclaim near natural drainages as soon as possible with appropriate erosion control measures and vegetation to provide both short- and long-term stability following remediation.

7.1.2.4 Remedy Confirmation

Because the Site is large and includes ongoing development and changing land uses, and most RA projects will be initiated multiple years after approval of the area-specific FDRs/RAWPs, consideration must be given to whether the approved remedies are still implementable and appropriate to meet the current and anticipated remedial goals for each project area prior to finalizing the project scope of work. Remedy confirmation activities may include remedy adjustments or refinement, outer boundary evaluations, and identification of post-RA remedy confirmation requirements. In some instances, additional site characterization and collection of additional data may be required to fill identified data gaps and support the remedy confirmation process. The appropriateness of prescribed remedies and the need for data gap evaluations and/or possible remedy adjustments or refinements should initially be discussed at the Pre-Construction Conference with necessary field activities scheduled early in the pre-construction planning process. RFCs will be prepared summarizing modifications to the remedy based on findings from the Pre-Construction Conference and/or additional data collection.

7.1.2.4.1 Remedy Refinement

At a minimum, the previously approved remedies will be evaluated for appropriateness and constructability in proximity to infrastructure or development areas (e.g., existing residences, highways, utility corridors, planned developments) or in areas that could present equipment access or safety limitations (e.g., steep slopes). Most of these issues can be addressed through relatively

minor remedial boundary adjustments performed during the Pre-Construction Walkthrough with Agency and AR personnel (*see* Section 7.1.3.1). Occasionally, an approved remedy might require modification or intensification due to changes in land use (and associated action levels) or the desire to remediate a property to a less restrictive land use category (i.e., Category 1) under the VMP. This will require review of existing data or collection of additional samples (e.g., Land Reclamation Evaluation System (LRES) Phase III sampling) to develop confidence that the previously approved or modified/intensified remedies will achieve current remedial goals and requirements. If a high level of confidence exists that the remedy can achieve Category 1 levels under the VMP, a Field Implementation Plan (FIP) under the *Anaconda Smelter NPL Site Final Site-Wide Confirmation QAPP* (Site Document Register No. 100-23-618) shall be prepared.

Some portions of the remedy may have additional design components that require refinement to accommodate site characteristics or other remedy modifications that have been made. Examples include long-term designed storm water BMPs, such as those identified in the Storm Water Runoff Control Plans (SWRCPs) provided in certain RAWPs (*see* Section 7.2.2.2) and/or the Supplemental Surface Water RD/RA elements (*see* Section 5.5.18.1). Additionally, smaller or unique sites within larger work areas, such as facilities or residential yards, may require further site characterization on an individual basis with specific remedial designs developed in the form of ISWPs to augment the existing RAWPs. Field activities may be performed during remedy refinement to determine material requirements (e.g., soil amendments) in accordance with the approved remedies. Results from remedy refinement activities that include additional design information (e.g., amendment data, long-term BMP/Supplement Surface Water designs, or unique site characterization) or that support significant design changes (i.e., remedy modification or intensification) will require formal submittal and approval through the RFC process (*see* Section 7.1.2.5.1), as appropriate. Otherwise, relatively minor remedy adjustments that are identified in the field during the Pre-Construction Walkthrough will be documented in the project logs and included in the CCR.

7.1.2.4.2 Outer Boundary Evaluation

As remedial work proceeds near the outer boundaries of the RDUs / Subareas or extents of the remedial treatment polygons, questions may arise regarding the need to remediate additional areas outside of the remedial polygons that were previously delineated and approved in the FDR/RAWPs.

The first step in evaluating outer site boundaries or limits of treatment involves field reconnaissance of the boundaries as identified in the relevant FDR/RAWP to determine if natural or physical boundaries (e.g., breaks in landscape) are present that support the basis for the original delineations. Consistent with the approved designs, it is anticipated that many of the areas beyond the original boundaries will not require RA based on existing data or site conditions as compared with RAOs, Performance Standards, and modifying criteria established for the Site.

If areas outside of the identified treatment areas require additional evaluation, the second step is to determine if smelter-related impacts are present that necessitate RA. This involves review of existing data, current vegetation conditions, site characteristics, and land use, as well as additional data

collection as necessary to characterize potential impacts. The data is then compared against the established ecological and human health-based risk triggers for RA, as identified in the ARWW&S OU and CSOU RODs.

Ecological Risk Triggers

RAOs identified in the Site RODs for contaminated soils include the repair or establishment of permanent vegetative covers. Therefore, if vegetation conditions beyond an RDU boundary appear to be poor, as compared to established Sitewide performance criteria, then additional evaluation is required to determine if smelter-related contamination is a significant contributing factor. Additional soil sampling may be conducted to determine if soil pH is consistently depressed or if total metal concentrations (sum of As, Cu, and Zn) are exceeding the plant stress levels identified in the VMP. LRES vegetation scoring also can be performed for quantitative comparison against the targeted performance standard for the Site (i.e., 115 points). Modifying criteria should be considered as they pertain to observed vegetation conditions, such as land use, land management practices (e.g., grazing), weeds, soil texture/parent material, landscape position, etc. For example, sub-irrigated conditions may be ameliorating the potential phytotoxic effects of elevated metals in some areas, while grazing practices in other areas may be reducing cover in pastures with otherwise good plant densities. The objective is to determine if vegetation conditions are truly degraded, as compared to Sitewide performance criteria, and the level to which smelter-related impacts are contributing to observed plant stress as opposed to other non-Superfund related factors.

Human Health Risk Triggers

The Site RODs define human health-based action levels for soil arsenic and lead concentrations for several different land uses at the Site. Soil arsenic or lead concentrations in exceedance of the action level identified for the current land use necessitate implementation of RA and/or ICs to be protective of human health. Therefore, review of existing soil data and possible collection of additional data may be performed for comparison against appropriate land use action levels. In some instances, this evaluation can be completed by reviewing previously collected data that was used as the basis for the original designs approved in the FDR/RAWPs. Situations that may warrant the collection of additional soil sampling include changes in land use, identified data gaps, or the potential to remediate a property to a less restrictive land use category (e.g., Category 1) under the VMP. If determined necessary, additional soil sampling will be performed in accordance with typical LRES Phase III data gap or CSOU protocols to allow for consistent evaluation using the remedial design logic established for the Site. In addition to soil arsenic and lead concentrations, other soil parameters may be analyzed for use in remedial design in the case that RA is triggered by identified contaminants.

If further evaluations identify smelter-related impacts, the final step is to formally delineate the additional areas requiring remediation consistent with the design logic presented in the applicable FDR/RAWP. Delineation of additional remedy areas will require on-site evaluations by Agency and AR personnel, and should utilize data points, natural boundaries, and observed site conditions (e.g., vegetation communities) as much as possible to define new treatment boundaries. Equipment and safety limitations also should be considered when evaluating boundaries to avoid future changes

during construction. Remedies from adjacent areas may be extended, as appropriate, or new remedial polygons may be assigned with different remedies if warranted by different site conditions. Additional soil sampling also may be required at this stage to refine the remedial requirements (e.g., soil amendment requirements). An RFC (*see* Section 7.1.2.5.1) will be prepared summarizing design information (e.g., soil sampling results, vegetation scoring) for areas requiring extended RA prior to revising the scope of work for RA construction.

7.1.2.4.3 Post-RA Remedy Confirmation

In addition to refining and modifying previously approved remedies and/or boundaries, post-RA Performance Standards and remedy confirmation requirements also must be reviewed and approved by the Agencies during the pre-construction planning stages. This is to ensure project remedies are implemented and verified in a manner that achieves established criteria and supports decisions for RA Completion (*see* Section 11). Pre-construction considerations may include plans to implement subgrade sampling to ensure adequate contaminated soils are removed during stripping activities, evaluation of post-RA inspection and maintenance requirements for vegetation and storm water controls, and identification of appropriate vegetation Performance Standards. Sampling or screening during RA to guide remedial efforts is usually included as part of the construction QA/QC procedures discussed in Section 7.2.3. Vegetation Performance Standards and monitoring, inspection, and maintenance requirements are outlined in the VMP and are further discussed in Sections 8 and 9 of this SMP. O&M procedures for storm water controls and non-vegetated covers are discussed in Section 9.

In instances where RA is performed with the additional goal of achieving Category 1 (unrestricted use) status under the VMP for a given project area, a FIP under the *Anaconda Smelter NPL Site Final Site-Wide Confirmation QAPP* will be prepared and a specific sampling and analysis protocol will be implemented to confirm that post-RA soil arsenic and lead concentrations have been reduced below 250 mg/kg and 400 mg/kg, respectively. Using available pre-RA data as inputs (i.e., sample data presented in the original designs or additional data obtained during the remedy refinement activities discussed above), the FIP utilizes the Visual Sample Plan (VSP) program in accordance with identified DQOs to develop a confirmation sampling plan that is of adequate size and spatial distribution to verify that residual concentrations of soil contaminants (i.e., As and Pb) have been reduced below the targeted action levels with a high degree of confidence. The VSP program was developed in cooperation with several federal agencies, including EPA, and has been selected as the appropriate tool to develop confirmation sampling frequencies so that data collected via the FIP have the required statistical confidence for decision making. In addition to establishing appropriate sampling frequencies, the confirmation sampling *Anaconda Smelter NPL Site Final Site-Wide Confirmation QAPP* and the FIP identify sampling and quality control procedures, laboratory methods, and requirements for field documentation, data management, data verification, and reporting. Remedy confirmation sampling is typically performed by oversight personnel in conjunction with other construction QA/QC activities (*see* Section 7.2.3). The quality of the collected environmental data and information is managed in accordance with the Sitewide QMP and DMP to

support decision making as discussed in Sections 4.0 and 11.0 (Data Management and RA Completion, respectively).

7.1.2.5 Design Changes

Design changes are anticipated for RA projects at the Site to address remedy refinements or boundary adjustments identified during the remedy confirmation process, as well as complexities encountered in the field and new remedial technologies that may have been developed or incorporated into the designs through the *ARWW&S OU Supplemental Surface Water Controls RD/RA Report* since approval of the FDR/RAWPs. It is intended that AR propose and the Agencies approve design changes when necessary to ensure that RA projects meet Performance Standards, after discussion by the parties of the reasons for the modifications, as well as proposed alternatives. It is advantageous to consider and identify possible design changes early in the pre-construction planning process to avoid potentially time consuming and costly changes to the scope of work once issued for construction. However, some design changes will not be identified until RA construction has been initiated with an RA contractor. The design change approval process and different types of anticipated changes are discussed in the following Subsections.

7.1.2.5.1 Request for Change (RFC) Process

To facilitate formal approval and documentation of changes to the RA that diverge from the original designs, an RFC will be prepared for Agency approval. The types of changes that typically require use of the RFC process include changes to remedy composition or intensity, use of new or improved technologies, changes in seed mixture or composition, changes with respect to the type and design application rate of soil amendments, or major boundary adjustments. Determination of whether a change requires an RFC will be made in consultation with Agency representatives during pre-construction or RA construction activities. Changes that generally do not require completion of an RFC include minor deviations from the design, such as slight modification of remedy boundaries, landowner seed mix modifications, slight alignment adjustments for storm water channels, or adjustments to components of the RA intended to be field-fit. Documentation of these minor deviations from the design is captured in the Daily Construction Reports and CCRs. Changes in construction techniques and generally how the RA is performed are considered means and methods and not a change to the design. Unless means and methods change results in the design not being achieved, such changes do not require special documentation.

Agency- approved RFCs will be maintained with the project records as an addendum to the scope of work. As a general rule, design changes should not be implemented until written approval of the relevant RFC is received from the Agencies, and any additional directives considered. All RFCs pertaining to a given project also will be discussed and included in the CCR.

For minor deviations from the approved RAWPs where a written RFC will not be completed, AR and the Agencies are required to discuss the deviation and AR must receive verbal approval from the Agencies prior to implementing the deviation. This discussion can occur in the field, over the phone, or in weekly progress meetings if the deviation is discussed prior to implementation of the change.

Once the discussion occurs, the deviation must be documented in the Daily Construction Report and included in the CCR.

7.1.2.5.2 Enhanced Design & Enhanced Reclamation

Enhanced design is a review of the design in areas where post-RA total metals concentrations in the soil are predicted to remain greater than moderate TMI levels as described in the VMP. Enhanced design elements may include stripping high contaminant impacted areas, cover soil application, and introduction of storm water engineered controls or special land use restrictions. Because of the time required to evaluate, develop, and approve additional or revised design elements, the need for enhanced design must be discussed during the Pre-Construction Conference with supporting activities scheduled to be completed early in the project planning process. Enhanced design elements generally result in design changes that require formal approval through the RFC process.

Enhanced reclamation elements consist of refinements or adjustments to the previously approved remedies to ensure the greatest potential for meeting identified remedial goals and Performance Standards for the project. In areas addressed by the FDRs/RAWPs, where no or limited sized engineered controls are proposed, the original designs have been re-evaluated for potential enhancements, such as applying soil amendments or installing additional BMPs, typically including hand-installed controls (e.g., slope wattles, check dams, brush boxes, erosion control blankets) in the *Supplemental Surface Water Controls RD/RA Report*. Most enhanced reclamation elements will be identified during remedy confirmation activities (*see* Section 7.1.2.4) or the Pre-Construction Walkthrough (*see* Section 7.1.3.1) and may include design reviews or field evaluations to assess soil amendment requirements and material sources (e.g., organics, alkaline products–commonly sugar beet lime [SBL], high-P fertilizer, etc.), tillage depth requirements (e.g., implementability and potential to further reduce soil COC concentrations), remedial boundaries, or prescribed seed mixtures. Enhanced reclamation components identified in the *Supplemental Surface Water Controls RD/RA Report* will require formal approval through the RFC process. Whether identified enhanced reclamation components result in design changes in other areas with adequately sized stormwater controls require formal approval through the RFC process will be determined with Agency representatives. However, any implemented enhanced reclamation elements will be documented in the CCR.

7.1.2.5.3 New or Improved Technologies

During the pre-construction planning phases, or as remediation progresses at the Site, it may be desirable to evaluate "new" remediation technologies or further refine or optimize existing remediation technologies. The evaluation of new technologies will generally include laboratory and/or field demonstrations to assess the effectiveness of new and unproven techniques. Different materials also can be assessed for their effectiveness in achieving established Performance Standards. Because of the significant lead time required to demonstrate and document the effectiveness of new technologies, the potential to use a newly proven technology to complete a given project will be discussed at the Pre-Construction Conference and may include review of previously completed

projects at similar sites, review of ongoing demonstration projects, and/or early scheduling of a new demonstration project prior to implementation.

Promising technologies or materials will be initially screened to determine if they represent an approach with the potential to improve RA effectiveness and implementability while reducing costs and meeting Performance Standards. Sufficient information and data will be required from the proponent of the new technology to perform this screening. Only technologies with supporting relevant information and data will be screened. The screening process also will consider the safety of the potential technology. If a new technology passes the screening phase, then AR and the Agencies will jointly determine whether a demonstration of the technology is appropriate, practicable, and implementable.

Implementing demonstration projects is a cost-effective means of evaluating the overall performance of a new technology prior to full-scale implementation. The ability for new technologies to meet established performance criteria can be evaluated in a controlled analysis against existing technologies while real-time information regarding costs, production rates, and effectiveness of various materials, techniques, and/or pieces of equipment is collected. Prior to implementing a demonstration project, a project-specific work plan identifying the scope, data quality objectives, purpose, and location of the field demonstration will be developed. This plan will outline the major details of the project including any sampling that is to occur, materials to be used, and a proposed schedule. Once a new technology has been demonstrated successfully and selected for use in a full-scale RA project, determination of whether or not implementation of the new technology requires an RFC will be made with Agency representatives, and the scope of work for RA construction will be revised accordingly.

It also is anticipated that RA contractors will propose modifications to existing remediation approaches to accommodate site conditions and as new or alternate equipment becomes available. Changes in construction techniques are considered means and methods, and generally not a new technology, unless the modifications fundamentally alter the remediation technique or result in the design not being achieved. It is not anticipated that minor modifications to existing technologies will require formal evaluation or approval via field demonstration or the RFC process. Rather, these scenarios will be reviewed by project personnel as they arise, and the need for formal evaluation or approval will be evaluated on a case-by-case basis prior to allowing implementation of a modified approach.

7.1.2.6 Material Requirements

Most remedial alternatives approved for use at the Site incorporate the use of locally acquired and/or delivered materials, such as soil amendments (e.g., SBL and OM), suitable cover soils, and revegetation materials (e.g., fertilizer, seed, and live plants). Materials required to complete RA construction are approved for use if they are proven to meet the material suitability criteria identified for the Site or as part of the project specifications. Therefore, suitable material sources must be identified, characterized, and approved for use with sufficient lead-time ahead of RA construction.

As discussed in the previous sections, pre-construction field activities may be required to determine or refine material requirements (e.g., soil amendments) for each project area in accordance with the approved remedies. Test pitting and collection of additional soil samples within a project area may be required to evaluate the types and quantities of soil amendments necessary to implement the RA (e.g., completion of the A-Horizon/OM Investigation). Borrow area characterization and permitting also may be required to ensure sufficient suitable soils are available to complete prescribed cover soil remedies.

Identification of the materials required to complete a given project will be discussed at the initial Pre-Construction Conference, as some materials used in the prescribed remedies require significant lead-time for procurement. Examples of materials that may require significant lead-time (i.e., 1 to 2 years) to secure the quantities needed for typical RA construction projects include nursery grown trees and shrubs, non-local soil amendments, and cover soil borrow sources that may require additional characterization or new permitting under Montana's Open Cut program. Materials with significant lead-times need to be identified and quantified during the early project planning stages, and early arrangements made for delivery or procurement so that adequate materials are on-site prior to RA construction.

Once material requirements are identified and sources are approved for use, additional QA sampling generally is required as materials are delivered to the Site. QA sampling is performed ahead of material use to ensure materials continue to meet suitability criteria and to make material quality corrections to the design application rates. Material QA sampling is generally performed during the pre-mobilization stage (*see* Section 7.1.2) and procedures for material sampling frequencies, timeframes, and parameters are provided in the Sitewide CQAP provided as Appendix D to this SMP.

7.1.2.7 Landowner Agreements

Because the Site encompasses the communities of Anaconda and Opportunity, as well as the surrounding rural population, remedial boundaries for the various RDUs extend across numerous properties owned by various government and private entities, including AR owned parcels. Access to private property will be required prior to performing RA implementation and monitoring and maintenance. Therefore, prior to construction activities, AR and each affected landowner must execute Landowner Access Agreements that allow AR and the Agencies access to the properties to complete pre-construction activities, RA construction, and post-RA monitoring and maintenance. For Category 1 properties in the ARWW&S OU uplands, this includes two years of weed spraying after properties have been determined to be O&F. AR may elect to carve out non-O&F portions of remediated Category 1 properties in order to release other O&F areas back to the landowner and may construct fencing or place other restrictions on the property to prevent unauthorized access to non-O&F areas to meet the Category 1 requirements for RA completion, as established in the VMP. Given the possible complexities of some landowner agreements to address special land uses, grazing management requirements, land management, etc., and to allow time to complete the pre-construction field investigations discussed above, initial contact with project area landowners should occur as part of the early pre-construction planning phases to facilitate access. The Agencies are not signatories

to the access agreement, but Agency access to private property is provided under the individual access agreements.

To the extent possible, RA activities will be coordinated with individual landowners to account for ongoing land use activities (e.g., livestock management, vehicle traffic and storage, vegetation establishment) and intended land use (e.g., development of landowner specific seed mixes, integration of site-specific structures such as roads). A summary of the RA to be performed on a given property will be provided in the landowner agreement and expectations for the final vegetation condition (e.g., typical upland grass cover) will be discussed with area landowners prior to initiating the RA. The landowner agreements also may include provisions for equipment access and staging requirements to support RA construction and pre- and post-RA maintenance activities.

In most cases, upon completion of RA construction activities and achievement of Performance Standards, property management reverts back to the landowner to manage the property to minimize erosion or degradation of the remedy (e.g., vegetation cover). For some properties, AR will be responsible for LTIM activities, as discussed in the VMP and Section 9 of this SMP.

7.1.2.8 Scope of Work Submittal

Upon completing pre-construction planning activities and identifying any changes or clarifications to the design or the manner in which the RA is to be implemented, the Scope of Work for RA construction will be finalized and submitted to the Agencies prior to its implementation in the field as the initial project RFC. The Scope of Work will accurately specify and control all work to be completed to implement the approved RD, as well as any RFCs that have been approved prior to construction. The Scope of Work shall include detailed descriptions of any design modifications/remedy intensifications, construction tasks (without contractor measurement and payment information specific to the contract), sequencing requirements, scheduling limitations, material requirements, and approved means and methods to complete the RA in accordance with the approved design. The Construction Storm Water Erosion Control Plan (CSWECP) and/or the SWRCP from the previously approved FDR/RAWP shall be included with identified erosion control measures and BMPs for the project. The Scope of Work also shall include construction drawings with details and the most current Sitewide or project-specific Technical Specifications that are relevant to the work. Current sitewide Technical Specifications are provided as Appendix E to this SMP.

7.1.3 Pre-Mobilization Planning

Pre-mobilization planning activities are typically initiated 0- to 6-months ahead of construction once the project design and Scope of Work are finalized. These later planning-stage activities generally consist of minor remedy adjustments, final field assessments, and construction planning to ensure all plans are in place and issues are addressed prior to initiating RA construction with an RA Contractor.

7.1.3.1 Pre-Construction Walkthrough

The Pre-Construction Walkthrough will be conducted with Agency and AR personnel prior to mobilizing an RA Contractor. The primary purpose of the walkthrough is to review the final design in the field and identify any minor changes or clarifications required prior to RA implementation. During the Pre-Construction Walkthrough, treatment boundaries will be staked in the field along design polygon boundaries and may be adjusted in some instances to reflect "in-the-field" conditions based on observed vegetation, soil conditions, and other physical site features (e.g., existing fences or site improvements). Other issues to be addressed during the site walkthrough include evaluation of proposed access and staging areas, proposed traffic routes, utility locations, areas to avoid (e.g., vegetation preservation areas, wildlife habitat), equipment limitations (e.g., steep slopes), construction BMP requirements (e.g., types, locations), and plans to mitigate other off-site impacts (e.g., dust, traffic, noise). As some of these issues require specific knowledge of equipment capabilities and safety limitations, it may be desirable to include an RA Contractor representative in relevant parts of the field evaluation. The Pre-Construction Checklist for the project (Appendix C) will be evaluated for completeness during the Pre-Construction Walkthrough, and plans will be formulated to address any outstanding items prior to initiating RA construction. Some items identified during the walkthrough may need to be deferred for further evaluation by on-site AR and Agency personnel once RA construction has been initiated.

7.1.3.2 Pre-Construction QA/QC

Field activities may be required to establish pre-construction QA/QC in accordance with the Sitewide CQAP, provided as Appendix D to this SMP. Pre-construction QA/QC activities are usually performed to establish pre-construction baselines for post-RA comparison and verification that remedy requirements are being achieved (e.g., tillage or soil placement depths), and to collect material quality data for the purpose of ensuring materials meet project specifications and for making quality corrections to design application rates in the field (e.g., for SBL and OM amendments). These activities typically include pre-construction surveys, material sampling, material submittal approvals, and verification of remedial elements intended to be field-fit (e.g., tree and shrub planting or streambank treatment locations). Implementation of additional QA/QC procedures during construction is further discussed in Section 7.3.3.

7.2 CSOU RA Implementation

Residential areas addressed under the CSOU remedy typically are defined as those areas within 125-feet of the exterior of a residence. Areas beyond 125-feet of the exterior of a residence are considered non-residential areas and are addressed as part of the ARWW&S or OW/EADA OUs. CSOU RA implementation for residential properties typically involves a two-year process that includes sampling of residential properties in one year and remediation of those properties, where necessary, the following year. The following Subsections describe the steps taken leading up to RA construction.

7.2.1 Landowner Access Agreements & Sampling

Landowner Access Agreements must be executed between AR and each landowner prior to sampling. Sampling access begins with a homeowner request. Once a request has been received an owner signed access agreement is obtained one of three ways: (1) a physical copy is mailed to the owner with a stamped return envelope; (2) a signature is obtained digitally while onsite via a tablet, or (3) the owner digitally signs the access agreement through the online sampling request portal.

Once a signed access agreement is obtained, the owner is notified before utility lines are located and the property is sampled. The owner is given the option to be on-site while the soil is sampled; however, owner presence is not required. Once the owner has been notified and utility locates have been completed, sample crews mobilize to the site and collect the necessary samples pursuant to the *CS OU Final Residential Soils/Dust QAPP* (Site Document Register No. 500-23-634).

7.2.2 Data and Validation

Strict chain of custody procedures are followed once the samples have been collected, and the property's samples are sent to an approved lab for analysis. Typical turnaround time is 14 days for the analysis electronic data deliverable (EDD) and an additional 14 to 20 days for the Level 3 reports.

Once the lab has completed the analysis and Level 3 reports, both are sent to a third-party validator for validation. Third-party validators provide a validation report and a validation EDD, which include any qualifier flags.

7.2.3 ISWPs, RA Access, and DSR

Concurrent with lab analysis and data validation, field observations and mapping are compiled into a GIS layer for the property, which provides square footage estimates for each of the yard components sampled. Once the analytical data has been received, data tables are created for each property with any arsenic or lead exceedances highlighted. Yard components corresponding to the exceedances are identified with the appropriate removal depth, and a property-specific ISWP is prepared.

As soon as the data validation is complete and the ISWPs have been generated, but prior to creation of a DSR, all data and ISWPs collected and created for the year are submitted to the Agencies for review and approval. Typically, the ISWPs and corresponding data packages are submitted in multiple submittals as the data becomes available.

Upon receipt of Agency approval of the ISWPs and corresponding data, homeowner letters are produced, which include a cover letter, the data tables, the property specific ISWP, and a remedial action access agreement, where necessary.

By early spring of the year following the residential sampling, a DSR is created and submitted to the Agencies for review and approval. Typically, a DSR contains a summary of the data collected, validation summaries for the year, sample location maps, field data sheets, validation reports, and data tables.

7.2.4 Pre-Construction Walkthrough

The Pre-Construction Walkthrough is conducted with the homeowner, the Agencies' field oversight representatives, AR, and contractor personnel prior to mobilizing to the site, with the main purpose of reviewing the final design in the field and identifying any minor changes or clarifications required prior to RA implementation. During the Pre-Construction Walkthrough, design boundaries may be adjusted in some instances to reflect "in-the-field" conditions based on physical site features (e.g., existing fences or large tree canopies). Other issues to be addressed during the site walkthrough include evaluation of proposed access and staging areas, proposed traffic routes, utility locations, areas to avoid (e.g., established trees or hedges, owner's prized rose bush), equipment limitations (e.g., low power lines, site ingress, steep slopes), construction BMP requirements (e.g., types, locations), and plans to mitigate other off-site impacts (e.g., dust, traffic, noise).

7.2.5 Material Requirements

Material requirements for the CSOU RA implementation are similar to what is described in section 7.1.2.6 with the addition of planning for acquiring sod and transporting it to the Site. Given the limited growing season, properties that require sod are prioritized during the sod growing season to minimize the length of time a property is left with bare soil. Properties that do not require sod are typically completed in the early spring or fall when sod is unavailable.

7.3 RA Construction (All Active OUs)

At all three Active OUs, RA construction consists of an RA Contractor executing a defined scope of work to implement the approved remedies for a given project area as identified and detailed in the applicable FDR/RAWPs. Further detail also may be incorporated into the scopes of work through pre-construction planning activities or ISWP development for project areas, as discussed in previous sections.

RA construction is performed under the direct oversight of AR, with work observed and checked by Agency personnel, to ensure remedies are implemented in accordance with the approved designs and specifications, and that they are appropriately verified and documented to fulfill Sitewide requirements for RA Completion (*see* Section 11). Project management requirements, including roles and responsibilities for successfully overseeing and implementing the RA, are identified in the FDR/RAWP packages, and are discussed in Section 3.0 of this SMP. The intent of this Section is not to reiterate the various remedial design components and methods for implementation that have been provided in the approved FDR/RAWPs, but instead to discuss activities that will be performed concurrently with RA construction to ensure the completed remedies meet RAOs, remedial requirements, and Performance Standards established for the Site.

7.3.1 Health and Safety

All RA work will be completed according to applicable local, state, and federal health, safety, and environmental laws and regulations. When work is directly conducted by AR, all work also will be conducted according to AR's current health and safety policies and procedures. All construction

projects completed by AR will be conducted under site-specific health and safety plans (HASPs), which will be submitted to EPA for the project records.

Consistent with the Agencies' responsibility to ensure that RA activities undertaken at the Site are protective of human health and the environment, project-specific HASPs are provided to EPA as an appendix to the CCR for inclusion in the project file. Although EPA does not specifically provide comment on or approve HASPs, it is required that these plans be developed and included in the project file for informational purposes and to document that HASPs are in place and being implemented during RA construction.

7.3.2 Environmental Controls

Airborne dust and particulates arising from disturbed project area soils will continue to be the primary environmental concern and consideration associated with RA construction. Off-site transport of sediments or pollutants by stormwater run-on or run-off or discharge into potential receiving waters also is a concern during RA construction. Design changes, remedy adjustments, and plans to mitigate potential impacts to sensitive wildlife and habitats within the project areas are addressed and incorporated into the project scopes of work during the pre-construction phases, as discussed in previous sections. The following Subsections outline how fugitive dust and sediments will be controlled and monitored during RA construction.

Fugitive dust generated from exposed soils or stockpiled materials (e.g., SBL, soil spoils) will be controlled during RA construction activities by utilizing BMPs and general proactive work practices. The *Final Opportunity Ponds Remedial Design Unit (RDU) 8 Dust Management Plan* (Site Document Register No. 608-12-438), although specific to the Opportunity Ponds RA, presents work practices and BMPs that are considered applicable for utilization throughout the remainder of the Site, as determined necessary. The Technical Specification Section 02400 and corresponding CQAP Section 02400 related to dust control, which originally were provided with the *RDU 8 Dust Management Plan*, are included in the Sitewide CQAP and Technical Specifications provided as Appendices D and E to this SMP. Primary dust control measures consist of regular applications of water to active haul routes, disturbance areas, or stockpiles during performance of the RA. Periodic equipment shutdowns, especially for dust generating activities such as SBL amendment application, are anticipated during high wind days as part of routine construction practices. Use of cover crops and soil stabilizing polymer in high profile areas also are common BMPs to mitigate early fugitive dusts prior to permanent vegetation establishment. It is expected that continued use of current work practices and implementation of BMPs outlined in the *RDU 8 Dust Management Plan* will continue to achieve dust control objectives for the Site throughout the remainder of the RA activities.

7.3.2.1 Air Monitoring

Based on experience and data collected from previously completed projects at the Site, worker exposure to COCs will continue to be significantly below any occupational health-based limits during normal RA construction activities. Personnel air monitoring for workers may still be completed, if determined necessary by individual contractors, but is not a requirement. Site monitoring is ongoing

in perimeter areas to the MGS Pile to monitor dust migration towards receptors from the MGS Pile. Additional air monitoring is not anticipated, but will be evaluated if dust concerns are observed.

7.3.2.2 Sediment and Erosion Control

Sediment and erosion control measures will be implemented during all RA construction activities, but are most relevant to ARWW&S OU RA activities. One of the primary goals of all remedial alternatives is to establish vegetation or stabilized surfaces, which in turn will decrease long-term erosion and sediment transport. The ARWW&S OU FDR/RAWPs include CSWECPs that identify temporary construction BMPs to be employed during construction and SWRCPs that specify where long-term erosion control BMPs will be implemented.

The CSWECPs detail requirements that the contractor must implement to control erosion during construction activities including, but not limited to:

- Sediment and erosion controls (e.g., construction BMPs);
- Storm water management controls (post-construction);
- Controls for pollutants other than sediment (e.g., fuel, oil, and lubrication product storage and spill prevention);
- Inspection and maintenance schedules; and
- Coordination of BMP installation with construction activity.

The SWRCP identifies longer-term BMPs (e.g., grade control structures and check dams) to control sediment and erosion in the short-term, while serving as part of the long-term remedy to assist in natural recovery of project area drainages.

The CSWECP and SWRCP provide construction techniques and inspection and maintenance requirements for construction and long-term BMPs, respectively. The intent is to provide a set of acceptable alternatives with the necessary specifications to ensure proper BMP selection, installation, and maintenance, while at the same time allowing the design or field oversight personnel the flexibility to address unique Site characteristics. The requirements and locations for BMPs should be proactively identified in the pre-construction phase, as evaluated during the Pre-Construction Walkthrough. Additional BMPs may then be implemented with oversight coordination to control unanticipated erosion or sediment transport resulting from field changes, extended shutdown periods, or conditions that develop as the work proceeds.

7.3.3 Construction QA/QC

The QMP has been prepared in support of the work addressed by this SMP, and it provides the framework to ensure quality in the environmental data and information collected for the Site. The QMP incorporates requirements and standard operating procedures for developing and implementing QAPPs, DSRs, and data validation for site characterization and remedy confirmation sampling. Once collected and validated under the QMP, environmental data for the Site is maintained in a GIS database under the DMP, as discussed in Section 4.

The QMP also incorporates construction QA/QC requirements identified in the Sitewide CQAP. The Sitewide CQAP has been included as Appendix D to this SMP, and it outlines the general QA/QC procedures for confirming and documenting that the RA is completed in accordance with the requirements and Performance Standards presented in each FDR/RAWP. Additional construction QA/QC procedures may be specified for tasks not addressed by the Sitewide CQAP, as identified with Agency coordination in the design or pre-construction planning phases for specific RDUs or project areas. Requirements and tolerances for performing RA construction tasks are provided in relevant sections of the Technical Specifications (Appendix E), while the CQAP identifies the procedures for sampling, field-testing, construction inspection, material verification, and equipment calibration to ensure proper implementation of the RA. Additionally, the CQAP provides project communication, documentation, and record keeping protocols for project oversight personnel. AR will provide QA/QC results and other information to the Agencies to keep them informed of the progress of the RA. The EPA oversight official will have the authority for final field approval of the RA based on his or her field observations and review of the construction QA/QC results.

7.3.4 Construction Changes and Modifications

While pre-construction planning activities are expected to minimize major design changes once an RA project is initiated, some changes or modifications to the remedy are still anticipated during construction to accommodate various conditions or circumstances encountered in the field. Examples include boundary adjustments, work to accommodate specific landowner issues, encountered sensitive species or habitat or cultural / historic resources, safety or equipment limitations, and early indications that a prescribed remedy is not meeting performance criteria (e.g., action levels or requirements for suitable growth media). Details regarding different types of changes and procedures for appropriately handling and documenting changes and modifications are identified in Section 7.1.2.5. All changes, deviations, or modifications also must be identified in the CCR.

7.3.5 Punchlist Activities and Final Walkthrough

Prior to completing the final RA construction activities and demobilization of major equipment from the RA project area, a Pre-Final Inspection will be completed by project oversight and Agency representatives. For the ARWW&S and OW/EADA OUs, this inspection occurs during a punch-list walkthrough. For the CSOU, an inspection of the RA work is performed with the landowners and the Agency representatives. The findings from the inspection will be documented and organized by work item to identify remaining items or deficient issues to be addressed while the appropriate equipment and resources are still on-site prior to contractor demobilization. Typical punch list items for the ARWW&S and OW/EADA OUs include final seeding, removal of temporary BMPs, reclamation of haul routes and staging areas, and removal of project materials and debris, but also may include elements of construction found to be incomplete or deficient at the time of the inspection. CSOU RA Pre-Final inspections are performed with each affected landowner to ensure all Superfund-related requirements have been met (AR and Agency responsibility), as well as any specific work items committed to in the landowner access agreements (AR responsibility). AR should complete the Pre-Final Inspection documentation, identifying the “punch-list item,” the date each “punch-list

item" was completed, and sign-off by Agency oversight representatives confirming the identified "punch-list item" was completed. The completed Final Inspection Form is then included in the CCR.

At the end of construction, but prior to demobilization of major equipment, a final walkthrough or meeting will be scheduled with the Agencies to confirm via signoff that all construction items have been completed according to the RD, that all punch-list items have been completed, that all deficient issues have been addressed as identified on the Pre-Final Inspection Form, and that no construction work items remain that must still be completed. The final walkthrough is intended to be the final inspection for the constructed elements of the project. However, although no future remedial work following the final walkthrough is required pending successful remedy establishment, a Request for Maintenance (RFM) may be necessary depending on the results of the O&F evaluation process, as appropriate.

7.4 Post-Construction Activities (All Active OUs)

The following activities are performed after RA construction completion to document the implemented RA and promote vegetation establishment prior to a project area entering the performance monitoring phase, as appropriate.

7.4.1 Construction Completion Reports (CCRs)

Upon completion of construction activities for a specified scope of work within an OU or OU sub-unit (such as an RDU, expansion area, specific project, RA element, or other subarea), a CCR will be prepared and submitted to the Agencies for review and approval. The purpose of a CCR is to compile all construction and as-built remedy information into a comprehensive document. The CCR will include construction details, field design changes, RFCs, inspection and test results, corrective actions, photographs, and QA/QC memoranda or reports and interpretations, and will present the final overall project schedule, final inspection records, ARARs compliance approvals, and material quantities used.

In addition, under section 5.1(e)(5) of the SOW, a CCR must satisfy each of the following requirements, unless the requirement is waived by EPA: (1) include a statement by AR's Project Coordinator that construction of the remedy is complete and is functioning properly and as designed; (2) include a demonstration, and supporting documentation, that construction of the remedy is complete and that the remedy is functioning properly and as designed; (3) include as-built drawings; (4) be prepared in accordance with Chapter 3 (Construction Action Completion) of EPA's *Close Out Guidance*, as supplemented by *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017); and (5) be certified in accordance with section 8.5 of the SOW (Certification).

CCRs are meant to summarize the RA construction activities that have been implemented and demonstrate that a scope of work has been fully constructed. With regard to the ARWW&S and OW/EADA OUs, CCR approval by the Agencies coupled with an affirmative O&F Assessment of early vegetation establishment within the project area (as confirmed by the Agencies) indicates that

the area can pass from the RA Construction phase into the Performance Monitoring & Maintenance phase. The O&F Assessment is performed by AR and provided as a separate submittal to the Agencies, as described in Section 8.0 herein.

Approval of a CCR constitutes a determination by the Agencies that RA Construction is complete under the SOW for the RA construction documented within that CCR.

7.4.2 Post-RA Weed Management

Post-RA weed management within the ARWW&S and OW/EADA OUs typically occurs one year after seeding for a minimum period of two years following a determination that the remedy is O&F. Weed management is performed to discourage encroachment and/or regeneration of noxious weeds within the disturbed project areas and to promote establishment of the desirable seeded species. Weed management may include mowing, but typically consists of herbicide application to targeted weedy species to achieve Performance Standards. In Category 1 areas, weed spraying is not required beyond the two-year, post-O&F period. In non-Category 1 areas, the need for additional weed management beyond the initial two-year period is evaluated during subsequent performance monitoring and maintenance phase activities, as appropriate (*see* Section 8.0).

7.4.3 Wetland Accounting

Post-RA wetland accounting to meet "no net loss" regulatory requirements at the Site will follow the UCFRB Four-Step Wetland Mitigation Process, as addressed in Section 7.1.2.3.1. Wetland areas lost or gained within the Site may be offset, or used as offsets, for "no net loss" of wetland areas at any site within the UCFRB Superfund Sites where AR has completed RA. As RA is completed throughout the Site, one or more Step 4 reports will be prepared to document post-RA wetland delineations for "no net loss" accounting. This information will be used to update UCFRB Wetland Status Summary Reports, which will summarize the status of wetland mitigation for the Site and overall "no net loss" accounting across all Superfund sites within the UCFRB. The summary reports will be used to inform EPA of "no net loss" wetland accounting status and will confirm whether regulatory guidelines for wetland mitigation efforts have been met.

8.0 PERFORMANCE MONITORING AND COMPLIANCE

Several media- or area-specific management plans have been developed for evaluation of remedy performance and compliance at the Anaconda Smelter NPL Site.

The general objectives of these media- or area-specific management plans are to:

- Identify monitoring requirements (location, frequency, and methods) to evaluate remedy performance;
- Identify Performance Standards;
- Identify media areas of concern;
- Discusses how the RAs, monitoring/inspection/operations/maintenance plans, and ICs will meet the ROD requirements for the media or area remedy;
- Identify reporting requirements and procedures for record keeping;
- Identify how media compliance will be determined as media move towards completion and eventual deletion / delisting; and
- Identify long-term management requirements for RA(s) effectiveness.

This section of the SMP summarizes the monitoring and compliance requirements identified in the VMP, the *Final Groundwater Management Plan* (GWMP) (Site Document Register No. 100-12-920), the *Final Surface Water Management Plan* (SWMP) (Site Document Register No. 100-12-781), and the *Riparian Area Vegetation and Bank Stability Monitoring Plan for Willow Creek and Warm Springs Creek* (RMP) (Site Document Register No. 610-12-591) for vegetation, surface water, riparian areas/streambanks, and groundwater. Note that EPA may require additional monitoring for the purposes of the Five-Year Reviews (FYRs) (*see* Section 12).

8.1 Vegetation Monitoring

The VMP identifies vegetation monitoring requirements for remediated areas. This plan describes the requirements that EPA and DEQ have established for remediated properties within the Site pursuant to the revegetation/site stability goals and objectives set forth in the ARWW&S ROD. Specifically, the VMP describes the vegetation management process and identifies the performance targets and quantitative standards used to determine when a remediated property has achieved compliance. Furthermore, it identifies the requirements for conducting monitoring and maintenance activities, and for performing site inspections and evaluations.

Evaluations are performed at four stages: (1) during O&F assessments shortly after the construction (reclamation) is implemented, (2) during the short-term monitoring and maintenance phase, (3) at the compliance determination step, and (4) as part of LTIM (*see* Section 9).

Based on the wide range of post-RA soil contaminant concentration levels (i.e., TMI) as defined in the VMP), land ownership, and the various types of anticipated land uses, properties have been divided into six categories for the purposes of monitoring, maintenance, ICs, and determining

compliance. Figure 8.1 illustrates the initial land parcel categories for the ARWW&S and OW/EADA OUs.

- Category 1. Unrestricted Use Properties – soil less than 250 mg/kg arsenic;
- Category 2. Upland Properties – Low to Moderate (up to 1,700 mg/kg) TMI having enhanced reclamation;
- Category 3. Upland Properties – Moderate to High (>1,701 mg/kg) TMI having enhanced reclamation and design;
- Category 4. Upland Properties – Moderate to High (>1,701 mg/kg) TMI having enhanced reclamation and a land management plan where enhanced design is not feasible (Note that evaluation areas originally categorized as Category 4 properties under the VMP have been subsequently reclassified as Category 3 based on the inclusion of enhanced design and reclamation components for Category 3 properties under the VMP);
- Category 5. HAAs; and
- Category 6. WMAs.

"Enhanced reclamation" consists of a set of pre-construction elements that may include assessment of soil organic amendment requirements, review of SBL amendment requirements, review of tillage depth requirement, field review of remedial boundaries and associated remedies, and review of seed mixtures. This process serves as a final check that the approved remedial prescription provides the greatest potential for success of the remedy and vegetation establishment.

"Enhanced design" refers to a review of the design in areas where post-RA soil total metals levels are predicted to remain at greater than moderate TMI levels. Enhanced design elements may include stripping high contaminant impacted areas, cover soil application, and introduction of storm water engineered controls or special land use restrictions.

Select areas within the ARWW&S OU do not fit the remedial logic discussed above due to past or present land use activities not associated with mining- or smelting-related impacts. These areas have been designated as Facilities. These areas include parcels with land uses such as gravel pits, cement operations, agricultural fields, and cattle calving areas. Additional soil sampling has been performed and ISWPs prepared for the approximately 30 identified Facility areas, which are shown in the RDU maps identified in Section 5 of this SMP. Based on Agency review of the ISWPs, some areas will be classified into a land parcel category and will follow the standard evaluation process described in the VMP, while other Facility areas are not classifiable into a land parcel category. For the latter, the land management decision will be made on a case-by-case basis. The decision may be no further action required, O&F determination only, additional weed management, or another requirement prescribed by EPA.

8.1.1 Performance Monitoring Overview

Following completion of all RA activities and any shakedown period defined in the applicable RAWP, FDR, and/or ISWP (*see* SOW § 5.1(d)(4)), the monitoring process for all categories commences with performance of an O&F assessment that the remedy is functioning properly and operating as designed (e.g., vegetation is becoming established), in accordance with the VMP. AR will perform this O&F assessment near the end of the first full growing season following construction activities. AR will submit the O&F assessment to EPA for approval.

A positive O&F assessment coupled with 2 years of post-RA weed management constitutes achievement of Performance Standards for Category 1 areas. Under these circumstances, performance monitoring within Category 1 parcels is not required. Performance monitoring for other remediated areas (Categories 2 through 6) generally includes an evaluation of remediated areas against a LRES score as described in the VMP. A negative O&F determination results in the implementation of contingency measures, as described in Section 8.1.3.

AR will perform short-term monitoring (performance monitoring) of non-Category 1 remediated areas where a positive O&F determination has been made. Such short-term monitoring consists of qualitative observations of the condition of the vegetation, surface soil (erosion), and BMPs.

8.1.1.1 Compliance Standards

LRES scoring will be used as the performance evaluation method to determine if Category 2, 3, and 5 properties (except for the steep slope areas) are meeting the ROD-mandated RA goals and objectives and the vegetation Performance Standards established in the VMP. The LRES method uses weighted numeric scores for vegetation and soil parameters to obtain a total score that is then compared to an established numeric threshold. The threshold established for non-steep slope areas as a Performance Standard is a LRES score of 115. The frequency that a remediated non-steep slope property must achieve the LRES target Performance Standard is based on the level of post-RA soils concentrations.

Steep slope areas (generally areas with 3H:1V or steeper slopes) have specific compliance standards that include only an assessment of the degree of erosion using the modified Bureau of Land Management (BLM) method (Clark 1980) and an evaluation of the distribution of noxious weeds. Achievement of the target LRES performance/compliance standard in upland/non-steep slope areas or achieving a passing erosional stability score for steep slope areas, at the prescribed frequency constitutes compliance for the property.

Evaluation of percent live cover is the primary Performance Standard for WMAs (Category 6 properties) with additional assessments of erosional stability using the modified BLM method, evaluation of barren areas, and a qualitative evaluation of noxious weeds. The cover threshold for WMAs is 30% live vegetation cover of acceptable plant species.

Monitoring areas (which include remediated areas and areas designated as Monitor-Well Vegetated) with both upland, non-WMAs that score higher than 115, and WMAs that exhibit a vegetation cover

(amongst meeting other secondary criteria) at or above 30% over a defined timeframe move from the short-term to long-term monitoring program. Excluding Category 5 (HAAs) and Category 6 (WMAs) properties, it is the objective that once Performance Standards and remedial requirements have been met for a specific property, long-term land management responsibility transfers back to the landowner.

Once a monitoring area has met the performance monitoring standards, a compliance determination by EPA will be requested following receipt of a compliance determination report, as described in Section 8.1.4.

8.1.2 Other Vegetation Monitoring Considerations

8.1.2.1 Vegetation/Weeds

Weed management is an integral part of achieving Performance Standards during performance monitoring and an integral part of long-term property management. The performance monitoring target within all remediated areas is that noxious weeds are infrequently observed and represent less than 5% of the observed vegetation cover within a remediated area. Weeds and weed classifications for the Site are identified in Appendix B of the VMP.

8.1.2.2 Steep Slopes/BMPs

Approximately 2,000 acres of steep slopes requiring remediation are within the Site. Remediation of these areas cannot safely and practicably be accomplished with conventional tillage techniques otherwise implemented at the Site (i.e., *in-situ* treatment). Accordingly, steep slope reclamation incorporating remediation techniques of varying intensity will be implemented to help control erosion and down-gradient sediment transport. Such techniques include surface grading, lime pitting, dozer basins, amendment application in select barren and sparsely vegetated areas, strategic cover soil installation, vegetation through planting of trees and shrubs, aerial application of seed/fertilizer, and installation of BMPs (via hand and mechanical installation).

Wind and water erosion are key components in the potential release of COCs. Vegetation establishment is the primary long-term control mechanism for mitigating erosion and sediment transport on steep slopes, while BMPs are usually temporary, short-term mechanisms that have been integrated into the remedy for steep slopes as an interim erosion measure prior to establishment of vegetation. Evaluation of BMP effectiveness and overall condition is performed as an ongoing component of performance monitoring performed by AR under the VMP to ensure remedial action objectives continue to be met over time.

8.1.3 Contingencies

In the event O&F and/or compliance determinations for vegetation and/or stability are not achieved within the time frames specified in the VMP, additional work may be required to meet Performance Standards. These actions may include additional amendments, deeper depth of treatment, placement of soil covers, re-seeding, additional plantings, or installation of additional steep slope BMPs and/or storm water engineered controls. As noted in Section 5 of the VMP, there is a maximum period of

10 years after RA construction for an area to meet Performance Standards. Where additional work is required, an RFM describing the additional work will be prepared and submitted to the Agencies for approval prior to implementation of the work.

Supplemental surface water RD/RA areas have a 5-year short-term performance monitoring period after RA implementation, with provisions for a maximum of three RA attempts and the 10-year period to achieve post-RA Performance Standards.

8.1.4 Annual Reporting/Compliance Reporting

AR will prepare annual monitoring reports that summarize the O&F Assessments, Vegetation Performance/Compliance Monitoring, and LTIM for each monitoring area surveyed, as appropriate, as well as any maintenance activities that were implemented. In addition to summarizing the past year's activities, the reports will identify the areas requiring monitoring and/or maintenance. The annual monitoring reports will focus on summarizing soils and vegetation information for areas that are still developing and have not yet achieved Performance Standards. Areas that have been determined to meet Performance Standards, as supported by LRES or vegetation cover evaluations, will be summarized in a Compliance Determination Report prepared by AR, as discussed in Section 8.1.4.2.

8.1.4.1 O&F Assessment Reporting

Following receipt of the CCR (typically after the first growing season) AR will perform an O&F assessment of the vegetation and prepare an O&F Summary Report documenting the findings. Following receipt of the O&F Summary Report, the Agencies will perform an independent verification assessment, and EPA will confirm the O&F status of the property.

In the case of Category 1 areas, an O&F determination/confirmation for properties where the RA has reduced soil arsenic and lead concentrations to less than the 250 mg/kg and 400 mg/kg, respectively (i.e., Category 1 areas targeted for unrestricted use) will satisfy the performance monitoring requirement pending weed management for two additional years to ensure that the property progresses toward establishment of self-sustaining vegetation.

8.1.4.2 Vegetation Performance Monitoring and Compliance Reporting

Each upland (non-steep slope) area, excluding Category 1 properties, is required to pass LRES evaluations (i.e., achieve a LRES score of 115 or greater), either once (Category 2) or twice (Categories 3 and 5) within a 10-year period following RA construction completion. Compliance evaluations will be conducted by AR in accordance with the *Final Vegetation Compliance Determination QAPP*. The Performance Standards, evaluation parameters, and associated criteria are identical within each of the parcel categories. Each WMA (Category 6) parcel, excluding steep slope areas, is required to meet the vegetation cover, weed cover, barren area, and erosional stability Performance Standards twice within a 10-year period following RA construction completion. Steep slope areas within Categories 2 through 6 are required to meet BLM requirements for erosional

stability and exhibit low weed infestation twice within a 10-year period following RA completion to demonstrate achievement of performance standards. Once these requirements are met, a Compliance Determination Report shall be prepared requesting a compliance determination by EPA acknowledging that the area can move into the LTIM phase of vegetation monitoring, as appropriate, as described in Section 9.

The Compliance Determination Report will contain all the data and information previously gathered for the subject monitoring area that the Agencies may require to fully evaluate the area and determine whether Performance Standards have been met and the area is capable of sustaining vegetation. Compliance Determination Reports will be submitted on an annual basis by the end of the second quarter.

After receiving the Compliance Determination Report, the Agencies will conduct field inspections to verify whether each area discussed in this report has achieved the applicable vegetation Performance Standards. Based on the information submitted in the Compliance Determination Report and first-hand knowledge of the monitoring area, a Compliance Determination (*see* Section 8.1.4.3) will be made identifying whether the area is eligible to pass into the LTIM phase or whether additional performance monitoring is necessary. Figure 8.2 illustrates the vegetation monitoring status of remediated areas within the Anaconda Site as of the end of 2020. This figure will be updated in the SMP Annual Report.

8.1.4.3 Agency Compliance Determination

EPA will prepare a letter to AR stating whether each requested area passes or fails the Compliance Determination. Compliance assessment performed by the Agencies will be as described in EPA's *Remedial Action Vegetation Compliance QAPP* (2016), utilizing the Compliance Documentation Form provided in Appendix E-2 of the VMP. Monitoring areas that achieve a passing Compliance Determination by the Agencies will move to the LTIM phase, as appropriate. Those that fail will either return to the Performance Monitoring phase or move to the LTIM phase, as appropriate, following the implementation of contingency measures, as described in Section 8.1.3.

Upon achieving a passing Compliance Determination, properties in Category 2 do not require LTIM by AR and responsibility for management of these properties transfers to the landowner. Such responsibility includes controlling noxious weeds and removal of refuse. These activities are components of normal landowner responsibilities under state and local regulations.

Once a passing Compliance Determination has been made for Category 3, 5, and 6 properties, they move into the LTIM phase. In some instances (i.e., Category 5 and 6 properties), long-term land management will include LTIM requirements to ensure that the long-term integrity and protectiveness of the remedy remains intact. Additional details associated with LTIM requirements are discussed in Section 9.

8.1.4.4 LTIM Reporting

Category 5 and 6 areas subject to LTIM also will be evaluated annually and results from monitoring activities will be compiled in an Annual LTIM Monitoring Report. LTIM consists of post-compliance monitoring and maintenance activities that are necessary to confirm vegetation performance standards are being maintained to ensure protectiveness. The results of the vegetation, erosion, and BMPs inspections will be included in the report along with any other LTIM maintenance activities performed during the previous year and those recommended going forward based on the most recent monitoring activities. LTIM reporting for Category 5 and 6 areas shall contain the following information:

- A summary of the completed RA, including reference to the appropriate CCR, O&F confirmation, and compliance determination;
- Yearly summary of LTIM monitoring results;
- Comparison of LTIM monitoring data against the appropriate vegetation Performance Standards for each area to confirm the areas are still meeting the applicable Performance Standards;
- Summary of maintenance activities performed on the areas;
- Hard copy or down-loadable maps used in the field, recent air photographs, and GIS files of the subject area. GIS requirements include electronic orthophotographs, pre-remediation data, pre-remediation design polygons, post-remediation "as-built" polygons, and performance monitoring inspection area boundaries; and
- A list of recommendations for the polygon(s)—these may include the need for continuing weed management, erosion mitigation measures, grazing management, additional monitoring, maintenance (LTIM), or other contingencies.

8.2 Surface Water Monitoring/Management

Surface water monitoring requirements were defined in the 2020 ARWW&S OU ROD Amendment and details regarding surface water sampling and analysis are provided in the SWMP. The SWMP presents the overall management plan for surface water, including long-term monitoring requirements to assess cleanup and protection of surface water resources within the ARWW&S OU, as required by the ARWW&S OU ROD, as amended.

The objectives of the SWMP are as follows:

- Establish the surface water monitoring network, monitoring schedules, and sampling and analytical parameters and procedures for surface water quality monitoring;
- Identify the surface water Performance Standards and methodology for verifying compliance or modifying compliance targets;
- Assess the effectiveness and protectiveness of the RAs;

- Establish the process for a waiver to federal water quality standards if current standards cannot be met after completion of the RA; and
- Identify contingent remedial measures relative to long-term monitoring results.

The original surface water remedy as identified in the 1998 ARWW&S OU ROD was developed for RDUs 1, 2, 3, 4, 5, 6, 7, 8, 9, 14, and 15 using a LRES approach (i.e., treatment, removal, soil covers, steep slope reclamation, BMPs) combined with engineered controls, which was documented in approved FDRs/RAWPs (RDU Remedy). To date, the RDU Remedy has been partially constructed, primarily in lowlands and WMAs where heavy equipment can be readily used.

In 2017, the *ARWW&S OU Final Surface Water TI Evaluation Report* was completed to assess the technical practicability of achieving August 2010 Circular DEQ-7 total-recoverable aquatic life standards in the five major drainage basins in the ARWW&S OU. The 2017 TI Evaluation included additional surface water monitoring to further characterize water quality conditions after partial remedy implementation. Predictive modelling indicated it may not be practicable to meet State of Montana surface water Performance Standards even after the remaining portions of the remedy have been implemented. As part of the 2017 TI Evaluation, an alternative remedial strategy was developed that includes remedial alternatives with the objective of reducing COCs in surface waters to levels below the Circular DEQ-7 aquatic life Performance Standards as specified in the 2011 ARWW&S ROD Amendment. The alternative remedial strategy also includes waivers of existing surface water standards and replacement with federal ambient water quality criteria (AWQC) if the remedial alternatives as constructed do not achieve compliance with DEQ-7 Performance Standards. In June of 2020, the Agencies issued a second ARWW&S ROD Amendment that adopted this alternative remedial strategy. The SWMP sets forth the monitoring plans, requirements, and decision framework for determining surface water compliance and responding to exceedances as a part of the alternative remedial strategy identified in the 2017 TI Evaluation as summarized in the ARWW&S OU Surface Water Management Plan Compliance Plan Flow Chart (Figure 6-1 of the SWMP).

The alternative remedial strategy for ARWW&S OU surface waters consists of the following elements:

- Enhance and expand the current remedies through additional storm water controls, storm water BMPs, and steep-slope reclamation within the current remedial areas and specified expanded areas to achieve further contaminant reduction;
- A long-term monitoring plan to track remedy performance and demonstrate protection of human health and the environment; and
- A contingency for a TI waiver of existing surface water Performance Standards, and adoption of replacement standards, if the remedial alternatives, as constructed, do not achieve compliance with DEQ-7 standards. Replacement standards will be adopted for those metals that still do not achieve the applicable DEQ-7 standard after implementation of the alternative remedial strategies listed, as identified in the SWMP.

Since the 2017 TI Evaluation Report was completed, additional design and engineering evaluations have been conducted to refine the alternative remedial strategy. The result of this refinement is summarized and presented in the *Final Supplemental Surface Water Controls RD/RA Report*. In addition to this report, additional work under the 2017 alternative remedial strategy was further evaluated by the Montana NRD Program for RDU 15 Mount Haggin Uplands. The revised design is presented in the Mount Haggin Remedy and Restoration Work Plan (Site Document Register No. 615-12-936).

Surface water monitoring will be conducted in Lost Creek, Warm Springs Creek, Mill Creek, Willow Creek, and California Creek. In addition, limited bed sediment monitoring will be conducted once every three years in Warm Springs Creek at the Warm Springs monitoring station. The procedures for surface water and bed sediment monitoring described in the SWMP are a continuation of the USGS water quality/flow monitoring program with the addition of a monitoring station in California Creek. Figure 8.3 shows the surface water monitoring locations. This map will be updated in the Annual SMP Report, as necessary, and also will show stream reaches where TI waivers have been granted.

Surface water quality and flow will be monitored eight times per year on each stream at an upstream monitoring station where the stream transitions from bedrock uplands to valley terrain, and a downstream monitoring station where surface waters exit the ARWW&S OU (California Creek will have only one monitoring station at the OU boundary). Monitoring stations on Willow Creek, Mill Creek, Warm Springs Creek, and Lost Creek will be existing USGS gaging stations. A gaging station will be established on California Creek for surface water monitoring. In these streams, the upstream station will be used as a remedy construction performance monitoring station and the downstream station will be the point of compliance (POC) monitoring station.

8.2.1 Surface Water Compliance Determination Plan

Section 6 of the SWMP provides the surface water compliance determination plan, which includes the following elements:

- Water quality Performance Standards;
- Methodology for compliance determinations; and
- Remedy Construction Monitoring Period and Compliance Monitoring Period.

Compliance requirements for surface water quality in the ARWW&S OU streams are set forth in accordance with the surface water Performance Standards provided in the ARWW&S ROD, as amended. If RAs do not achieve a given Performance Standard during the Compliance Determination Period, the contingent replacement standard will be the federal ambient water quality criteria for each COC, as identified in the SWMP. ARAR waivers and adoption of replacement standards will be evaluated on a watershed-by-watershed basis. For copper, the replacement standard is the Biotic Ligand Model criterion in place at the time of compliance determination (or other EPA recommended ambient water quality standard if a Biotic Ligand Model standard is not in place at time of waiver).

Copper Biotic Ligand Model replacement standards (Instantaneous Water Quality Criterion [IWQC]) will be calculated from water chemistry parameters measured in each discrete surface water sample, consistent with the approach for hardness-dependent standards. A compliance determination for surface water Performance Standards will be made by EPA following completion of surface water remedies in each stream, based on procedures and monitoring periods established in the SWMP.

8.2.2 Surface Water Monitoring Periods

The SWMP sets forth two different monitoring periods: (1) Remedy Construction Monitoring Period, wherein surface water monitoring will be completed at remedy construction monitoring stations and compliance monitoring stations through completion of remedies and BMPs; and (2) Compliance Monitoring Period at the downstream monitoring stations to assess compliance with surface water Performance Standards and to subsequently support EPA FYRs. Surface water monitoring will be conducted according to procedures set forth in the SWMP during each monitoring period.

Surface water monitoring will continue at all monitoring locations as shown on Figure 8.3 through construction of the RDU remedies and the O&F determination as defined under the VMP. The Remedy Construction Monitoring Period will include sufficient time to implement all remedies and BMPs selected within a watershed, including an O&F determination for vegetation establishment. This includes work provided for under both the *ARWW&S OU Supplemental Surface Water Controls RD/RA Report* and the RDU Remedy. Compliance monitoring will commence following the Remedy Construction Monitoring Period. At the time an O&F determination is made, the Compliance Monitoring will switch to monitoring of the downstream compliance stations only. The Compliance Monitoring Period may begin at different times for a given ARWW&S OU stream depending on the timing and completion of RA construction within each corresponding watershed. Six years of compliance monitoring will be performed to determine if Performance Standards are met or if TI waiver replacement standards are needed. If concentrations of a given COC meet the surface water Performance Standard, and conditions and activities are considered representative of the ARWW&S OU streams, then the Performance Standard for that COC will remain in place.

If a Performance Standard is exceeded more often than the allowable frequency based upon the results of monitoring during this period, AR will document this in an annual report and request that the Performance Standard for the COC be replaced with the "contingent replacement standard" identified in the SWMP, as applicable. EPA and DEQ will evaluate the request and document any necessary waivers through approval of the annual report.

If COC concentrations are determined to be in compliance for a given POC monitoring station based on the six years of compliance monitoring data, AR will submit a compliance determination request for EPA to prepare a close out report. Once approved, compliance monitoring will conclude, and EPA FYR monitoring will begin.

8.2.3 Biological Monitoring

Biological monitoring is included in the SWMP to support EPA's FYRs and potential future TI waivers of DEQ-7 standards. Presently, biological monitoring under the SWMP is limited to annual benthic macroinvertebrate (BMI) community monitoring at one location on each stream, plus analyses of trace-element concentrations in the whole-body tissue of aquatic benthic insects once every three years in Warm Springs Creek. If any waiver to one or more replacement standards becomes necessary, EPA may consult with the USFWS, as required under the ESA, to evaluate the impact of the waiver(s) on bull trout recovery efforts in the UCFRB. Under such a consultation, EPA may request additional biological monitoring data beyond the data required under the Biological Monitoring Plan. The need for additional data collection will be determined after review of the existing site data and in consultation with the USFWS.

Habitat assessments and biological monitoring of the BMI community will be conducted at the POC monitoring station on each stream, as outlined in the SWMP. Monitoring will be conducted annually during the remedy construction and compliance monitoring periods and as needed (once every 5 years for up to 30 years) during the FYR monitoring period.

8.3 Riparian and Bank Stability Monitoring

The riparian areas addressed through RA activities at the Site are the reaches of the Willow Creek and Warm Springs Creek stream corridors. The locations of these riparian areas are illustrated on Figures 5.11 and 5.12. Riparian monitoring is complete on Willow Creek and is ongoing on Warm Springs Creek. The success of remedial activities in these areas is largely dependent upon vegetation to minimize erosion, stabilize banks, reduce metals transport, and provide deep-rooted riparian plant communities similar to those in natural riparian systems. The RMP was developed to measure parameters to assess whether Site-specific performance targets are being achieved and to support post-construction management decisions (e.g., weed spraying, vegetation maintenance, bank stability improvements). Specifically, monitoring evaluations include:

- Bank stability and erosion on remediated portions of the creeks;
- Vegetation establishment within the riparian corridors;
- Maintenance requirements and corrective actions; and
- Recordkeeping and reporting requirements.

Annual reports will be prepared, by riparian area, summarizing the monitoring results and any maintenance activities performed during the previous year. In addition to summarizing the past year's activities, the reports will identify the area requiring monitoring and maintenance for the current year. Monitoring and reporting will continue until performance targets are achieved as identified in the RMP and monitoring discontinuation is agreed to by the Agencies.

8.4 Groundwater Monitoring/Management

The GWMP provides the long-term strategy for managing, monitoring, and evaluating Site groundwater quality within the ARWW&S OU WMAs, ground water TI Zones, and Areas of Concern. Figure 5-1 of

the GWMP provides the compliance determination process flow chart which identifies the groundwater management strategy for the Site. Figure 8.4 of this SMP shows the groundwater monitoring locations and Areas of Concern. Groundwater monitoring in the ARWW&S OU is covered under two separate monitoring programs to demonstrate compliance with the water quality Performance Standards set forth in the ARWW&S ROD, as amended. Note that monitoring of the Groundwater and Surface Water Management System located along the eastern toe of the D-Cell dike downgradient of the Opportunity Ponds and upgradient of the WMA groundwater POC boundary and groundwater monitoring at the Smelter Hill Repository Complex are conducted independently from Site groundwater monitoring activities under the *Groundwater and Surface Water Management System Operation and Maintenance Plan* (*see* Section 9.4) and the *Smelter Hill Repository Complex (SHRC) Long-Term Operation, Monitoring, and Maintenance (OM&M) Plan* (*see* Section 9.7), respectively.

Domestic Well Monitoring Plan

The *Final Domestic Well Monitoring Plan – Revision 1* (Site Document Register No. 100-12-866) details procedures and protocols for monitoring domestic well water quality for drinking water wells located within the Domestic Well Area of Concern, as identified in the GWMP.

The objectives of the domestic well monitoring program are as follows:

- Provide the process for newly installed domestic wells permitted under ADLC's DPS to be tested for arsenic in an efficient manner;
- Process requests from domestic well users to have their water tested for arsenic as informational requests are received under the CPMP;
- Monitor arsenic concentrations in domestic wells previously tested that have arsenic concentrations that range between 5 to 10 µg/L to ensure that these concentrations do not increase above the 10 µg/L drinking water standard over time;
- For sampled wells that have confirmed arsenic concentrations above the 10 µg/L drinking water standard, provide users with point of use reverse osmosis (RO) treatment systems or a replacement well in eligible areas;
- Monitoring, inspection, and/or maintenance of wells with RO systems to ensure continued protectiveness; and
- Report to EPA, DEQ, and ADLC the status of domestic well monitoring annually so that EPA can evaluate the protectiveness of the remedy during the FYRs.

AR has been conducting monitoring and, where applicable, replacement or treatment with RO systems, of domestic wells within ARWW&S OU since 2004. The most recent status of wells being monitored and locations of reverse osmosis systems being used/maintained is shown in Figure 8.5.

Long-Term Groundwater Monitoring Program

The *Final Long-Term Groundwater Monitoring Program Quality Assurance Project Plan (QAPP) – Revision 2* (Site Document Register No. 100-23-872) details the process used to determine

compliance with Performance Standards and assess the effectiveness and protectiveness of remedies at the Site and specifies the monitoring locations, sampling frequencies, analytical parameters, and data validation procedures to collect the data to support these assessments and determinations. Based on the results of sampling completed under the QAPP and evaluated under the GWMP, additional RA can be implemented, as described in Section 8.4.1.

The objectives of the QAPP are as follows:

- Establish the groundwater monitoring network, monitoring schedule, and analysis parameters for long-term groundwater monitoring;
- Provide a sampling and analysis program for monitoring POC boundaries and determine compliance with Performance Standards; and
- Provide data to monitor the effectiveness and protectiveness of the remedies.

The monitoring network specifically targets the following groundwater Areas of Concern:

- Anaconda Ponds/Smelter Hill/Opportunity Ponds WMA;
- Old Works WMA/AOC;
- South Opportunity Alluvial TI Zone;
- Blue Lagoon AOC;
- North Opportunity Alluvial TI Zone;
- Town of Opportunity AOC; and
- Bedrock Aquifer TI Zones.

The project tasks that are to be completed under the QAPP at the identified monitoring locations include:

- Conduct semi-annual sampling at POC groundwater monitoring wells;
- Conduct one annual FYR sampling (every five years) during high water at springs and seeps;
- Conduct semi-annual FYR sampling (every five years) at groundwater monitoring wells (includes engineered cover wells which, having completed 5 years of semi-annual sampling after cover was installed, have now become FYR wells);
- Conduct one round of groundwater sampling at the event driven wells if the water levels reach the trigger elevation in monitoring well (MW)-213 located within the Old Works WMA; and
- Conduct semi-annual sampling at the Town of Opportunity well (MW-9).

8.4.1 Groundwater Contingency Remedy Measures

As discussed in the GWMP, POC monitoring at the Site will be implemented at three areas: the Smelter Hill/Anaconda Ponds/Opportunity Ponds WMA, the Old Works WMA, and the South Opportunity TI Zone at the Town of Opportunity. Potential contingency remedy measures for each of these areas in the event COC exceedances occur and are confirmed by resampling at the established POCs are illustrated in the Ground Water Compliance Determination Process Flow Chart (*see* Figure 5-1 of the GWMP).

At the Smelter Hill/Anaconda Ponds/Opportunity Ponds WMA, the contingency remedy measure has already been constructed (the Opportunity Ponds WMA Groundwater Surface Water Management System (GWSWMS)). Any confirmed exceedance for the COCs at the POCs will result in a re-evaluation of the GWSWMS, which may include, but is not limited to, evaluation of: modification of the POC (i.e., relocating POC wells); a TI evaluation; extending the GWSWMS north or south; deepening the depth of the interception trench; increasing the capacity of the retention ponds; adding a reagent component or neutralizing component to the passive system; or routing water to the Warm Springs Ponds for treatment as detailed in Section 5.1 of the *RDU 8 RAWP/FDR* (Site Document Register No. 608-08-291).

If POC exceedances are detected at the Old Works WMA, data collected during the event-driven monitoring program for samples collected during high water table conditions will be used to develop a Contingency Remedy Measures Plan. The existing data will be evaluated, and any data gaps will be identified. The evaluation will be used to: (1) reassess containment alternatives for contaminated groundwater at the compliance boundary; and (2) complete a TI evaluation for the aquifer in areas of groundwater contamination located outside the compliance boundary (*see* 1998 ARWW&S ROD § 9.1.5). Alternative contingency measures consist of additional source controls (i.e., implementation of consolidation/grading actions and engineered covers) within the Old Works WMA or adjusting POC well locations, if supported by additional data and information.

If South Opportunity Ponds WMA POCs are exceeded, the design and installation of a separate interceptor trench system that performs the same shallow arsenic-impacted groundwater capture function that the existing tile drain system, or a portion thereof, currently performs will be evaluated (*see* Section 2.3.3 of the GWMP). The trench system would presumably discharge collected water into Mill Creek or Willow Creek, both of which have TI waivers for arsenic. Therefore, treatment of the discharge water would not be required. Such an interceptor trench, if implemented, would require an O&M Plan.

8.4.2 Ground Water Compliance Determination Plan

A groundwater compliance determination for the Site will occur when the following criteria are met:

- All source control measures concerning WMAs, TI Zones, and Areas of Concern must have been completed and passed through construction completion;
- All Management/O&M Plans must be in place;.
- All applicable Institutional Controls must be in place;
- Groundwater monitoring of POCs and performance monitoring locations must have shown static or declining trends for at least four consecutive monitoring years; and
- Provisions for implementing contingency remedy measures in the event a POC exceedance is identified in the future must be in place.

In accordance with the GWMP, AR will submit a Compliance Determination Report once these criteria are achieved.

9.0 LONG-TERM OPERATION AND MAINTENANCE

Long-term O&M of the remedy is necessary to ensure the continued protection of human health and the environment. Long-term O&M begins once EPA has certified that Performance Standards for an implemented remedy or remedy element have been achieved. The VMP and *Engineered Controls I&M Plan* (I&M Plan) (Site Document Register No. 100-11-90) are Sitewide documents with LTIM requirements that apply to the ARWW&S and OW/EADA OUs. Various O&M plans also have been prepared that address specific areas or facilities within the Site.

To ensure the long-term integrity and protectiveness of the remedy, LTIM requirements for Category 5 and 6 parcels include:

- LTIM for vegetation and storm water control structures;
- Access controls/restrictions;
- ICs for the property;
- Specific requirements for the Dutchman Wildlife Management Area under the *Final Dutchman Property Management Plan*;
- Supplemental requirements for Dedicated Developments (DDs) (i.e., railroads, OWGC);
- Procedures and protocols for future development; and
- Management requirements for other materials (e.g., slag prior to closure of slag piles).

9.1 Vegetation

The VMP describes the requirements for conducting long-term vegetation monitoring and maintenance activities, including performing site inspections and evaluations. LTIM is not required for Category 1, 2, and 3 areas remediated with a permanent vegetative cover that have met their identified compliance criteria and will revert back to the landowner under normal land stewardship. Category 5 and 6 areas that have met their identified compliance criteria will pass into LTIM. EPA will review these areas at least every five years to determine if the remedy continues to be protective of human health and the environment or if corrective actions are needed to ensure that the area will again, in a short period of time, meet the risk management goals. A remedial corrective action design plan may need to be prepared and implemented to bring a property back into compliance.

9.1.1 Category 1 and Category 2 Properties

Category 1 (Unrestricted Use) areas do not require LTIM once the remedy has been verified by EPA as O&F. Category 2 (Upland properties with Low to Moderate TMI) do not require LTIM once applicable performance monitoring requirements have been confirmed by EPA.

9.1.2 Category 3 Properties

Category 3 properties are not subject to ongoing LTIM. Rather, once these properties have achieved Performance Monitoring requirements as specified in Section 8.1.1.1, these properties will be re-assessed the year prior to the upcoming FYR. The re-assessment shall include an LRES evaluation at (or near) the original compliance point and photo-documentation to allow for trend evaluations of

remedy performance over time. AR will perform an assessment of the vegetation for Category 3 properties prior to the upcoming Agency FYR, and summarize the assessment findings in a report submitted to the Agencies in the 1Q of the year preceding the Agencies FYR (i.e., AR shall submit the Category 3 Report to the Agencies in 1Q 2024 for the 2025 FYR). If EPA confirms that vegetation is still meeting vegetation performance monitoring requirements, the area shall be considered completed and responsibility for management shall revert back to the landowner.

9.1.3 Category 4 Properties

A limited number of areas were initially identified as Category 4 properties in the VMP. Inclusion of enhanced design and reclamation components (*see* Section 8.1) has resulted in reclassifying these areas as Category 3 properties. Therefore, there are no properties currently classified as Category 4.

9.1.4 Category 5 Properties - High Arsenic Areas

HAAs have a moderate to high post-RA TMI and are similar to the Upland Properties in that they are required to pass LRES (115 points) for compliance. In addition, Category 5 properties require long-term management practices to ensure vegetation sustainability and protectiveness. Like the Upland Properties, HAAs will be qualitatively inspected annually for the entire parcel rather than on an individual RA polygon basis to ensure that the integrity of the remedies implemented has not been compromised resulting in a reduction in protectiveness.

9.1.5 Category 6 Properties - Waste Management Areas

AR will remain responsible for LTIM of WMAs after compliance is determined by achieving the criteria identified in Section 8.1.4.2. These activities include controlling noxious weeds, removing refuse, and using BMPs for grazing and storm water controls as well as routine maintenance for engineered controls. Additionally, specific ICs, such as the ADLC DPS and restrictive covenants, apply to the WMAs. Although the inspection approach varies from that used in the performance monitoring phase, the objective is still to identify areas of inadequate performance and implement corrective action.

9.1.6 Annual Reporting

Category 5 and 6 areas require specific LTIM and associated reporting under the VMP. Specifically, these areas include:

- Category 5 – Dutchman HAA and Smelter Hill HAA; and
- Category 6 – Old Works WMA, Smelter Hill WMA, and Opportunity Ponds WMA.

As described in the VMP, annual reporting of LTIM activities for these areas will be provided in an Annual LTIM Report. Information included for these areas will include a brief overview of the remediation/monitoring history, a description of the monitoring activities and completed monitoring forms and any observations noted and/or vegetation maintenance activities performed and/or

recommended. The annual report will generally be submitted by the end of the second quarter the following year. Each year the annual report will follow the format of the previous year and address any agency comments or other comments received. Figure 9.1 illustrates the areas within the Site in LTIM as of 2020. This figure will be updated in the Annual SMP Report.

In some instances (i.e., Dutchman HAA), an annual Property Management Report will be prepared summarizing the monitoring, maintenance, and management activities for the area.

9.2 Engineered Controls and Covers

The Engineered Controls I&M Plan specifies the LTIM and reporting requirements for all engineered controls constructed within the Site. All engineered controls within the Site are inspected and maintained under this I&M Plan, except for those located within the OWGC (which has a stand-alone I&M Plan). Figure 9.2 presents the status of engineered controls that have been constructed to date and those that will be constructed under future projects. As future projects are completed, Figure 9-2 will be updated and submitted in the Annual SMP Report. The purpose of the I&M Plan is to provide documentation, guidelines, and instructions to effectively inspect and maintain engineered controls. The scope and objectives of the I&M Plan include the following main categories, as discussed further in Sections 9.2.1 through 9.2.4:

- Storm Water Controls:
  - Inspecting and maintaining the integrity and operation of storm water runoff conveyance systems (channels) and sediment structures (ponds).
  - Monitoring sediment levels and adjusting flow control devices, as needed. Sediment removal is required when sediment levels approach the maximum design sediment elevation capacity of the sediment pond.
- Stream Corridors:
  - Inspecting and maintaining the erosion armoring along Warm Springs Creek through the Red Sands area. Note that the erosion armoring along Warm Springs Creek through the Old Works Golf Course is addressed in the *Final Old Works Golf Course O&M Plan* (see Section 9.6.1).
- Non-Vegetated Covers:
  - Maintaining the integrity and operation of engineered industrial covers.
- Record Keeping and Reporting:
  - Maintenance of the Engineered Controls I&M Log.
  - Providing for annual reporting.
  - Outlining the regularly scheduled inspections to determine maintenance, as necessary.
  - Identifying all constructed features that require inspection and maintenance and a process to include other features as construction is completed in the future.
  - Documenting normal maintenance and repair activities.
  - Outlining the process to implement corrective action, as necessary.

Inspection forms will be used to document the results of all inspections. EPA will be notified prior to performing the annual inspections and conditional or opportunistic monitoring events will be completed on an as-needed basis. Engineered Controls Checklists will be used to ensure all structures are properly inspected and the required maintenance activities completed.

An annual Engineered Controls I&M Report will be prepared to document inspection and maintenance work completed on engineered controls. Further discussion of the annual report requirements is provided in Section 9.2.4.

The engineered controls located within the OWGC area are inspected and maintained under the *Final Old Works Golf Course O&M*. Additional information on the specifics of OWGC area O&M is provided in Section 9.6.1.

9.2.1 Storm Water Controls

Inspection and maintenance of storm water controls includes the following infrastructure:

- Channels (including grass-lined and armored channels);
- Gabion Basket Structures;
- Storm Water Ponds;
- Trash/Security Racks; and
- Structures (outlet structures, drop inlets, and culverts).

9.2.2 Stream Corridor

Warm Springs Creek flows along the southern edge of the OWGC and along the northern edge of the Red Sands area. Streambank erosion armoring consisting of riprap, gabion baskets, and vegetation are located on the banks of Warm Springs Creek. These sections must be inspected and maintained to protect the integrity of the remedy along Warm Springs Creek. For the section of Warm Springs Creek that flows through the OWGC, inspection and maintenance of the erosion protection is required under the *Final Old Works Golf Course O&M Plan*.

9.2.3 Non-Vegetated Covers

Non-vegetated covers within the industrial area of the OW/EADA OU consist of gravel covers over areas of waste or suspected waste as shown on Figure 9.3. These non-vegetated covers were specified in the WMA where industrial activity or development has occurred, and a vegetative cover was not applicable. The non-vegetated industrial covers are the landowner responsibility to maintain once constructed. The industrial non-vegetated cover will be inspected semi-annually by AR or its designee under the I&M Plan and any damage or noticeable thin areas will be repaired by the property owner.

9.2.4 Annual Reporting

The annual Engineered Controls I&M Report will contain general descriptions of the inspection and repair activities completed, the completed Inspections Forms and Engineered Controls Checklist,

repair as-built drawings, and any modifications to the I&M Plan from that year's activities. The annual report will generally be submitted by the end of the second quarter the following year. Each year the annual report will follow the format of the previous year and address any agency comments or other comments received.

9.3 Maintenance Activities

The VMP and the Engineered Controls I&M Plan specify maintenance requirements for all the revegetated areas and the engineered controls network within the Site, except for those located within the OWGC (which has a stand-alone O&M Plan, *see* Section 9.6.1) and the Dutchman HAA (which has a property management plan). Anticipated maintenance includes fixing erosion, fertilizing, weed spraying, removing trash and debris, or sediment removal and occasionally repairing conveyance structures, revegetating eroded areas, and minor regrading. Maintenance and repairs will be conducted according to the as-built drawings (or original construction drawings where as-built drawings are not available), the Technical Specifications outlined in the original RAWP/FDRs, and any applicable historic preservation requirements, site-specific HASPs, and environmental monitoring requirements. Reporting of maintenance and repair activities will be completed as follows:

- Normal maintenance and repair activities (e.g., fertilizing, reseeding, channel vegetation and riprap repairs, weed spraying, culvert cleaning) will be completed on an as-needed basis and reported in the annual reports.
- Major maintenance and repair activities (e.g., erosion repairs, reconstruction of channels, sediment removal, or repairs to sediment pond components) will be completed according to the original RAWP/FDR specifications on an as-needed basis. EPA will be verbally notified prior to performing the work and a description of the maintenance or repair activity will be reported in the annual reports.
- Maintenance and repair activities that require a modification to the original Agency-approved RAWP/FDR specifications need Agency approval prior to starting the work. AR will prepare an RFM (*see* Section 9.3.1).

9.3.1 Request for Maintenance (RFM)

To facilitate maintenance activities that require a change or deviation from the intent of the original design of a storm water control feature, an RFM will be prepared describing the maintenance activities. The individual RFM, at a minimum, will include a description of the repair needed, proposed repair activities, description of how the proposed repair activity meets the objectives of the previously approved design, and a schedule for implementation. The RFM will be submitted a minimum of 30 days prior to performing the maintenance activities to allow the Agencies time for review and approval. A description of the maintenance and repair activities and repair as-built information (e.g., as-built drawings, product submittals) will be reported in the annual reports.

9.4 Opportunity Ponds Groundwater/Surface Water O&M

The Groundwater and Surface Water Management System located along the eastern toe of the D-Cell dike downgradient of the Opportunity Ponds and upgradient of the WMA groundwater POC boundary, will be operated, monitored, and maintained per the *Groundwater and Surface Water Management System Operation and Maintenance Plan* (Site Document Register No. 608-11-95). The system passively treats groundwater by intercepting shallow groundwater in an interception trench and then passing the intercepted groundwater through a conveyance channel and retention pond where the holding time and exposure to the atmosphere (oxygen) allow iron and metals to precipitate. Monitoring and maintenance of this system is required and may include collection of surface water quality samples and elevation data from the interceptor trench, decant tower outlets, conveyance channel, and retention pond. Groundwater monitoring also may be periodically conducted if determined necessary and may include performance wells prior to the interceptor trench, between the interceptor trench and the retention pond, and/or between the retention pond and the wetlands. The surface water and groundwater results collected will be utilized to enhance the performance of the system and for evaluation purposes, not for comparison to groundwater standards. Monitoring of the downgradient POC wells will be completed per the GWMP.

9.5 Slag

Prior to final closure (as described in Section 6), EPA and DEQ have approved select uses of slag materials for other beneficial purposes. As presented in the ARWW&S OU ROD, EPA and DEQ approved the use of the slag for purposes of blasting media, manufactured roofing material and other building materials, underground pipe bedding material, aggregate material for concrete, and controlled landscaping (e.g., golf course sand traps). Since issuing the ROD, EPA and DEQ have approved the following additional uses: Portland Cement manufacturing, glass manufacturing, pig iron manufacturing, and glass proppant manufacturing. The pig iron and glass proppant manufacturing approval from DEQ is conditional upon demonstration that they will not adversely affect State groundwater.

9.5.1 Slag Management Plans

As discussed in Section 2, three distinct slag piles are located on the Site, including the MGS, the WSS, and the ALS piles. The *MGS Management Plan*, the *WSS Management Plan*, and the *ALS Management Plan* have been developed. These plans identify activities necessary for controlling wind and water erosion as well as other maintenance requirements for each of the piles. Management activities include:

- Annual storm water controls inspection and maintenance;
- Regular inspection of site access controls, including fences, gates, and signs restricting access;
- Inspection of dust mitigation requirements necessary to control fugitive dust from the slag materials;
- Inspection of noxious weeds and necessary control requirements;
- Maintenance of ICs relating to restricting potable ground water use;

- Inspection of site erosion and maintenance of BMPs to minimize wind and water erosion of slag; and
- Grading and placement of soil cover over select areas of the pile to mitigate fugitive dust.

Covers (partial or final) that have been constructed will be inspected and maintained under the respective Slag Management Plans and the VMP. Annual reports will summarize any slag processing activities (pre-final closure), results of inspections (e.g., weeds, erosion, trespass, site security), and required maintenance activities. Reports will be submitted by AR to the Agencies by the end of the first quarter of each calendar year.

Final closure of the slag materials is triggered either by permanent suspension of processing operations, by the end of 2025 if no processing is initiated, or upon a finding by EPA that conditions present an unacceptable risk to human health or the environment. RDWPs and RAWPs detailing the final closure design for each of the slag piles will be prepared for Agency approval based on post-processing pile configurations and remaining slag volumes. Final closure includes: regrading of pile slopes, as necessary, to provide a stable slope for placement of an engineered cover; revegetation; and storm water controls. If processing has depleted the pile or the pile is relocated, the footprint of the pile will be covered with soil and revegetated. The slag piles are located within WMAs (Category 6); thus, upon achievement of vegetation Performance Standards, these areas will continue to be monitored/maintained through LTIM.

9.6 Dedicated Developments

DDs are located within the Site where waste materials have been left in place. These primarily include the OWGC owned and operated by ADLC and the active Anaconda Railroad Line from Butte to Anaconda owned and operated by RARUS (a/k/a Patriot a/k/a BA&P). Specific maintenance requirements for both the OWGC and Anaconda Railroad Line are provided in specific O&M Plans for each DD, as summarized below.

9.6.1 Old Works Golf Course O&M Plan

The OWGC was constructed as an EPA-approved DD as part of, and in conjunction with, the remedy. As such, there are certain O&M activities that must be performed as part of Golf Course operations to maintain the effectiveness and protectiveness of the remedy. The OWGC O&M Plan defines the O&M requirements that apply to the Golf Course and the associated remedy. The remedy includes the following:

- Soil caps over waste material;
- Various types of vegetation and other structures (e.g., non-irrigated areas and landscaped areas) that protect the soil caps and limit the infiltration of surface water through the underlying soil cap materials;
- High density polyethylene (HDPE) liners beneath Lakes #1 and #2; polyvinyl chloride (PVC) liners beneath the greens, tees, and formal bunkers; and 60-mil HDPE liners beneath informal bunkers;

- An extensive underdrain piping system that captures, contains, and routes storm water from the OU to Lakes #1 and #2, Sediment Pond 6, and Channel 3A;
- Bank erosion protection consisting of riprap and vegetation located on both banks of Warm Springs Creek;
- Sediment Ponds 1, 2, 3, and 5 and Metering Basins 1, 2, and 3 and the Stucky Ridge Sediment Pond, which collect storm water and sediment and control runoff onto the Golf Course;
- Sediment Pond 6, which collects storm water and drainage from Lake #2 and storm water from areas of the Golf Course and Stucky Ridge east of Lake #2; and
- Channel 3A, which collects subsurface drainage from Hole #11, the portion of Hole #10 on the south side of Warm Springs Creek, and the nursery area.

The OWGC O&M Plan specifies the respective routine maintenance responsibilities of AR and ADLC for Golf Course Remedial Features (defined as features whose primary function is to support Golf Course play and operations) and Superfund Remedial Features (defined as features whose primary function is to support the remedy), as well as Other Golf Course Features and Historic Features. Both categories of Remedial Features must be maintained to preserve the protectiveness of the remedy as long as the area remains a golf course. Routine maintenance involves the ordinary maintenance and minor repairs or replacements that may be needed to maintain the function and effectiveness of the Remedial Features consistent with their design and construction. Except as otherwise expressly stated in Part III of the OWGC O&M Plan, and subject to the terms and conditions of the Old Works Golf Course Agreement between AR and ADLC, ADLC will be responsible for most routine maintenance of Golf Course Remedial Features, and AR will be responsible for routine maintenance of Superfund Remedial Features and some specific routine maintenance of Golf Course Remedial Features.

Performance of minor and major repairs requiring any excavation by the Golf Course operator will be coordinated through the ADLC Superfund Program. A minor repair will be documented on a Minor Repair Form, and a major repair will be submitted as an RFM to EPA and AR for review and approval. Routine maintenance and major repairs/replacements to remedial features will be the shared responsibility of ADLC and AR and are discussed in greater detail in the OWGC O&M Plan. A written Development Plan will be prepared by ADLC and approved by EPA prior to performance of any future development activities on the Golf Course property. AR will prepare and provide to the Agencies and ADLC an annual report that documents all inspections conducted during the prior calendar year pursuant to the O&M Plan. AR, the Agencies, and ADLC must approve, in writing, all proposed modifications to the O&M Plan.

In the event the OWGC ceases to be utilized as a golf, the *Final Old Works Golf Course (OWGC) Conversion Remedial Action Work Plan (RAWP)* (Site Document Register No. 400-05-772) shall be implemented to ensure the current waste-in-place remedy will continue to remain protective of human health and the environment. The conversion plan remedy includes the following:

- Waste removal and consolidation on-site for miscellaneous exposed wastes and slag bunkers;
- Engineered covers constructed over consolidated waste areas, including the Red Sands and Heap Roast Slag;
- Riprap armoring upgrades to Warm Springs Creek corridor;
- Selectively replacing the tee box and green grasses that require significant upkeep and ample water to flourish with vegetation consisting of native plant species more suitable for the semi-arid site conditions; and
- Abandonment of portions of the underdrain system and irrigation system that are no longer needed.

9.6.2 Railroad Superfund O&M

The Active Railroad line and yards from Anaconda to Butte are located within the Anaconda Smelter NPL Site from approximately Durant Canyon to the West Anaconda Yards (*see* Figure 5.7) and is a component of RDU 5. RAs have removed and/or stabilized the mining-related materials that were or may be located on RARUS property. However, some materials containing elevated COCs have remained in place, and as such, the railroad has been designated as a DD. The *Final Active Railroad Superfund Operations and Maintenance (O&M) Plan* (Site Document Register No. 605-29-750) identifies the locations, guidelines, and reporting requirements under CERCLA for the O&M of the Active Railroad line and yards. The CERCLA monitoring and maintenance activities primarily involve verifying that the remedy remains intact and functions to limit exposure to humans or potential environmental receptors (e.g., rivers). The response action sites covered under the O&M Plan include:

- Engineered Industrial Covers;
- Surface Water Conveyances and Stream Crossings;
- Non-RA Active Track; and
- Remediated Railroad Embankments.

RARUS will be responsible for performing and recording annual inspections on the appropriate forms. Supplementary CERCLA inspections will be performed on an as-warranted basis following unusual events, particularly after precipitation events. Once every five years, RARUS, AR, and the Agencies will complete a visual inspection of the entire DD for the purpose of corroborating the annual inspection findings.

RARUS will obtain an ADLC DPS permit when performing maintenance activities within the Superfund Overlay that involve the excavation of 1 cubic yard of soil or more. Weed control will be performed using appropriate herbicides or physical control methods.

RARUS will prepare an annual O&M Report for their properties within the Site which will include a description of O&M activities and monitoring performed.

In the future, it may become necessary to revise the O&M Plan. The revised plan will be submitted to EPA for approval and approved final copies will be distributed to the Agencies, the responsible railroad parties, AR, and ADLC.

In the event that rail service for any segment of the Active Railroad line is suspended, the *Remedial Design Unit (RDU) 5 Active Railroad Conversion Remedial Action Work Plan (RAWP)* (Site Document Register No. 605-05-941) provides a contingent remedy to convert segments of the existing Active Railroad within RDU 5 to an alternate dedicated development that is consistent with the waste containment remedy, including conversion to a recreational trail in accordance with the "railbanking" process authorized by Section 8(d) of the National Trails Systems Act, 16 U.S.C. § 1247(d), and 49 U.S.C. § 10903 and its implementing regulations (49 C.F.R. Part 1152). The conversion ensures that the remedy will continue to protect human health and the environment, and can be applied to any discrete segment of railroad where active rail service is suspended. The RDU 5 Conversion Remedy includes the following:

- Removing and salvaging or recycling steel rail as determined by the railroad owner;
- Removing ties at certain locations;
- Grading ballast and slopes to achieve a stable subgrade;
- Capping and revegetating side slopes with native grasses where exposed wastes are present;
- Armoring embankment areas where surface waters may contact the railroad embankments (e.g., drainages, ditches, existing culverts);
- Constructing a vegetative cover over the entirety of the rail segments through the Smelter Hill Facilities Area RDU 14 and the rail segments of the RDU 8 and Bonneville Spurs where public access will be prohibited; and
- Constructing a granular cover for the trail surface and within the West and East Anaconda Yards.

9.7 Repository O&M

Two repository areas are present within the Site. The first consists of the Smelter Hill Repository Complex (SHRC) located on Smelter Hill that includes the previously constructed Arbiter, Flue Dust, Aspen Hills, Beryllium, and 2004 Beryllium Repositories. The second is the Anaconda Development Repository (ADR) located within the Opportunity Ponds WMA where contaminated soils and mine waste materials produced from long-term development activities in and around Anaconda will be consolidated. Additional waste consolidation areas also are present at the Site within the Opportunity Ponds WMAs. These consolidation areas are utilized by the State of Montana for disposal of waste materials from the Clark Fork River and Silver Bow Creek (i.e., B2.12 Cell) and for consolidation of miscellaneous wastes and highly impacted soils discovered during ongoing ARWW&S OU and CSOU RA activities (i.e., A.9 and D.1 Cells). Following closure, the B2.12 and D.1 Cells and other Site consolidation areas will be operated, maintained, and/or monitored under the requirements of the VMP. The SHRC and the ADR have specific O&M requirements, as discussed below.

9.7.1 Smelter Hill Repository Complex

As outlined in the *Final Smelter Hill Repository Complex (SHRC) Long-Term Operation, Monitoring, and Maintenance (OM&M) Plan* (Site Document Register No. 614-29-776), AR will operate, monitor, and maintain the Smelter Hill Repository Complex to ensure that the repositories are performing as intended. The plan describes the OM&M activities to be conducted at the SHRC as follows:

- Monitoring leachate levels in the Arbiter, Beryllium, and Flue Dust Repositories;
- Operating and maintaining the long-term leachate management system as needed to pump, treat, and disperse leachate from the Flue Dust Repository. Leachate from the Arbiter and Beryllium Repositories does not require treatment; however, the same sump pump, storage tanks, and dispersal/evaporation system will be used to manage leachate from these repositories;
- Monitoring the SHRC groundwater monitoring system;
- Maintaining surface water diversion structures in the SHRC area to appropriately convey storm water runoff; and
- Maintaining the function and integrity of the repository final cap systems.

9.7.2 Anaconda Development Repository

Monitoring and maintenance activities for the Anaconda Smelter Development Repository will be performed according to the *Final Anaconda Smelter Development Repository Operation and Management (O&M) Plan Revision 1* (Site Document Register No. 608-12-93). The plan specifies requirements for maintaining the repository as an active and open repository that will be accepting contaminated soil and mine waste into the future. Materials consolidated and placed in the repository will be tracked. Haul roads used for waste disposal within the repository will be graded and kept in good condition to facilitate continued soil and waste material hauling and placement operations. As the repository is closed or sections of the repository are closed (as they fill and capacity is reached), final cover will be installed, and vegetation established as the final remedy.

10.0 INSTITUTIONAL CONTROLS

EPA has approved the ICIAP. The ICIAP is intended to function together with this SMP, and the other management plans referenced herein to provide assurance that the remedies selected for the Site pursuant to the Site RODs will be maintained and that additional remedies will be implemented, if needed, when property within the Site is developed.

The ICIAP identifies and describes the primary ICs for the Site as well as when and by whom the primary ICs will be implemented, monitored, and enforced and how the effectiveness of those ICs will be reviewed. Generally, the implementation, monitoring, and enforcement of the primary ICs will be performed by ADLC with funding and support from AR and with oversight and support from EPA. ADLC's performance of its primary ICs responsibilities will be funded and governed by the terms of the RCFSA and a 2022 Amendment of Agreement and Covenant Not to Sue (EPA Docket No. CERCLA-94-12) between ADLC, EPA, the State and Old Works Golf Course, Inc. (CNSA Amendment).

If ADLC fails or ceases to perform its responsibilities with respect to some or all of the primary ICs for the Anaconda Site at some point in the future, EPA will allow one or more governmental or non-governmental entities (which may include AR, DEQ, other appropriate State agencies, EPA, or some combination of those entities and their contractors) to implement the ICs contingencies described in section 12.0 of the ICIAP. EPA will provide those entities with a reasonable period of time sufficient to implement the ICs contingencies and demonstrate that they will effectively protect the remedy. No other ICs will be required under the CD unless: (i) reasonable time and efforts to implement the ICs contingencies have been employed, and (ii) the ICs contingencies have been determined by EPA to not be effective or protective.

AR and ADLC will prepare and submit to the Agencies annual reports summarizing their respective activities undertaken during the prior year to implement, monitor, and enforce the primary ICs for the Site.

10.1 Primary ICs

The primary ICs for the Site consist of certain governmental controls, proprietary controls, and informational devices and other program services, which are described in detail in section 6.0 of the ICIAP and generally summarized below.

10.1.1 Governmental Controls

ADLC has (i) adopted certain Amendments to Articles II, XXX, XXXI, and XXXIV of its Development Permit System ordinance (Amended DPS), and (ii) agreed to abide by, implement, and enforce the Amended DPS as a primary IC for the Site. The requirements of the Amended DPS are described in detail in Sections 6.1.1 (Amended DPS Excavation Provisions) and 6.1.2 (Amended DPS

New Domestic Groundwater Well Provisions) of the ICIAP and a copy of the Amended DPS is included as Attachment A to the ICIAP.

To summarize, the Amended DPS requires a permit for any subdivision of land, clearing, grading, excavation, reconstruction, or any development or building activity within the Superfund Overlay, with certain exceptions. The Amended DPS also requires a permit for all new domestic wells installed in the Superfund Domestic Well Overlay. Wells permitted in the Superfund Domestic Well Overlay will be sampled by AR under the *Domestic Well Monitoring Plan – Revision 1* (Site Document Register No. 100-12-866). Maps 3 and 4 of the ICIAP identify the overlay districts.

10.1.2 Proprietary Controls

Proprietary controls in the form of restrictive covenants have been imposed through various conveyance and other instruments on portions of the Site that have been designated as WMAs and HAAs. Map 2 of the ICIAP illustrates parcels within the WMA and HAA portions of the Site that have restrictive covenants. Due to the quantity and characteristics of the residual contamination in the WMAs and HAAs, the restrictive covenants serve as a second layer of ICs for the parcels of property located within those areas. Typical covenants placed on the WMAs and HAAs include prohibitions against interference with the remedial action performed on the property, prohibitions on installing new wells for groundwater use, and a future access covenant that allows reasonable access for AR, EPA, and DEQ for monitoring, maintenance, and remedial action activities. The proprietary controls are described in detail in Section 6.2 of the ICIAP. The locations of the WMAs and the HAAs within the Site are depicted on Figure 10.1. The parcel identification numbers correspond to the Restrictive Covenants Summary Table attached as Appendix B to the ICIAP.

10.1.3 Informational Devices and Other Program Services

Informational devices are tools that serve to provide information and educate the community about the presence of residual contamination that remains within the Site and measures to reduce risk. The informational devices and other program services that have been selected as primary ICs for the Site consist of a CPMP, an Interior/Exterior Dust Program, a Soil Swap Program, and a Blood Lead Monitoring Program. Each of the programs are generally described in the subsections below.

10.1.3.1 CPMP

The CPMP is described in Section 6.3.1 of the ICIAP and consists of the following components:

- Community Outreach;
- Community Awareness and Education;
- Public Inquiries; and
- Geographic Information System.

The Community Outreach, Community Awareness and Education, and Public Inquiries components of the CPMP will be implemented by ADLC in accordance with the CPMP Plan attached as Appendix

F to the ICIAP. The GIS component of the CPMP will be maintained and updated as a shared responsibility of AR and ADLC as described in the AR *Institutional Controls Management System Plan* and the ADLC *Institutional Controls Management System Plan* attached as Appendices H and I, respectively, to the ICIAP, and the DMP, included as Appendix B to this SMP.

10.1.3.2 Interior/Exterior Dust Program

The Interior/Exterior Dust Program is described in Section 6.3.2 of the ICIAP and will be implemented by ADLC. Through the Interior/Exterior Dust Program, ADLC will provide persons or entities engaged in eligible home renovation, remodeling, or demolition activities with a Home Renovation Kit, which will include a plastic drop cloth, dust mask, safety glasses, and gloves with instructions on proper use of those tools, and the use of a HEPA vacuum for dust removal. For exterior projects, ADLC will provide large tarps to eligible persons or entities to minimize recontamination of yard soils from reroofing, exterior demolition, or exterior paint stripping.

10.1.3.3 Soil Swap Program

The Soil Swap Program is described in Section 6.3.3 of the ICIAP and will be implemented by ADLC in accordance with the Soil Swap Plan attached as Appendix E to the ICIAP. Through the Soil Swap Program, ADLC will provide raised structures and/or clean soil for eligible vegetable gardens, designated play areas, or excavation areas less than one (1) cubic yard within the Superfund Overlay.

10.1.3.4 Blood Lead Monitoring Program

The Blood Lead Monitoring Program is described in Section 6.3.4 of the ICIAP and will be the responsibility of AR. Through the Blood Lead Monitoring Program, AR will provide voluntary blood lead monitoring services to individuals who live within the Superfund Overlay through 2030. Blood lead data collected for the monitoring program will be used to identify specific children, if any, with blood lead levels greater than 5 µg/dL and to provide general information on exposure trends over time to support EPA's FYR evaluations.

10.2 Monitoring of Primary ICs

The responsibilities of ADLC and AR for monitoring of the primary ICs are described in Section 7.0 of the ICIAP. ADLC will be primarily responsible for monitoring compliance with the applicable requirements of the Amended DPS, and AR will be primarily responsible for monitoring compliance with the restrictive covenants as part of routine inspection and maintenance activities associated with the WMAs and HAAs. Monitoring also will occur through AR's coordination with ADLC with respect to applications received by ADLC for developments within the WMAs and HAAs pursuant to the Amended DPS.

10.3 Modification/Termination of Primary ICs

The responsibilities of ADLC and AR with respect to proposed modifications or terminations of primary ICs are described in Section 8.0 of the ICIAP. The Amended DPS may be further modified

so long as the proposed amendments are consistent with the RODs. The restrictive covenants applicable to the WMAs and HAAs may be modified or terminated so long as AR first secures the written approval of EPA prior to agreeing to any proposed modification or termination. The CPMP, the Interior Dust Program, the Soil Swap Program, and the Blood Lead Monitoring Program also may be modified or terminated based on information obtained through the implementation process so long as the written approval of EPA is obtained prior to implementation of the proposed modification or termination.

10.4 Enforcement of Primary ICs

The responsibilities of ADLC and AR for enforcement of the primary ICs are described in Section 9.0 of the ICIAP. ADLC has primary responsibility for enforcing compliance with the applicable requirements of the Amended DPS, and AR has the primary responsibility for enforcing the restrictive covenants.

10.5 Annual Reporting for Primary ICs

Pursuant to the RCFSA and ICIAP, AR and ADLC will prepare and provide annual reports to EPA and DEQ summarizing their respective activities undertaken during the prior year to implement, monitor, and enforce the primary ICs for the Site.

10.6 Primary ICs Reviews

As provided in Section 11.0 of the ICIAP, to ensure that the primary ICs remain in place and continue to be effective, the ICs records of ADLC, AR, and their respective contractors will be available for periodic inspection and review by EPA and DEQ upon request. Additionally, appropriate representatives of ADLC, AR, EPA, and DEQ will meet and confer annually to review and discuss the overall effectiveness of the primary Site ICs. Following the annual meetings, EPA will issue written evaluations of ADLC's performance of its primary ICs obligations under this ICIAP utilizing the evaluation form attached as Appendix I to the ICIAP. Periodic monitoring of the effectiveness and protectiveness of the primary ICs also will be accomplished through the FYR process.

10.7 ICs Contingencies/Additional Measures

As provided in Section 11.0 of the ICIAP, if ADLC fails or ceases to perform its responsibilities with respect to some or all of the primary ICs for the Site in the future, EPA will allow one or more governmental or non-governmental entities (which may include AR, DEQ, other appropriate State agencies, EPA or some combination of those entities and their contractors) to implement the ICs contingencies described in Sections 12.1 (Materials Handling program), 12.2 (New Domestic Well IC Program), 12.3 (Controlled Groundwater Area Rule), and 12.4 (Informational Devices and Other ICs Programs) of the ICIAP as the initial "additional measures" required pursuant to the RODs. EPA will provide those entities with a reasonable period-of-time sufficient to implement the IC contingencies and demonstrate that they are an effective protection for the remedy. No other ICs or additional measures will be required unless (i) reasonable time and efforts to implement the ICs

contingencies have been employed, and (ii) the ICs contingencies have been determined not to be effective or protective.

11.0 REMEDIAL ACTION COMPLETION AND CLOSE-OUT AND DELETION / DELISTING

This Section describes the path to Remedial Action Completion (RA Completion), which also is illustrated on the flowchart provided in Figure 11.1. The RA Completion process involves completion, documentation, and approval of all RD/RA activities and Monitoring and Maintenance to ensure that the remedy is operating and functioning as designed and that the applicable Performance Standards have been or are being met. As described in more detail below, the RA Completion process includes five general phases or steps: (1) RA Construction; (2) Performance Monitoring & Maintenance; (3) RA Reports and Certification of RA Completion; (4) Institutional Controls / Operation and Maintenance; and (5) Deletion / Delisting.

11.1 Remedial Action Construction

The first phase of the RA Completion process—RA Construction—is described in more detail in Sections 5 and 7 of this SMP. Generally, this phase includes the following:

1. *Remedial Action Work Plan (RAWP) / Individual Site Work Plan (ISWP)* – The RAWPs / ISWPs describe the construction and implementation requirements to meet the remedial requirements identified in the ROD, ROD Amendments, and ESDs (and reiterated in the Design Reports) for the selected remedy to achieve RA Objectives for the impacted media in each area.

2. *Construction and Construction QA/QC / Field Implementation Plans (FIPs)* – These activities include: (i) implementation of the designed remedy in accordance with the requirements specified in the approved RAWPs/ISWPs; (ii) performance of Construction QA/QC in accordance with the Sitewide CQAP; and (iii) RDU-specific Confirmation Sampling FIPs to verify that the remedy has been constructed and implemented and has achieved the remedial requirements for containment, treatment and/or removal (including cleanup levels for impacted media). These activities and requirements are discussed in more detail in Section 7 of this SMP.

3. *Construction Inspections* – The inspection process includes a final walkthrough and verification—by EPA utilizing the Construction Punch list for remediated areas within the ARWW&S OU and the OW/EADA OU, and via landowner inspections in the CSOU—that all RA construction elements have been completed in accordance with the applicable, approved RAWPs/ISWPs, as modified through the RFC process. Inspections can occur for RA constructed for a specific project or remedial element, an RDU or Subarea, or an OU. These activities and requirements also are discussed in subsections 5.1(a)(4) (Inspections) and 5.1(d)(3) (Inspection of Constructed Remedy) of the SOW and in Section 7 of this SMP.

4. *Construction Completion Reports (CCRs)* – Following inspections, CCRs are prepared and submitted to the Agencies. CCRs summarize RA construction activities and demonstrate that a scope of work has been fully constructed. Agency approval of the CCR—coupled with an

affirmative O&F Assessment, discussed below—indicates that a project area can pass from the RA Construction phase into the Performance Monitoring & Maintenance phase. CCRs are described in more detail in Section 7.4.1 of this SMP and section 5.1(d)(5) of the SOW.

5. *Operational and Functional (O&F) Determination* – Following any shakedown period defined in RAWPs, FDRs, and/or ISWPs, AR will perform an O&F inspection and then prepare an O&F Evaluation. An O&F field assessment may occur once: (i) RA implementation has been substantially completed, (ii) the items identified on the Construction Punch list (ARWW&S and OW/EAD OUs) / Landowner Inspections (CSOU) created during the pre-final inspection are implemented and a CCR has been prepared, and (iii) AR has performed a preliminary inspection of the remedy elements and determined the remedy to be O&F. The O&F Evaluation of vegetation and soil stability typically will occur near the end of the first full growing season following construction activities and seeding. Following submission of the report, EPA will conduct a O&F verification inspection and will confirm whether the remedy elements are O&F.
6. *CCR Approval* – For a specific project, RA element, or other scope of work to pass from RA Construction into the Monitoring & Maintenance phase, EPA must review and provide final approval of the CCR. Approval of the CCR constitutes a determination by the Agencies that RA Construction is complete under the SOW.

11.2 Performance Monitoring & Maintenance

The second phase of the RA Completion process for the applicable portions of the ARWW&S OU and OW/EADA OU is performance monitoring and maintenance of the implemented remedy. Monitoring is performed to verify that the remedy is on a trajectory towards meeting vegetation and erosion Performance Standards and short-term maintenance is performed to address deficiencies identified during these performance monitoring activities. Performance Standards for remediated areas have been developed based on more than two decades of ecological research and reclamation at the Site and on the goals/requirements set forth in the ROD and ROD Amendments. The relevant vegetation compliance standards that a remediated property/area is subject to are based on the residual arsenic and lead concentrations remaining in the soil following completion of the RA Construction Phase discussed in Section 11.1. Properties/areas with soils concentrations less than 250 mg/kg and 400 mg/kg for arsenic and lead, respectively, as confirmed through the Confirmation Sampling FIP (*see* Subsection 11.1(2) above) are identified as Category 1 parcels and all other properties/areas are categorized as Categories 2 through 6 (further defined in the VMP). The associated compliance performance monitoring standards for each of these properties/areas are discussed below.

11.2.1 Category 1 Properties

Properties/areas determined by EPA to be (i) O&F based on verification of the soils/vegetation information presented by AR, and (ii) supported by soil sampling, as prescribed in the Confirmation Sampling FIP confirming that arsenic is less than 250 mg/kg and lead is less than 400mg/kg, are classified as Category 1 Properties, as described in the VMP and Section 8.0 of this SMP, and shall

require no further vegetation performance monitoring. Future maintenance of these properties/areas shall include two years of post-RA Construction weed spraying by AR.

11.2.2 Properties Not Meeting Category 1 Requirements – Short-term Monitoring and Maintenance

Properties that are determined to be O&F but have not obtained Category 1 remedial requirements/goals, as described above, will be subject to Short-term Monitoring and Maintenance requirements. Short-term Monitoring and Maintenance will be performed until applicable vegetation and erosion performance standards have been met, as described in Section 8 and the VMP.

Once vegetation and erosion Performance Standards are met, AR will prepare and submit a Compliance Determination Report to the Agencies. The report should contain all soils/vegetation performance monitoring data and information previously collected for the area(s). Based on the report, EPA will review the performance monitoring information and make a determination as to whether Performance Standards have been met. This process is described in more detail in Sections 8.1.3.1 and 8.1.3.2 of this SMP.

Upon receipt of the Compliance Determination Report and completion of the necessary independent reviews and assessments, EPA will prepare a Compliance Determination Report Approval letter stating whether the area(s) pass or fail the compliance determination. The Compliance Determination Report Approval process is described in more detail in Section 8.1.4 of this SMP.

After all applicable areas within a RDU or Subarea have been determined to be compliant with Performance Standards set forth in the VMP through the Compliance Determination Report submittal and approval process, a Remedial Action Completion Report then will be prepared for that RDU or Subarea, as described below.

11.3 RA Reports and Certification of RA Completion

The third step in the RA completion process is preparation and submission of RA Reports and Certification of RA Completion, in accordance with section 5.1(e) of the SOW. RA Reports will be prepared and Certification of RA Completion will be issued for any OU or OU sub-unit (such as an RDU, expansion area, specific project, RA element, or other subarea). As described in EPA's *Close Out Guidance*, the RA Report should "document the cleanup activities that occurred to fully implement a RA project at the site." In accordance with section 5.1(e)(4) of the SOW, the RA Report must: (1) include certifications by a registered professional engineer and by AR's Project Coordinator that the RA is complete; (2) include as-built drawings signed and stamped by a registered professional engineer; (3) be prepared in accordance with Chapter 2 (Remedial Action Completion) of EPA's *Close Out Guidance*, as supplemented by *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017); (4) contain monitoring data to demonstrate that applicable Performance Standards have been achieved; and (5) be certified in accordance with section 8.5 of the SOW (Certification). The RA Report also shall contain a summary of required wetlands accounting (i.e., the Four-Step Wetlands Mitigation Process), and cultural and historic resources evaluations and mitigation activities, where applicable. *See* Sections 11.3.1 and 11.3.2, respectively.

RA Reports will be prepared for each OU and/or OU sub-unit, and submitted to the Agencies after the final inspection and compliance determination for the OU or OU sub-unit, and after AR determines that: (i) all RA has been fully performed for that OU or OU sub-unit; and (ii) all applicable Performance Standards for that OU or OU sub-unit have been or are being met.

Once an RA Report for an OU or OU sub-unit has been reviewed and approved by EPA, the Agency will issue a Certificate of RA Completion for the OU or OU sub-unit in the form of Appendix F, attached hereto. Certification of RA Completion for the final sub-unit of an OU will constitute Certification of RA Completion for the entire OU. At the time AR submits the RA Report for the final sub-unit of an OU, it also will request that EPA certify that RA is complete for the entire OU. Certification of RA Completion for the third and final OU, whichever that is, will constitute Certification of Site-Wide Remedial Action Completion for purposes of the Consent Decree. *See* SOW § 5.1(h) (Certification of Site-wide Remedial Action Completion). The Certificate of RA Completion certifies that all RA requirements have been completed in accordance with applicable ROD and Consent Decree requirements, including that ICs and O&M plans are in place, and that all applicable Performance Standards have been or are being met.

11.3.1 Wetlands

Wetland accounting to meet "no net loss" regulatory requirements at the Site will follow the UCFRB Four-Step Wetland Mitigation Process, as addressed in Section 7.1.2.3.1. Wetland areas lost or gained within the Site may be offset, or used as offsets, for "no net loss" of wetland areas at any site within the UCFRB Superfund Sites where AR has completed RA. As RA is completed throughout the Site, one or more Step 4 reports will be prepared to document post-RA wetland delineations for "no net loss" accounting. This information will be used to update UCFRB Wetland Status Summary Reports, which will summarize the status of wetland mitigation for the Site and overall "no net loss" accounting across all Superfund sites within the UCFRB. The summary reports will be used to inform the EPA of "no net loss" wetland accounting status to confirm whether regulatory guidelines for wetland mitigation efforts have been met.

11.3.2 Cultural and Historical

Annually, EPA will prepare an UCFRB Historic Preservation Agreement Annual Report of all cultural and historic mitigation actions conducted and an assessment of the effectiveness of the process under the Second Programmatic Agreement and the 2022 *Cultural and Historic Mitigation and Preservation Plan*. The annual reports will be used to inform EPA that the requirements for cultural and historic preservation have been met. EPA will consult USFS concerning cultural and historic preservation measures on lands administered by USFS within the Site.

11.4 Institutional Controls/Operations and Maintenance

As indicated in Figure 11.1, the RA approval process requires that sufficient ICs must be in effect and Operations and Maintenance plans must be in place and implemented before the Site can be completed and deleted / delisted. As discussed in Section 10, Site ICs are in place and are being

implemented through the ICIAP, which has been approved by EPA. As discussed in Sections 8 and 9 of this SMP, there are several inspection, operations, monitoring, maintenance, and management plans that provide long-term inspection, maintenance, and monitoring of Site features/components, including for WMAs, HAAs, DDs, engineered covers and controls, repositories, Site access, vegetation, groundwater, and surface water, among other things.

11.5 Close-Out and Path to Deletion / Delisting

The final step in the RA Completion process is preparation of the Close Out Report to lead to Site deletion / partial delisting from the NPL. The Close Out Report confirms the completion of all appropriate response actions at the OU or Site, whichever is the subject of the Report, and states that no further RA or response actions are necessary to protect human health and environment within the OU or Site. The report "documents compliance with statutory requirements"; "provides a consolidated record of all removal and remedial activities for the [OU or the] Site"; "describe[s] how the cleanup was accomplished"; and "provide[s] the overall technical justification for site completion." *Close Out Guidance*, at 4-4. Generally, the Close Out Report should include the information identified in Exhibit 4-3 of the *Close Out Report*. The Close Out Report is prepared by EPA, and then provided to DEQ for review and concurrence, before the final Close Out Report is approved and signed by EPA.

If a Close Out Report is approved and signed by EPA, with DEQ concurrence, then the OU or the Site is eligible for deletion or partial delisting from the NPL. The deletion / delisting process is identified in detail in the NCP (40 CFR § 300.425(e)), Section 5.0 of the *Close Out Guidance*, and the Partial Delisting Rule (65 Fed. Red. 55466, Nov. 1, 1995).

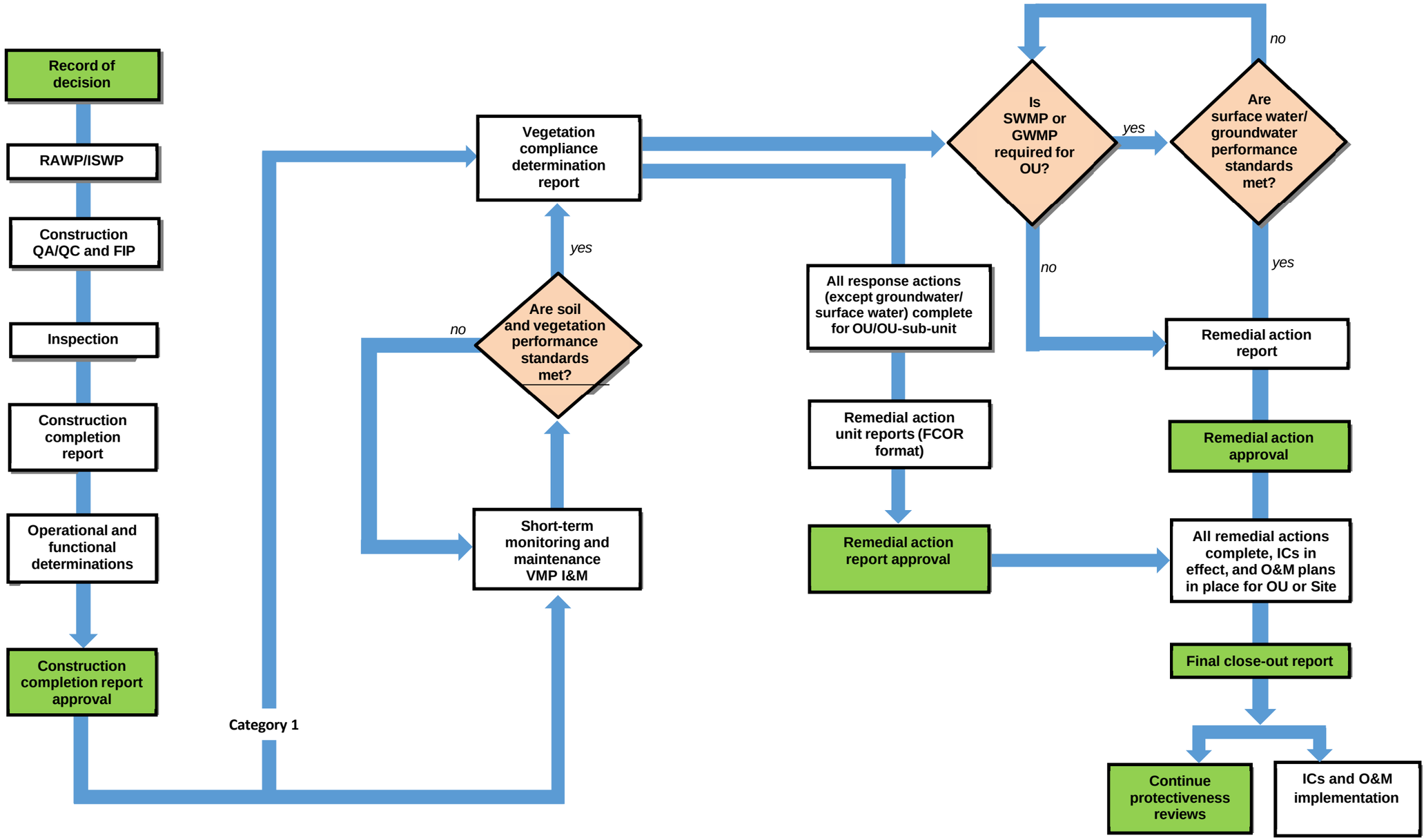
11.6 ICs, O&M, and Protectiveness Reviews

Even after a Close Our Report is approved and the entire Site is deleted from the NPL, ICs implementation, long term O&M (*see* 40 CFR § 300.435(f)), and five-year protectiveness reviews (*see* 42 U.S.C. § 9621(c), 40 CFR § 300.430(f)(4)(ii)) will continue where the applicable ROD, ROD Amendment(s), and/or ESD(s) require such activities.

Figure 11.1

Remedial Action Activities - Path to RA Completion

Anaconda Smelter NPL Site



Denotes an EPA function

Note 1: Partial or full deletion will only be considered for an OU or for the Site after all steps are complete
Note 2: IC's, O&M, and PPA shall remain in effect after RA Completion
Note 3: Any OU or Site delisting/deletion must explicitly reserve EPA's ability to preserve the protectiveness of the Remedy

FCOR-final close out report
FIP-field implementation plan
groundwater monitoring plan
institutional control

ISWP-individual site work plan
I&M-inspection and maintenance
O&M-operation and maintenance
OU-operable unit

QA/QC-quality assurance/quality control
RDU-remedial design unit GWMP-
RAWP-remedial action work plan IC-
SWMP -surface water monitoring plan
VMP-vegetation monitoring plan

12.0 REMEDY REVIEW AND SUPPORT ACTIVITIES

12.1 Five-Year Reviews

Under Section 121 (c) of CERCLA, 42 U.S.C. § 9621(c), EPA is responsible for reviewing Superfund remedial actions at least every five years where hazardous substances, pollutants, or contaminants will remain on-Site above levels that allow for unlimited use and unrestricted exposure. FYRs have been, and will continue to be, conducted to ensure that the remedies and response actions in place or under construction at the Site remain protective of human health and the environment. FYRs will be completed consistent with the latest EPA *Comprehensive Five-Year Review Guidance* (USEPA 2001). The methods, findings, conclusions, and recommendations for correcting deficiencies identified during these evaluations/reviews have been, and will continue to be, documented in FYR Reports.

The reports that have been completed to date are:

1. 1994 – First FYR Report (Site Document Register No. 100-04-310);
2. 1999 – Second FYR Report (Site Document Register No. 100-04-311);
3. 2005 – Third FR Report (Site Document Register No. 100-04-312);
4. 2010 – Fourth FYR Report (Site Document Register No. 100-04-313);
5. 2015 – Fifth FYR Report (Site Document Register No. 100-04-614); and
6. 2020 – Sixth FYR Report (Site Document Register No. 100-15-919).

The FYR steps listed below are the responsibility of EPA and EPA's support contractor and provide for a systematic approach that includes, at a minimum, the following components:

1. Community notification;
2. Identification and interviews with key persons and the general public;
3. Document review;
4. Data review;
5. Issues identification;
6. Site inspection;
7. ARARs review;
8. Risk evaluations; and
9. FYR Report development and review.

FYRs also will include the following:

1. A review of the previous FYR recommendations and actions taken to resolve those recommendations;
2. A summary of the response actions completed to date for each OU, including a summary of the selected remedy, the status of remedial actions completed since the last FYR, and the status of long-term O&M; and
3. An update of the deletion / delisting status for the Site

Section 3.4 summarizes the extensive list and schedule for documents that will be prepared documenting O&M activities within the Site. These documents are key for completing each FYR. The schedule for submittal of these documents is presented in Section 3.4. To facilitate development of the FYR Report, the schedule for submittal of the supporting reports covering the final year of the FYR period may be expedited to the extent practicable.

During each FYR, EPA will consult USFS concerning remedial actions on lands administered by USFS within the Site.

Minimum information needed to review each media within the Site is presented below. Additional information may be identified and become available as Site activities progress.

12.1.1 Surface Water

To facilitate the FYR for surface water, information gathered from the following areas will be reviewed:

1. Documents generated under the SWMP, including monitoring and data and analysis reports summarizing data trends and compliance evaluations;
2. SMP Annual Reports, which summarize surface water monitoring data and exceedances;
3. Site Engineered Controls I&M Plan and Annual I&M Reports; and
4. Any diagnostic monitoring or contingency actions.

As summarized in Section 8.2 of this SMP, the SWMP requires short-term and long-term surface water, along with limited bed sediment and aquatic biota, monitoring on streams within the Site including Mill, Willow, Warm Springs, and Lost Creeks by AR and California Creek by the State of Montana NRDP. Long-term monitoring under this plan is summarized in annual reports and data analysis reports that will be reviewed for each FYR. Surface water data for the 4 creeks AR is responsible for will be collected by the USGS; therefore, annual USGS Clark Fork River Basin monitoring and data analysis reports also will be reviewed to support each FYR. In addition, the remedy includes construction and maintenance of engineered controls. The Engineered Controls I&M Plan and Annual I&M Reports also will be reviewed.

12.1.2 Groundwater

To facilitate the FYR Review for groundwater, information gathered from the following areas will be reviewed:

1. Documents generated under the GWMP (including the Domestic Well Monitoring Plan), including the FYR monitoring and data analysis report summarizing data trends and compliance evaluations;
2. Opportunity Ponds RDU 8 Ground Water Surface Water Management System Plan and Annual Reports; and
3. Any diagnostic monitoring or contingency actions.

As summarized in Section 8.4 of this SMP, the GWMP and its supporting *Final Long-Term Groundwater Monitoring Program QAPP – Revision 1* and the *Final Domestic Well Monitoring Plan – Revision 2* require long-term groundwater monitoring of monitoring wells, domestic wells, and 5-year monitoring of additional wells and springs/seeps within the Site. The intent of the monitoring, which generally includes both semi-annual and annual monitoring of monitoring wells and annual/upon-request monitoring of domestic wells, is to provide yearly data to evaluate the effectiveness and protectiveness of the groundwater remedy and to protect against domestic consumption of groundwater with arsenic concentrations over the drinking water standard. The intent of the additional monitoring to be conducted every five years is to provide data for evaluating the effectiveness and protectiveness of the remedies in meeting the Performance Standards with each FYR. Per the GWMP, annual data summary reports for the domestic well data and the long-term ground water data will be provided by AR in June of each year. The next FYR sampling will be completed in 2023, and AR will prepare a FYR Interpretive Report summarizing historical groundwater monitoring trends for the Site for submittal by the end of 2024 to allow for inclusion in the next FYR.

Groundwater monitoring data and maintenance records associated with the operation and maintenance of the Opportunity Ponds RDU 8 Ground Water Surface Water Management System also will be reviewed. Review of monitoring and maintenance data from this system will be necessary to evaluate the effectiveness of the groundwater remedy and compliance along the POC boundary.

12.1.3 Vegetation/Soils

The VMP identifies short-term performance monitoring and long-term monitoring and management requirements, respectively, for remediated areas within upland areas, steep slope areas, WMAs, and HAAs across the Site. A general review of vegetation and soils remedy performance within these areas in response to the implemented RAs and post-RA management activities will be reviewed for each FYR to determine whether RA Objectives identified in the ARWW&S ROD are being attained. To facilitate the FYR for remediated parcels, information gathered from the following plans will be reviewed:

1. VMP and Annual Vegetation Monitoring Reports (including LTIM of the Opportunity Ponds WMA, Old Works WMA, and Smelter Hill WMA/HAA);
2. Annual Compliance Determination Reports submitted during the FYR period; and
3. *Final Dutchman Riparian Lands Wetlands Mitigation Process Step 4 Confirmation of Response Actions* (Site Document Register No. 617-15-535) and Annual Dutchman OM&M Reports.

Other supplementary information related to the soils/vegetation remedies implemented at the Site may be obtained and/or included in the following plans and annual inspection, monitoring, O&M reports:

1. Engineered Controls I&M Plan and Annual I&M Reports; and

2. *Riparian Area Vegetation and Bank Stability Monitoring Plan for Willow Creek and Warm Springs Creek* (Site Document Register No. 610-12-591) and Annual Monitoring Reports.

In addition to the data collected under the VMP, protectiveness evaluations of the vegetation/soils remedy also must consider components that protect or otherwise affect the presence of vegetation, which includes engineered storm water controls and streambank stabilization and riparian vegetation. To evaluate these other components of the remedy, information from the I&M Plan and the *Riparian Area Vegetation and Bank Stability Monitoring Plan* will be reviewed along with data from the VMP.

Areas in Categories 3, 4, 5, and 6 (i.e., upland areas with moderate to high TMIs and total soil arsenic concentrations less than 250 mg/kg, and WMAs) that have met the compliance evaluation pass into the LTIM phase. This phase of RA is used to: demonstrate the protectiveness of the remedy; demonstrate the remedy has mitigated risk; demonstrate attainment of a stable, self-sustaining plant community and creation of wildlife habitat specified as goals in the ROD (as amended). The FYR of these properties by EPA consists of a qualitative site visit to observe site conditions in relation to previous monitoring data. Within upland areas, FYR monitoring shall consist of a qualitative 5-year review to verify the permanence and sustainability of vegetation, particularly for areas where moderate to high post-RA TMI remain. A 5-year qualitative assessment of vegetation sustainability for Category 3 properties will be made and a review of completed annual Category 5 assessments will be performed at the time of the FYR. Within WMAs (Category 6), FYR monitoring shall consist of a review to verify the permanence and sustainability of vegetation establishment, including an assessment of noxious weeds. Within steep slope areas, FYRs shall consist of a review to verify erosional stability and an assessment of noxious weeds. AR will provide the Agencies evaluation data and information collected for these areas during this phase of vegetation management and Annual Reports. As mandated by CERCLA, EPA will review this information at least every five years to determine if the remedy is remaining protective of human health and the environment or if corrective actions are needed to ensure that the area will again, in a short period of time, meet the risk management goals. A remedial corrective action design plan may need to be prepared and implemented to bring the property back into compliance.

Additional FYR components include assessment of maintenance activities related to DDs and repositories. A general review of the maintenance information and remedy performance within these areas will be compiled to ensure that implemented RAs and post-RA management activities remain protective of human health and the environment. To facilitate the FYR, it is anticipated, at a minimum, information gathered from the following plans and annual inspection, monitoring, operations, and maintenance reports will be reviewed:

1. *Railroad Superfund Operations and Maintenance (O&M) Plan* (Site Document Register No. 605-29-750) and Annual O&M Reports;
2. *Smelter Hill Repository Complex (SHRC) Long-Term Operation, Monitoring, and Maintenance (OM&M) Plan* (Site Document Register No. 614-29-776) and Annual O&M Reports;

3. *MGS Management Plan*; the *WSS Management Plan*; and the *ALS Management Plan*; and Annual Operations Reports; and
4. OWGC O&M Plan and Annual Reports.

12.1.4 Institutional Controls

To facilitate the FYR for ICs, information gathered from the following plans will be reviewed:

1. ICIAP and ICs Program Annual Reports;
2. Anaconda Smelter Development Repository O&M Plan and Annual O&M Reports; and
3. Other relevant development documents.

The ICIAP, together with the individual O&M Plans, are intended to provide assurances that the remedies selected for the Site will be maintained long term and remain protective of human health and the environment.

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