

Anaconda Aluminum Co. Columbia Falls Reduction Plant (Columbia Falls Aluminum) Superfund Site

FINAL NATURAL RESOURCE DAMAGE ASSESSMENT PLAN

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Prepared with assistance from
Industrial Economics, Incorporated (IEc)



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Executive Summary

The Anaconda Aluminum Company Columbia Falls Reduction Plant Superfund Site (the “Site”), in Flathead County, Montana, began operations as an aluminum reduction facility in 1955. Operations resulted in releases of hazardous substances including metals, organic contaminants, and other compounds into the environment. During operations (which ceased in 2009) and since operational closure, these contaminants have continued to be re-released and re-mobilized in the environment through a variety of physical, chemical, and biological processes.

Natural resources such as surface waters, sediments, soils, and biota have been exposed to these hazardous substances, causing potential natural resource injuries and losses to the services these resources provide (Trustees 2023). Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA; 42 United States Code §§ 9601, *et seq.*) and other applicable authorities, representatives from the State of Montana, the Confederated Salish and Kootenai Tribes, the U.S. Department of the Interior, and the U.S. Department of Agriculture (collectively, the Trustees) are conducting a Natural Resource Damage Assessment and Restoration process for the Site. The goal of that process is to restore, rehabilitate, replace, and/or acquire the equivalent of injured natural resources and associated services lost because of the release of hazardous substances, on behalf of the public. Such compensation may take the form of environmental restoration projects or monetary payments to be used by the Trustees to conduct environmental restoration.

Pursuant to the regulations at 43 C.F.R. Part 11 to conduct a Natural Resource Damage Assessment and Restoration process, the Trustees have prepared this Assessment Plan (“Plan”), which describes how the Trustees intend to complete an assessment of potential natural resource injuries and determine natural resource damages (i.e., the amount of money potentially responsible parties will be required to pay for the costs of planning and implementing restoration projects to make the public whole for the injuries and service losses caused by their hazardous substance releases). The purpose of an Assessment Plan is to ensure that the assessment is performed in a planned and systematic manner and the proposed assessment activities can be conducted at a reasonable cost (43 C.F.R. § 11.30(b)).

This Plan provides introductory and background information about the Site, the Natural Resource Damage Assessment and Restoration process, the scope of the assessment, and the natural resources and resource services that are the focus of the assessment (Chapters 1-2). In addition, this Plan details the specific approaches the Trustees anticipate using to determine and quantify natural resource injuries and determine damages (Chapters 3-6). Appendix A presents a quality management plan to guide the Trustees and to ensure that decisions made in the Natural Resource Damage Assessment and Restoration process are based on information of which the quality is well understood and scientifically valid for its intended use.

The Trustees accepted public comment on the Draft Plan. The Trustees encouraged active participation of the public in the assessment through the public comment process. After the public comment period, the Trustees reviewed all public comments received and addressed and responded to those comments, as applicable, in the Final Plan. The Final Plan will serve to guide the Trustees as they implement the assessment. Additional opportunities for public engagement are further described in Chapter 1.

CHAPTER 1 | Introduction

The Anaconda Aluminum Company Columbia Falls Reduction Plant (Columbia Falls Aluminum Company or “CFAC”) Superfund Site (the “Site”) is located approximately two miles northeast of the center of Columbia Falls in Flathead County, Montana. The Site includes Cedar Creek Reservoir to the north, Teakettle Mountain and the Cedar Creek Reservoir Overflow Ditch to the east, Flathead River to the south, and Cedar Creek to the west (Roux 2020a). Operations as an aluminum reduction facility began in the 1950s and continued until 2009. The CFAC industrial site property covers approximately 1,340 acres and included several buildings and industrial facilities, laboratories, landfills, leachate ponds, and percolation ponds – many of which were decommissioned in the 2010s as part of remedial efforts. This document represents the CFAC Natural Resource Trustees’ (“Trustees”) Natural Resource Damage Assessment Plan.

Operations at the Site resulted in releases of hazardous substances including metals and other inorganic ions and compounds, such as barium, fluoride, and cyanide, respectively, as well as organic contaminants including phthalates, polychlorinated biphenyls (PCBs), and polycyclic aromatic hydrocarbons (PAHs). As used in this Plan, “hazardous substances” also refers to “hazardous or deleterious substances” under Comprehensive Environmental Cleanup and Responsibility Act (CECRA), §§ 75-10-701(8), MCA. During operations and since operational closure, these contaminants have continued to be re-released and re-mobilized in the environment through a variety of physical, chemical, and biological processes resulting in the exposure of natural resources such as surface waters, groundwater, sediments, soils, and biota. This exposure to hazardous substances has resulted in short- and long-term natural resource injuries and potential losses to the services these resources provide including services to other natural resources in the ecosystem and services to humans who rely on, use, and value these resources (Trustees 2023).

This Plan describes the Trustees’ approach to conducting a Natural Resource Damage Assessment and Restoration (NRDAR) for this Site, which includes assessing hazardous substance releases and the associated adverse impacts to natural resources and resource services. The Assessment Area will include anywhere that the contamination has come to be located from Site operations.

Separate and distinct from the environmental remediation of the Site, which is conducted by the United States Environmental Protection Agency (EPA), in consultation with the Montana Department of Environmental Quality (DEQ), this NRDAR process conducted by the Trustees will be performed in accordance with relevant federal, state, and tribal laws and regulations, discussed in the sections that follow, addressing compensation for the public for natural resource injuries and associated losses. Specifically, this Plan summarizes existing information available for the Site; describes the Trustees’ approach to injury determination, injury quantification, and damages determination; and outlines ongoing and proposed activities to evaluate Site-related hazardous substance releases and subsequent effects on natural resources and the services they provide.

WHAT IS NRDAR?

Natural Resource Damage Assessment and Restoration is a process to determine the appropriate amount and type of restoration needed to compensate the public for any harms (i.e., “injuries”) to natural resources or the loss of ecological services resulting from the release of hazardous substances into the environment.

1.1 Authority to Conduct a Natural Resource Damage Assessment and Restoration

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) authorizes federal, state, and tribal representatives to serve as trustees of public natural resources. In this role, trustees may assess

and recover damages for natural resource injuries resulting from releases of hazardous substances or oil to the environment. Trustee entities for natural resources in and around the CFAC Site include:

- the Governor of the State of Montana, with the Montana Natural Resources Damage Program (NRDP) acting as his representative,
- the Confederated Salish and Kootenai Tribes (CSKT),
- the U.S. Department of the Interior (DOI), acting through the U.S. Fish and Wildlife Service (USFWS) and the Bureau of Indian Affairs, and
- the U.S. Department of Agriculture (USDA), acting through the U.S. Forest Service (USFS).

Together, representatives from these entities constitute the CFAC NRDAR Trustee Council, or the Trustees. The Trustees' decision to conduct a NRDAR was detailed previously in the 2022 Pre-Assessment Screen Determination (Trustees 2023). The NRDAR will be conducted pursuant to CERCLA, as well as the federal Water Pollution Act (the "Clean Water Act" (CWA), 33 U.S.C. §§ 1251, *et seq.*), the Oil Pollution Act, 33 U.S.C. §§ 2701 *et seq.*, and CECRA.

Further, regulations have been promulgated to guide trustees in the assessment of natural resource injuries and damages. Under the authority of CERCLA and CWA, DOI issued regulations (43 C.F.R. Part 11; hereafter "CERCLA NRDAR regulations") for conducting NRDAR following the discharge of oil and/or the release of hazardous substances. The purpose of the regulations is "to provide standardized and cost-effective procedures for assessing natural resources damages" (43 C.F.R. § 11.11). When trustees complete an assessment according to these procedures, the results "shall be accorded the evidentiary status of a rebuttable presumption" (43 C.F.R. § 11.11). It is the Trustees' intent to pursue the damage assessment described in this Plan in accordance with the regulations at 43 C.F.R. Part 11.

KEY DEFINITIONS FROM THE CERCLA NRDAR REGULATIONS (43 C.F.R. § 11.14)

"**Natural resources** ... means land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States..., any State or local government, any foreign government.... These natural resources have been categorized into the following five groups: Surface water resources, ground water resources, air resources, geologic resources, and biological resources" (43 C.F.R. § 11.14(z)).

"**Injury** means a measurable adverse change, either long- or short-term, in the chemical or physical quality or the viability of a natural resource resulting either directly or indirectly from exposure to a discharge of oil or release of a hazardous substance, or exposure to a product of reactions resulting from the discharge of oil or release of a hazardous substance" (43 C.F.R. § 11.14(v)).

"**Damages** means the amount of money sought by the natural resource trustee as compensation for injury, destruction, or loss of natural resources" (43 C.F.R. § 11.14(l)).

1.2 Site History

CFAC's historic landholdings amount to approximately 3,196 acres.¹ Of this, the area historically utilized for operations, along with a surrounding buffer zone, covers approximately 1,340 acres. The Site is bounded by and may include Cedar Creek Reservoir to the north, Teakettle Mountain to the east, Flathead River to the south, and Cedar Creek to the west (Figure 1). The Site is in the Flathead watershed approximately two miles northeast of the center of Columbia Falls, Montana, and 0.8 miles from the nearest residences. The Site generally slopes

¹ In 2025, CFAC sold 2,400 acres to Ruis Construction.

from the north to southwest direction towards the Flathead River, and ranges from approximately 3,020 to 3,535 feet above mean sea level (Roux 2020a).

The Site was used primarily as an aluminum reduction plant from 1955 to 2009, when all manufacturing or commercial activities stopped. The Site used the Hall-Héroult process and the Vertical Stud Soderburg technology to produce aluminum from alumina using an electrolytic reduction process in a series of cells, or pots, called potlines. The Site operations included offices, warehouses, laboratories, mechanical shops, a paste plant, coal tar pitch tanks, pump houses, a casting garage, and the building that housed the potlines (Roux 2020a).

Prior to the 1950s, a lack of written documentation makes it difficult to determine the level of agricultural or residential activities that occurred in the area. The land the Site currently sits on was originally part of the aboriginal territory occupied by the Selis (Bitterroot Salish), Qlispe (Pend d'Oreilles), and Ksanka Band of the Ktunaxa Nation (Kootenai) Tribes—the three tribes which today comprise the CSKT. The land was ceded by the Tribes to the United States under the Hellgate Treaty of 1855, but the Tribes reserved the right to continue hunting and gathering on open and unclaimed lands, and fishing at all usual and accustomed places within their aboriginal territory. This would include the Flathead River near the site and any USFS lands adjacent or near the site.

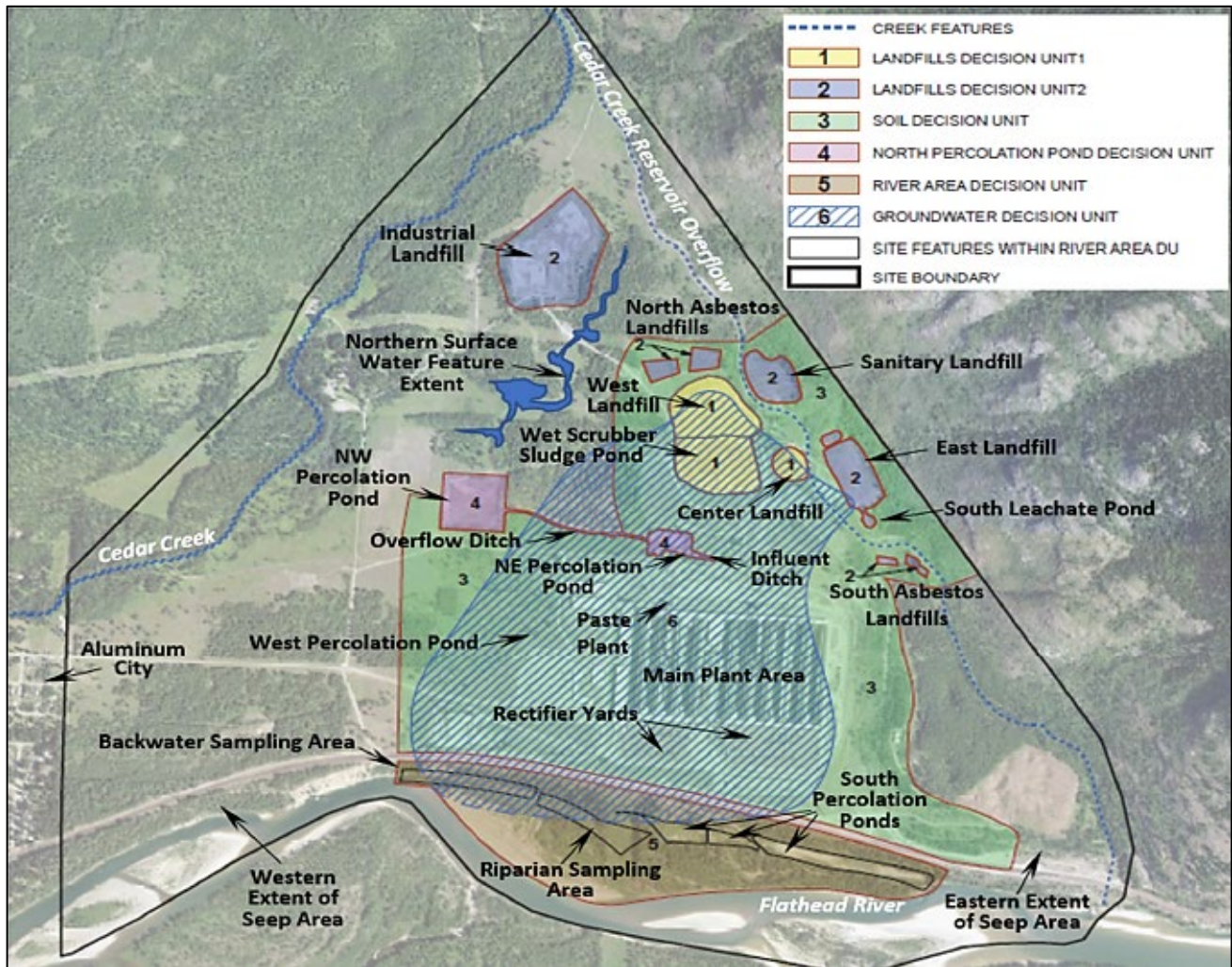
In 1955, the Anaconda Aluminum Company (AAC) acquired the Site and began industrial activity with two potlines, giving the Site an annual capacity of 67,500 tons of aluminum per year (Roux 2015). According to the U.S. Forest Service, AAC officials insisted minimal environmental harm would be caused by the emission of fluorides, but in 1957, the Supervisor of the Flathead National Forest wrote a letter describing an area of dying ponderosa pines in proximity to the reduction plant (Carlson and Dewey 1971). No further research was initiated until an additional three potlines were added sometime before 1968, increasing total aluminum production to 180,000 tons per year (Roux 2015). During this time, the U.S. Forest Service hired Clinton Carlson and Jerald Dewey to determine the cause and extent of vegetation impacts on forested lands near the CFAC property. Their report “Environmental Pollution by Fluorides in Flathead National Forest and Glacier National Park” cites the AAC as the primary cause of injury to vegetation via aerial deposition of fluorides (Carlson and Dewey 1971). In 1970, growing public concern led to local residents filing a class action lawsuit against the AAC. It was dismissed without prejudice in 1973, but not before 600 plaintiffs joined the case, and the AAC invested in environmental controls to reduce fluoride emissions from 10,000 pounds per day to 861 (Tabish 2016). In November 1973, the EPA completed a Field Investigation of Fluoride in Glacier National Park (EPA-908/1-73-001). The EPA investigation found floral necrosis in Columbia Falls, on Teakettle Mountain, and in Glacier National Park (EPA 1973). In May 1977, the USDA requested that the United States Department of Justice (USDOJ) initiate litigation against Anaconda for the emission of fluorides onto the Flathead National Forest (USDA 1977). The letter requesting litigation stated potential recovery between \$2,000,000 and \$80,000,000. In 1978, the Atlantic Richfield Company acquired the Site. In November 1978, the United States filed suit to stop fluoride emissions from the Columbia Falls smelter at harmful levels onto Flathead National Forest and Glacier National Park. (Hanners 2017b). An Amended Complaint was filed in the suit on January 3, 1979, seeking: 1) an injunction against emitting fluorides at levels which result in floral injury or death; 2) damages for diminution in property value as a result of the past pollution; 3) treble damages for loss of timber; and, 4) damages for costs to address fire hazards on the relevant federal lands. The suit was dismissed in August 1980, with a preliminary agreement to settle the dispute via an acre-for-acre land swap (Hanners 2017b and Hanners 2017c). By 1982, the details of the settlement were still being negotiated, with the terms evolving to either a land exchange or a payment of \$75,000. The exact terms of the settlement of the dispute are not known, however, on July 26, 1982, the U.S. Attorney’s Office for the District of Montana received a check for \$75,000 from ARCO labeled “payment in full of the compromise settlement agreement.” Though certain environmental liabilities due to fluoride emissions may have been resolved through this settlement, aerial deposition of other hazardous

substances and resuspension or migration of these hazardous substances may have occurred during operations and may have injured natural resources in the surrounding area.

Then, in 1985, the Montana Aluminum Investor's Corporation purchased the Site. Finally, CFAC acquired the Site in 1999 (Roux 2015). Glencore is CFAC's parent company. *Columbia Falls Aluminum Company, LLC v. Atlantic Richfield Co.* (No. 21-36042, 2023).

Site operations generated several waste products including spent potliner (SPL), described as a layer of "thick carbon bonded to an insulating layer containing fluoride, sodium, aluminum, and small amounts of cyanide" (Roux 2020a). The Site also generated emissions of particulate fluoride, hydrogen fluoride, and PAHs, mainly from the Paste Plant and potlines within the aluminum reduction facility (EPA 1989). Air pollution from aluminum production was initially controlled using wet scrubbers until 1976, and were replaced with dry scrubbers by 1980 (EPA 2025). Sludge produced by the wet scrubbers was disposed of on-Site at the Wet Scrubber Sludge Pond. Operators disposed of solid waste primarily in eight on-Site landfills, seven of which are closed (including two closed leachate ponds) and one of which is still open but has not been used for industrial purposes since 2009 (note that the Industrial Landfill was used in 2021 for on-Site disposal of soil and sediment from the South Percolation Pond removal action) (Roux 2021). Process water from Site operations and stormwater discharges were collected in several percolation ponds that have since closed (Roux 2020a). Currently, there are only two percolation ponds remaining, which are dry.

Figure 1. Map of the CFAC Site (EPA 2023)



This figure shows the facility and the main features, including the six decision units, the EPA-defined site boundary, and the features within the river area decision unit.

Remedial investigations began in the 1970s and preliminary cleanup efforts began in the 1990s. In 1980, Hydrometrics, Inc. conducted an initial evaluation, which was followed by a preliminary Site assessment, conducted by Ecology and Environment, Inc. in 1984. After 4,000 gallons of dielectric fluid were released in the West Rectifier Yard in 1991, Olympus Environmental excavated soil and shipped it to an approved off-Site disposal facility. In 1994, additional remedial efforts took place after an estimated 3-4 gallons of PCBs were released from two capacitors in the West Rectifier Yard.

HISTORY OF DISCHARGE PERMIT VIOLATIONS AT THE SITE

In 1984, the Montana Department of Health and Environmental Sciences (MDHES) issued a permit allowing specific monitored discharges of groundwater, but not groundwater degradation beyond the Site. Under this permit, leachate from the aluminum reduction process was discharged into the Wet Scrubber Sludge Pond five times. In 1994, MDHES issued a Montana Pollutant Discharge Elimination System (MDPES) permit for processed wastewater discharges to specific ponds and groundwater and requiring tracking of cyanide concentrations. However, the Montana Department of Environmental Quality (DEQ) subsequently identified groundwater contamination and elevated cyanide levels in seeps discharging to the Flathead River from the Site, which DEQ classified as unauthorized discharges. In 1996, the U.S. Environmental Protection Agency (EPA) issued a Notice of Violation under the CWA, followed by DEQ's Notice of Violation under the Montana Water Quality Act in 1997. In response, DEQ allowed CFAC to modify its permit to create a "mixing zone" allowing higher cyanide levels in the Flathead River and reissued the permit in 1999. The mixing zone was effectively eliminated in 2014 with another revised MDPES permit. Although CFAC appealed, the permit was terminated in 2019 due to the Site's closure (Trustees 2023). All industrial facilities were decommissioned completely by the third quarter of 2019, but seepage from the Site into the Flathead River continues today (Roux 2020a, Trustees 2023).

In 2013, Weston Solutions, Inc. determined the nature and extent of contamination at the Site on behalf of the EPA Region 8. A total of 68 groundwater, surface water, sediment, and soil samples were used to establish potential source areas as:

- Landfills (including the closed Wet Scrubber Sludge Pond and the closed leachate ponds),
- Former Drum Storage Area,
- Percolation ponds,
- Waste and raw materials storage and handling areas,
- Plant drainage system including drywells and associated discharge points, and
- Underground storage tanks and aboveground storage tanks.

Primary constituents of potential concern were identified as cyanide, fluoride, and PAHs (EHS Support 2018b). Since 2015, CFAC has continued to assess conditions at the Site and plan remedial or cleanup efforts, under the oversight of the EPA, in consultation with DEQ. In November 2015, CFAC signed an administrative order on consent with EPA (EPA 2015). Demolition efforts at the Site were completed in September 2019. In 2020, EPA approved the Remedial Investigation Report (Roux 2020a) and in 2021, EPA approved the Feasibility Study Report. Most recently, EPA issued its proposed plan for cleanup of the CFAC Site in June 2023 (EPA 2023). After the public comment period closed in August 2023, the EPA reviewed public comments and issued a response to comments and a Record of Decision (ROD) in January 2025, documenting the plan for cleanup of the Site.

Key events in the history of the Site are detailed in Table 1, below.

Table 1. Key Events in CFAC's Site History

Year	Category	Event
Prior to 1950s	● Operations	Site is used for agricultural and residential activities.
1950-1978	● Operations	Industrial development begins with purchase of property by Harvey Machine Co. in 1950. Shortly thereafter, the Site is acquired by Anaconda Copper Mining Company and two potlines are constructed in 1955.
Beginning in 1955	● Releases	West Landfill is used to dispose of generated spent potliner (SPL), sanitary, municipal solid waste (MSW), and scrap (steel, wood, strapping, scrap from shops) waste; unlined until an earthen cap is placed in 1981; clay cap placed in 1992, and synthetic cap placed in 1994. Wet Scrubber Sludge Pond is originally used as a landfill (1955-1963), then to dispose of sludge from wet scrubber (until 1976 when wet scrubber is replaced with dry scrubbers that produce less waste); briefly used to dispose of SPL leachate (1994-1998).
1965-68	● Operations ● Releases	Third, fourth, and fifth potlines are added to the Site.
1970	● Releases	Center Landfill used to dispose of SPL, sanitary, and scrap waste; unlined, clay cap.
1970	● Releases	Industrial Landfill used to dispose of scrap metal, wood and MSW; unknown cap and lining.
1973	● Releases	EPA completes a Field Investigation of Fluoride in Glacier National Park, finding floral necrosis in Columbia Falls, on Teakettle Mountain, and in Glacier National Park.
1976	● Operations	Wet scrubbers were used to control air pollution up to this point. ¹
1978-1985	● Operations	Atlantic Richfield Company purchases existing aluminum reduction facility.
1980	● Operations	Center Landfill closed. East Landfill used to dispose of SPL; clay liner, synthetic cap. Dry scrubbers replaced wet scrubbers for air pollution control.
1981	● Operations	Wet Scrubber Sludge Pond capped with an earthen cap and vegetated.
1981	● Releases	Sanitary Landfill used to dispose of MSW and sanitary waste; clay liner, cap type unknown.
1980s	● Releases	Asbestos Northern and Southern Landfill is used to dispose of asbestos; unknown liner and cap.
1984	● Remedy	The Montana Department of Health and Sciences (MDHES) conducts Preliminary Assessment of Site via Ecology and Environment, Inc.
1984	● Operations ● Releases	MDHES issues a permit allowing specific monitored discharges to surface impoundments (and indirectly to groundwater) but prohibiting degradation of groundwater beyond the property boundary.
1985-1999	● Operations	Montana Aluminum Investor's Corporation purchases existing aluminum reduction facility.
1990	● Operations	East Landfill closed and capped with synthetic cap. South Leachate Pond drained to Wet Scrubber Sludge Pond. SPL disposal now off-site.
1991-92	● Releases ● Remedy	Transformer fire released an estimated 4,000 gallons of dielectric fluid on September 10, 1991. Remediation completed by Olympus Environmental who excavated soil in West Rectifier Yard and shipped to approved off-Site disposal facility.
1991	● Releases	MDHES issues a violation letter to Columbia Falls Aluminum Company for unauthorized discharge of cyanide in seeps to the Flathead River.
1993	● Operations	South Leachate Pond closed, dried, and capped.
1994	● Releases ● Remedy	Three to four gallons of PCBs spill from explosion of two capacitors in the West Rectifier Yard. Contaminated soil is removed and disposed of off-Site, and equipment is cleaned.
1994	● Operations ● Releases	MDHES issues a MPDES permit for processed wastewater discharges to specific ponds and groundwater and required tracking of cyanide concentrations.

Year	Category	Event
1994	● Operations	West Landfill capped with a synthetic cap. North Leachate Pond closed and drained to Wet Scrubber Sludge Pond.
1996	● Releases	EPA issues a Notice of Violation under the CWA after elevated cyanide concentrations were found in Site groundwater and seeps.
1997	● Releases	DEQ issues a Notice of Violation under the Montana Water Quality Act after finding elevated cyanide concentrations in Site groundwater and seeps.
1998	● Operations	Wet Scrubber Sludge Pond material removed and disposed of off-site.
1999	● Operations	DEQ reissues the MPDES permit, modified to create a mixing zone that allowed higher cyanide concentrations in the Flathead River.
1999-present	● Operations	CFAC purchases existing aluminum reduction facility.
2009	● Operations	Aluminum production suspended.
2001	● Remedy	EPA and DEQ perform a Waste Characterization Investigation where samples were collected.
2014	● Remedy	EPA Site Reassessment completed by Weston Solutions, Inc.
2014	● Operations	DEQ issues a revised MPDES permit, eliminating the mixing zone. CFAC appeals this permit, but the permit is terminated in 2019 with closure of the Site.
2015	● Remedy	EPA and CFAC agree to conduct a Remedial Investigation/Feasibility Study (RI/FS).
2015	● Operations	CFAC permanently closes the facility.
2016	● Remedy	EPA adds Site to National Priorities List.
2019	● Operations	Decommissioning of industrial facilities complete.
2020	● Remedy	CFAC completes the Remedial Investigation and submits the report to EPA.
2021	● Remedy	CFAC completes removal action agreed to with EPA to remove sediments from the South Percolation Ponds and returns the flow of the Flathead River to its northern channel.
2021	● Remedy	CFAC completes the Feasibility Study and submits the report to EPA.
2023	● Liability	Ninth Circuit upholds the CERCLA liability apportionment between Columbia Falls Aluminum Company and Atlantic Richfield Company in the case <i>Columbia Falls Aluminum Company, LLC v. Atlantic Richfield Co.</i> (No. 21-36042, 2023).
2023	● Remedy	EPA issues a Proposed Plan for the remedy for the Site.
2025	● Remedy	EPA issues a Record of Decision (ROD), documenting the cleanup plan for the Site.

Sources: Roux 2015; Roux 2020a; Roux. 2020b; EHS Support 2018b; CFAC 2021; MDHES 1984; MDHES 1991; MDHES 1994; DEQ 1999; DEQ 2014a; EPA 1973; EPA 2023; EPA 2025. Hanners 2017a.

¹ The remedial documents report a range of dates for the transition of wet scrubbers to dry scrubbers. The dates reported in this table reflect the description in the ROD (EPA 2025). However, the RI/FS work plan and RI describe a transition between 1976 and 1978 for the electrolytic reduction process (Roux 2015, 2020a). The Paste Plant utilized a wet scrubber for air emissions from 1955 to 1999.

● Operations: Events related to land use, ownership, and operations. ● Releases: Known releases of hazardous substances.

● Remedy: Sampling and cleanup related to remedial investigation efforts.

1.3 Overview of Natural Resource Damage Assessment and Restoration

The CERCLA NRDAR regulations at 43 C.F.R. Part 11 outline two processes by which natural resource trustees may conduct a NRDAR: Type A and Type B assessments. Type A assessments utilize a standardized methodology based on inputs such as the mass or volume of the substance released, the duration of the release, the location of the release, and environmental conditions. These assessments are generally limited by the regulations to the evaluation of relatively minor hazardous releases in coastal and marine environments. Whereas, Type B assessments are conducted through the review of existing data and/or the collection of additional data to address information gaps. Type B assessments are typically selected when a hazardous substance release occurs over a long timeframe, consists of multiple contaminants, or occurs in a complex system that cannot be simplified. These assessments allow for a wider range of scientific and economic methodologies to address data gaps.

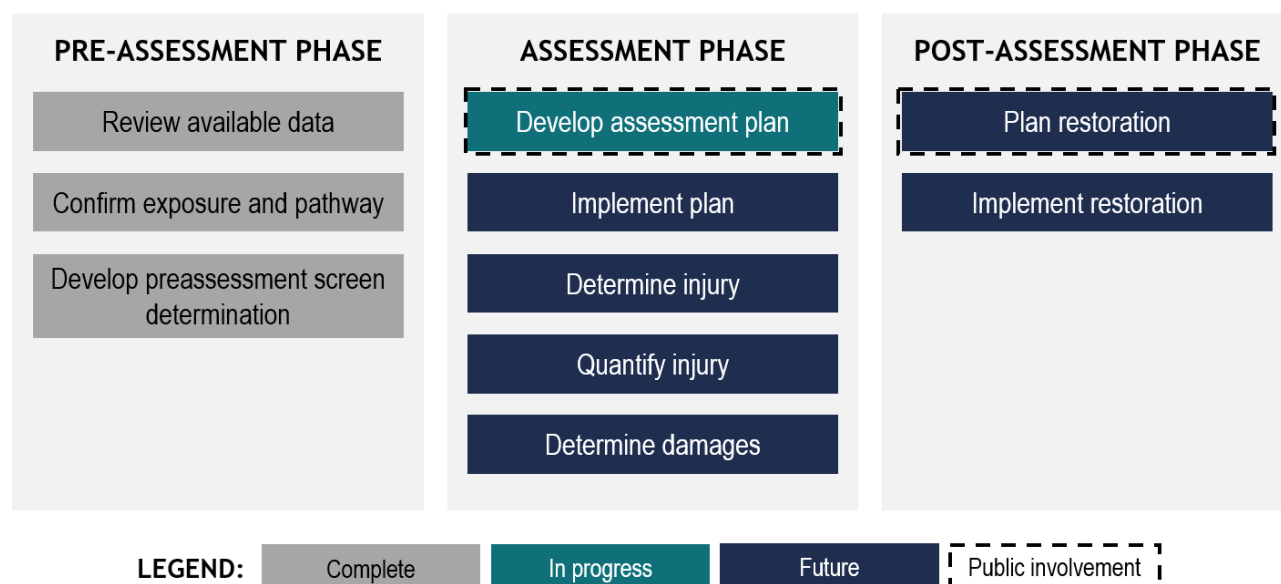
The Trustees have determined that damages from the release of hazardous substances are likely to exceed \$100,000 and are not encompassed within the geographic scope of the NRDAM/CME or NRDAM/GLE models. Therefore, the Trustees intend to conduct a Type B assessment. The Type B process includes the following three phases: pre-assessment, assessment, and post-assessment (Figure 2). Public engagement is an important part of implementing a NRDAR, and occurs throughout the process, as illustrated in Figure 2 and described in the text below. Public participation in this Plan is further detailed in Section 1.5. Consistent with 43 C.F.R. § 11.31(c)(4), the Trustees have not included a Restoration and Compensation Determination Plan (RCDP) in this Plan, but may develop an RCDP as part of the assessment or post-assessment process, as warranted.²

CONFIRMATION OF EXPOSURE

The CERCLA NRDAR regulations stipulate that, as part of an Assessment Plan under the Type B procedures, trustees must confirm that at least one of the natural resources identified as likely adversely affected in the Preassessment Screen has in fact been exposed to the released substance (43 C.F.R. § 11.37(a)). In this case, the 2022 Preassessment Screen went above and beyond identifying likely adversely affected resources and releases of hazardous substances at concentrations sufficient to potentially cause injury and in fact documented pathways, exposure, and, in some cases, injury of natural resources. This included documentation of surface water and groundwater injury based on exceedance of DEQ-7 numeric water quality standards. It also confirmed exposure and the likelihood of injury to soil, sediment, and aquatic habitat-associated biological resources, including birds, through the evaluation of surface water, groundwater, sediment, and soil contaminant concentrations. Specific hazardous substances highlighted as being injurious within the Assessment Area included arsenic, cyanide, fluoride, PAHs, and PCBs (Trustees 2023). Therefore, natural resources within the Assessment Area have been documented to have been exposed and injured. Nevertheless, formal determination of injury will be undertaken as part of the NRDAR (see Chapter 3).

² An RCDP is developed as a part of NRDAR activities, and it serves to identify possible alternatives for restoring, rehabilitating, replacing, or acquiring the equivalent of injured resources. RCDPs are subject to public review and comment, and the findings and recommendations presented in an RCDP are ultimately used to develop a restoration plan consistent with CERCLA requirements.

Figure 2. Phases of a Type B Natural Resource Damage Assessment



1.3.1 Pre-Assessment Phase

During the Pre-Assessment Phase, which was completed in October 2023, the Trustees reviewed readily available information and existing data related to releases of hazardous substances and the potential impacts of those substances on natural resources. The review led to the Trustees' determination that there is sufficient evidence to support claims for natural resource damages against parties responsible for releasing the hazardous substances to the environment. Documentation of the Trustees' determination that further assessments are warranted (i.e., that a NRDAR could and should be performed) was published in the Preassessment Screen (PAS; Trustees 2023). This phase is a prerequisite to conducting a formal assessment pursuant to 43 C.F.R. § 11.23(a).

1.3.2 Assessment Phase

In the assessment phase, the Trustees continue their review of readily available information and existing data to identify the activities necessary to determine and quantify natural resource injuries and determine associated damages. These activities are documented in an Assessment Plan (this Plan), which is developed and implemented as the first step in this phase of the NRDAR. The purpose of an Assessment Plan is to ensure that the assessment is performed in a planned and systematic manner and the proposed assessment activities can be conducted at a reasonable cost (43 C.F.R. § 11.30(b)).

After the Assessment Plan has been finalized, subsequent steps of the Assessment Phase include:

- **Injury determination**, which encompasses documentation that natural resource injuries have occurred.
- **Injury quantification**, wherein the magnitude of injuries and service losses are quantified.
- **Damages determination**, which involves monetizing quantified injuries, most often through the identification, scaling, and costing of relevant restoration projects.

There are several opportunities for public engagement during the Assessment Phase. The first was with the release of the Draft Plan for public review and comment. Secondly, during the damages determination step, or subsequent restoration planning, the Trustees may solicit restoration project ideas from the public to identify relevant projects that are priorities for the community(ies) impacted by the contamination from the Site. These

project ideas would then be compared to Trustee-specific screening and evaluation criteria and NRDAR factors (43 C.F.R. § 11.82(d)) before the Trustees select any projects for implementation.

In addition to soliciting restoration ideas from the public during damages determination, the Trustees may identify early restoration opportunities—that is, opportunities to begin a restoration project before the assessment has proceeded completely through all the NRDAR phases. Early restoration undertaken or funded by a potentially responsible party (PRP; see Section 1.4) may result in settlement of some or all of the PRP’s natural resource damage liability but not fully resolve all liability, or it may generate a credit towards future settlement of natural resource damage liability. Since these opportunities may be short-lived in duration, or there may be a benefit to earlier implementation (e.g., restoration of natural resources earlier than may otherwise be achieved), the Trustees may agree to pursue early restoration. To allow for such opportunities, the Trustees may engage in early restoration planning as part of the Assessment Phase. Early restoration planning can include the development of a programmatic or specific Restoration Plan or components of the RCDP that describe Trustee priorities regarding identification and selection of projects. This could include efforts to estimate restoration credits for early restoration projects and identify offsets against future quantification of natural resource damages. Restoration Plans and RCDPs are also released for public review and comment.

1.3.3 Post-Assessment Phase

The Post-assessment Phase involves implementation of restoration and has a reporting component. If not completed sooner, the RCDP, if necessary, may be completed during the Post-assessment Phase. The RCDP will undergo public review and comment at that time. The Post-assessment Phase may also include a Report of Assessment and project-specific Restoration Plan(s) if the assessment proceeds to that stage. The former describes the results of the Assessment Phase and includes all the documentation supporting determinations made in the Pre-Assessment and Assessment Phases (e.g., the PAS; the Final Assessment Plan and documentation used in the Injury Determination, Quantification, and Damage Determination phases; and the RCDP and/or project-specific Restoration Plan(s)).

1.3.4 Remediation versus Natural Resource Damage Assessment and Restoration

NRDAR is a process that occurs *in addition to* the remedial process (i.e., hazardous substance cleanup) conducted by regulatory agencies such as EPA, in consultation with DEQ. These two processes have different goals. Remedial action objectives are risk-based and developed to protect

BASELINE IN NRDAR

In the context of NRDAR, baseline is defined as the “condition or conditions that would have existed at the Assessment Area had the discharge of oil or release of the hazardous substance under investigation not occurred” (43 C.F.R. § 11.14(e)). Consideration of baseline in the NRDAR will account for the affected natural resources and the level of services that they would have provided in the absence of hazardous substance releases from the Site. In many cases, low concentrations of contaminants of concern are present in the environment even absent a release of hazardous substances, because they either occur naturally in the environment or are ubiquitous due to a combination of anthropogenic activities and environmental processes that can distribute contaminants across regions.

human health and the environment from unacceptable risk. Remedies are selected based on evaluation criteria that are used to compare remedial alternatives and may result in contamination remaining in the environment above levels that existed prior to its release. In contrast, the goal of NRDAR is to restore injured resources to their baseline condition. Losses resulting from natural resource exposure to hazardous substances are estimated over time, including past losses and, if post-remedy contaminant concentrations remain at levels sufficient to cause injury to natural resources, future losses.

However, there are components of NRDAR and remediation that overlap. For example, NRD-related restoration must account for remedial responses that are underway or planned. That is, the extent to which remediation returns natural resources and the services they provide to their baseline condition should be considered in the NRDAR process. For example, work to remedy a site may partially or completely restore injured natural resources (but this does not compensate for interim losses). In addition, remedial actions may injure natural resources (e.g., physical disturbance or destruction of habitat), and assessment and restoration of this remediation-induced injury is also evaluated and compensated for within the NRDAR process.

The ROD was issued in January 2025 and memorializes the selected remedy for the Site, which was divided into six decision units (DUs) to address specific media and areas (EPA 2025). In general, the remedy adopts a strategy of consolidating and encapsulating contaminant sources to eliminate surface exposure pathways, reduce contaminants reaching groundwater, and bring contaminant concentrations discharging at seeps near the Flathead River into compliance with standards that are protective of ecological receptors. The selected alternatives are as follows:

- **Landfills DU1/Groundwater DU6/River Area DU5:** Containment via capping, fully encompassing slurry wall, interior extraction, and monitoring.
- **Landfills DU2:** Containment via capping.
- **Soils DU3:** Excavation with on-site consolidation.
- **North Percolation Ponds DU4:** Excavation with on-site consolidation.

Institutional controls, identified during remedial design, will also be used and EPA expects that these will ensure that engineered elements of the remedy are not damaged; prevent the use of groundwater that poses human or ecological risks; limit access to private property; and allow low-intensity open space/recreational use or industrial/commercial use as permitted by the landowner (EPA 2025).

1.4 Cooperation with Responsible Parties

The CERCLA NRDAR regulations at 43 C.F.R. § 11.32(a)(2)(ii) direct trustees to “use reasonable efforts to proceed against most known potentially responsible parties” or PRPs. 43 C.F.R. § 11.32(a)(2)(iii)(A) requires trustees to send a Notice of Intent to Perform a NRDAR (NOI) to all identified PRPs, which invites the PRPs to participate in the assessment and restoration process. The Trustees sent a notice of intent to perform a natural resource damage assessment, pursuant to 43 C.F.R. § 11.32, in January 2024, to the identified PRPs. The PRPs declined to participate.

PRPs identified to-date, as documented in the PAS (Trustees 2023), include:

- CFAC, and
- Atlantic Richfield Company.

1.5 Public Participation

Public participation and review are an integral part of the assessment planning process and are required by the CERCLA NRDAR regulations (e.g., 43 C.F.R. § 11.32(c)). To facilitate public involvement in the NRDAR planning process, the Trustees encouraged the public to review and comment on the Draft Plan. Following comment submittal by the public, the Trustees reviewed the public comments received. Public comments and the Trustees’ responses to those comments are summarized in Appendix B to this Plan.

On behalf of the Trustees, NRDP advertised the public comment period in the Missoulian and Hungry Horse News and on NRDP’s website and sent it to NRDP’s mailing list. The initial review period was for 30 days (in accordance with 43 C.F.R. § 11.32(c)(1)) from the date of public release of the Draft Plan. The public comment

period was open initially from May 21 to June 23, 2025, with an extension request granted through July 23, 2025. The Draft Plan was available on NRDP's website at: [NRDP Notices – Montana Department of Justice](#). In addition, copies of the Draft Plan were available at NRDP's office.

As the Trustees move forward with the NRDAR, there will be additional opportunities for public participation. Examples (described further in Section 1.3) include reviewing any significant changes to the Plan, any restoration plans, and proposed settlements. The Trustees will make any significant modification available for public review for at least 30 days before any tasks in the modification begin.

1.5.1 Administrative Record

Pursuant to 43 C.F.R. § 11.91(c), the Trustees are compiling information relied upon to plan and conduct the assessment, including information relied upon to prepare this Plan, in a publicly available Administrative Record. The Administrative Record is available upon request.

1.6 Assessment Timeline

The Trustees do not have a firm timeline for the completion of the NRDAR process. As called for in the CERCLA NRDAR regulations, the Trustees intend, where possible, to coordinate the assessment with the remedial processes, ensuring any changes in natural resources and their services due to implementation of remedial actions within the Assessment Area are appropriately considered in the NRDAR. The timeline of the assessment will also be adjusted to accommodate public participation and environmental conditions, if relevant (e.g., assessment of resources, including any field studies, which may be limited by weather, seasons, and/or other factors).

1.7 Geographic and Temporal Scope of the Assessment

The Assessment Area is defined in the CERCLA NRDAR regulations as: "... the area or areas within which natural resources have been affected directly or indirectly by the discharge of oil or release of a hazardous substance and that serves as the geographic basis for the injury assessment" (43 C.F.R. § 11.14(c)). In this case, the geographic scope of this assessment encompasses the 1,340 acres of the CFAC Site, as well as any areas surrounding, downstream, or downgradient of the Site that may have been contaminated by Site releases. A map of the EPA-defined Site and preliminary Assessment Area is presented in Figure 1, above. As the assessment proceeds, the Trustees reserve the right to expand or further constrain its geographic scope.

The temporal scope of this assessment is based on the duration of injury to natural resources and corresponding damages. Due to the industrial history of the Site, natural resources likely have been exposed to and injured by hazardous substance releases since at least the early 1950s. The re-release and remobilization of contamination and associated injuries are expected to continue into the future. The NRDAR will therefore consider the full scope of these injuries.

However, in accordance with the promulgation of CERCLA in December of 1980, when injuries pre- and post-CERCLA are distinguishable, damages will be calculated based on injuries and service losses occurring after the enactment of CERCLA. When injuries are indistinguishable prior to and after the enactment of CERCLA, damages will be calculated beginning at the start of injury. Damages calculations will include losses through the reasonable expected recovery of the injured natural resources and their services. Therefore, emphasis will be placed on information regarding natural resource injuries and service losses beginning in 1981 and into the future. The rate of recovery will be based on the best available information regarding proposed or implemented remedial and restoration activities, natural attenuation, and expected resource recoverability. If a resource is not expected to fully recover, the injuries will be considered permanent.

1.8 Hazardous Substances in the Assessment Area

Contaminants of concern documented in the PAS (Trustees 2023) are listed below in Table 2.

Table 2. Contaminants of Concern from the PAS (Trustees 2023)

Inorganic compounds	Organic compounds
Cyanide	Bis(2-ethylhexyl)phthalate (BEHP)
Fluoride	PAHs
Arsenic	PCBs (Aroclor 1254)
Aluminum	
Barium	
Cadmium	
Copper	
Iron	
Manganese	
Nickel	
Selenium	
Thallium	
Vanadium	
Zinc	

In addition to these contaminants of concern, per- and polyfluoroalkyl substances (PFAS) are a growing concern in Montana and nationwide. At present, PFAS have not been identified as contaminants of concern at the Site. While aluminum smelting is not typically associated with PFAS use, some industrial coatings, lubricants, surfactants, and aqueous film-forming foams (AFFF) may contain PFAS compounds. Based on public comment and recognition that several fires have occurred at the Site, the Trustees are including PFAS as a potential contaminant of concern. Should evidence of PFAS releases be identified during the assessment, the Trustees will evaluate potential exposure and injury consistent with 43 C.F.R. Part 11 (the CERCLA NRDAR Regulations).

When implementing the assessment (as described in Chapter 6), the Trustees may further refine or expand the list of contaminants of concern for purposes of the NRDAR based on information reviewed and/or analyses performed.

1.9 Plan Organization

The remainder of this Plan is organized as follows:

- **Chapter 2 – Natural Resources and Resource Services:** This chapter provides an overview of the natural resources within the Assessment Area, including the geographic scope and a summary of natural resources and the services they provide.
- **Chapter 3 – Injury Determination:** This chapter outlines the potential pathways of hazardous substances released from operations at the Site to natural resources (11 C.F.R. § 11.63), describes information demonstrating injury to natural resources (11 C.F.R. § 11.63), and provides an overview of the Trustees' approach to determining injury as a result of these releases. The guidance provided in 43 C.F.R. § 11.64 will be followed for selecting methodologies for the Injury Determination phase.
- **Chapter 4 – Injury Quantification:** This chapter discusses the framework for quantifying injury to natural resources and the services they provide (accounting for baseline). The Quantification phase

consists of service reduction quantification (43 C.F.R. §11.71); baseline services determination (43 C.F.R. §11.72); and resource recoverability analysis (43 C.F.R. §11.73).

- **Chapter 5 – Damages Determination and Restoration:** This chapter describes the Trustees’ proposed approach to determining the damages required to compensate for the quantified losses and planning restoration pursuant to 43 C.F.R. §§ 11.81-11.84.
- **Chapter 6 – Proposed Assessment Activities:** This chapter outlines the assessment activities that the Trustees have determined to be potentially necessary to identify and quantify injuries to natural resources and resource services for the overall NRDAR.
- **Appendix A – Quality Management Plan** (consistent with 43 C.F.R. § 11.31(c)(2)): This appendix provides the Trustees’ Quality Management Plan, documenting the Trustees’ Quality Systems and how they will plan, implement, and assess their Quality Systems for NRDAR data analysis and/or data collection.

CHAPTER 2 | Natural Resources and Resource Services

This chapter provides information on the natural resources present within the Assessment Area and the types of services those natural resources provide, which will be the focus of the NRDAR.

2.1 Natural Resources

Under the CERCLA NRDAR regulations, natural resources include the “land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States...any State or local governments, any foreign government, any Indian tribes...[or] any member of an Indian tribe” (43 C.F.R. § 11.14(z)). CECRA includes a similar definition, “Natural resources” means land, fish, wildlife, biota, air, surface water, ground water, drinking water supplies, and any other resources within the state of Montana owned, managed, held in trust, or otherwise controlled by or appertaining to the state of Montana or a political subdivision of the state.” § 75-10-701(12), MCA. CERCLA organizes these resources into five categories: surface water (including sediments), groundwater, air, geological (including soil), and biological resources.

The Trustees intend to focus assessment efforts on groundwater, surface water, geological, and biological resources in the Assessment Area. At this time, the Trustees do not plan on quantifying distinct injuries to air resources. However, the Trustees intend to evaluate resource injuries resulting from the deposition of hazardous substances via various pathways within the Assessment Area, including through the air, as opposed to quantifying volumes of injured air. Therefore, air monitoring data may be considered in the context of pathway and/or background evaluations.

2.1.1 Surface Water (and Sediment) Resources

Surface water resources are defined in the CERCLA NRDAR regulations as:

The waters of the United States, including the sediments suspended in water or lying on the bank, bed, or shoreline and sediments in or transported through coastal and marine areas (43 C.F.R. § 11.14(pp)).

The State of Montana defines “State waters” to include surface waters, “...a body of water, irrigation system, or drainage system, either surface or underground.” It excludes ponds or lagoons used solely for treating, transporting, or impounding pollutants; or irrigation waters or land application disposal waters when the waters are used up within the irrigation or land application disposal system and the waters are not returned to state waters.” § 75-5-103(32), MCA. Surface water resources in the Assessment Area include waters flowing through the Site, perennially inundated habitats, the Flathead River and riparian area, Cedar Creek, and the intermittent Cedar Creek Reservoir Overflow Ditch (EHS Support 2018a). Although not included in past remedial investigation reports, USFWS’ National Wetlands Inventory (NWI) identifies two additional wetlands outside of the riparian area associated with the Flathead River on the Site, as seen below in Figure 3. Both are classified as “PSS1A,” meaning the area is palustrine (nontidal wetland dominated by trees, shrubs, persistent emergent; or wetlands without vegetation with water depth in the deepest part of the basin less than 2.5 meters at low water), dominated by woody vegetation less than six meters tall, broad-leaved deciduous, and temporarily flooded during the growing season. Both areas are in the northwest of the Site, with one covering 18.4 acres, and the other covering just over one acre. The NWI also classifies the “Riparian Sampling Area” seen in Figure 1 into separate categories based on vegetation: herbaceous riparian, forested/shrub wetland, or freshwater pond (see Figure 3; NWI 2019).

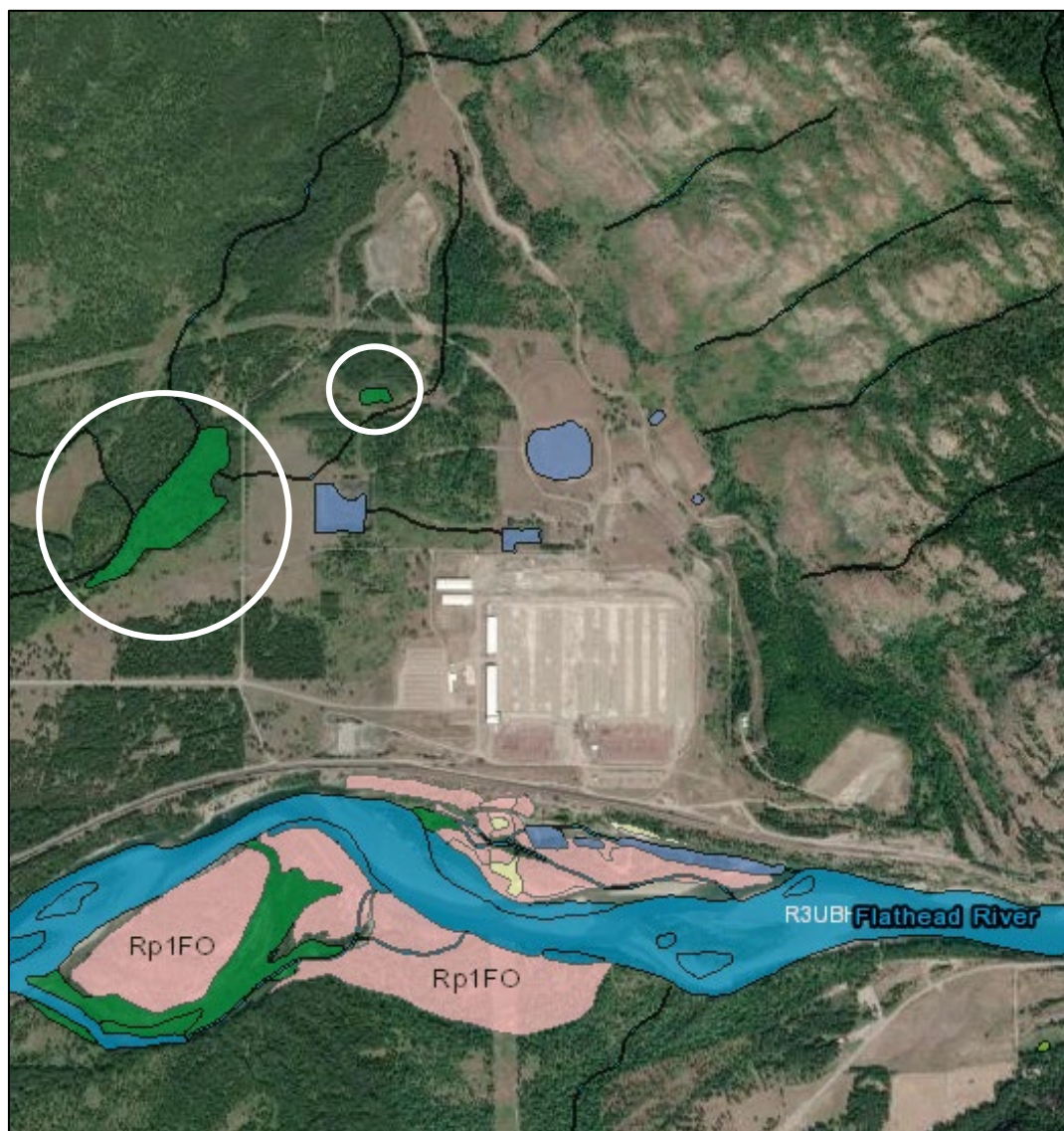
The Flathead River, known by the CSKT as Ntx^we(tk^w), meaning “River”, is a tributary to the Columbia River that flows into the Pacific Ocean. The Flathead River runs along the southern border of the Site and flows westward from Badrock Canyon, past the Site to the City of Columbia Falls, and then south toward Flathead Lake. The State of Montana classifies the part of the Flathead River that borders the Site, as well as all of the water bodies in the drainage as class “B-1,” meaning that they should be maintained suitable for “drinking, culinary, and food processing purposes after conventional treatment; bathing, swimming, and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl, and furbearers; and agricultural and industrial water supply” (Administrative Rules of Montana [ARM] 17.30.608(1)(a)), 17.30.623).

At the Site, the drainage area of the Flathead River is approximately 4,470 square miles, which includes the drainage area of Cedar Creek to the west (EHS Support 2018a). Cedar Creek begins north of the Site, near the Cedar Creek Reservoir, and flows along the western Site boundary towards the City of Columbia Falls. The creek’s elevation is higher than the groundwater levels at the Site, indicating it is a losing stream under normal flow conditions (Roux 2020a).

According to the USGS National Hydrography Dataset, a tributary to Cedar Creek bisects the northern area of the Site along the eastern side of the Industrial Landfill. Although not observed during Site reconnaissance, this feature was mapped by Roux field personnel as the Northern Surface Water Feature because of its wetland vegetation. Water ponding has also been observed as a result of runoff from a nearby cliff (EHS Support 2018a).

The Cedar Creek Reservoir Overflow Drainage (referred to as the “Cedar Creek Reservoir Overflow Ditch” in Roux 2020b) flows intermittently in spring and helps regulate the flow of Cedar Creek and its reservoir. Surface water runoff from the Sanitary Landfill, the Center Landfill, the southern Asbestos Landfill, and the East Landfill and associated leachate ponds collect in this area before discharging into the Flathead River (Roux 2020a). The catchment area for the Cedar Creek Reservoir Overflow is approximately 2.0 square miles, with about 20 percent of that area located on-Site, extending to Teakettle Mountain’s peak to the east. Similar to Cedar Creek, the Overflow Ditch has been reported to be a losing stream (EHS Support 2018a).

Figure 3. Classified Wetlands at the Site according to the National Wetlands Inventory



The white circles indicate the identified wetlands.

2.1.2 Groundwater Resources

Groundwater resources are defined in the CERCLA NRDAR regulations as:

Water in a saturated zone or stratum beneath the surface of land or water and the rocks or sediments through which ground water moves. It includes ground water resources that meet the definition of drinking water supplies (43 C.F.R. § 11.14(t)).

The State of Montana's Ground Water Management regulations define groundwater as:

Any water that is beneath the ground surface (§ 85-2-501, MCA).

Groundwater elevations measured in monitoring well clusters reveal two water-bearing zones: an upper hydrogeologic unit and a deeper zone, with remedial investigations finding limited (if any) hydraulic connectivity between the two (EHS Support 2018a). The elevation of groundwater flow in the upper hydrogeologic unit varies from a minimum of approximately 14 feet below ground surface to a maximum of approximately 126 feet below ground surface and generally moves in a south-southwest direction towards the Flathead River (Roux 2015). This southerly flow is consistent, but the hydraulic gradient varies across three distinct areas. Near Teakettle Mountain and the landfills, the gradient is steep, at approximately 0.059 ft/ft, reflecting the area's topography. In the center of the Site, near the North Percolation Ponds and the northern half of the Main Plant Area, groundwater elevations remain consistent over long distances—typically within 1 foot over more than 1,000 feet—resulting in a relatively flat gradient of about 0.0045 ft/ft. In the southern area between the Main Plant Area and the Flathead River, the gradient increases to approximately 0.031 ft/ft, aligning with the steeper topography in that area. Overall, these gradients, along with the elevations measured in the Flathead River, suggest that groundwater in the upper hydrogeologic unit discharges into the river (EHS Support 2018a). The groundwater elevation measured in wells from the upper hydrogeologic unit and the deeper zone usually differed by more than 25 feet, and in some instances, the difference exceeded 50 feet (Roux 2020a). This significant disparity suggests that there is limited connectivity between the two zones. Therefore, the deeper water bearing zone spans from 25 ft below the upper hydrogeologic unit to the top of bedrock, which varies from 150 feet below ground surface to 300 feet below ground surface (Roux 2015).

Groundwater in the vicinity of the Site is identified as Class I, with a specific conductance of less than 1,000 $\mu\text{S}/\text{cm}$ at 20 °C, so is thus considered “suitable for public and private water supplies, food processing, irrigation, drinking water for livestock and wildlife, and commercial and industrial purposes, with little or no treatment required” (Montana State Library Natural Resource Information System 2024). During prior assessments of the Site, 52 new monitoring wells (44 in Phase I and 8 in Phase II) monitoring wells were added to the existing 20 monitoring wells that were installed to evaluate groundwater quality in potential source areas (EPA 2025).

2.1.3 Geologic Resources

Geologic resources are defined in CERCLA NRDAR regulations as:

Those elements of the Earth's crust such as soils, sediments, rocks, and minerals, including petroleum and natural gas, that are not included in the definitions of ground and surface water resources (43 C.F.R. § 11.14(s)).

Within the larger Northern Rocky Mountain Physiographic Province, the Site is located within the northeast section of the Kalispell Valley. This valley was formed by late Paleocene to Eocene folding and thrust faulting combined with the middle Wisconsin Cordilleran and Alpine Glaciation. Receding glaciers formed features in the valley including the Flathead River. On the east border of the Site, Teakettle Mountain is comprised of primarily Precambrian sedimentary strata of the Ravalli Group. The stratigraphy beneath the Site varies locally because of the diverse characteristics of glacial and alluvial deposits. Previous studies indicate that the region

near Columbia Falls is primarily composed of glacial till and lake sediments left by the Cordilleran Ice Sheet. Additionally, many valleys in western Montana feature glacial deposits from smaller, local glaciers, resulting in a mix of clay, sand, silt, cobbles, and boulders. Close to the Flathead River, alluvial deposits overlay the glacial stratigraphy. Estimated bedrock depth varies from 150 feet to greater than 300 feet across most of the Site (EHS Support 2018a).

The Site has three major stratigraphic units: glaciofluvial and alluvial deposits, Pleistocene glacial till, and Precambrian bedrock. The upper hydrogeologic unit is found in the glaciofluvial and alluvial deposit layer, characterized by its coarse-grained soils. These deposits form a heterogeneous layer with varying porosity and permeability, featuring lenses of high-porosity sand and gravel that can range from a few feet to over a hundred feet thick (Roux 2020a). Below it, the glacial tills contain a higher percentage of fines that are denser and drier than the layer above but hold the deeper water bearing zone (EHS Support 2018a). Beneath the glacial till lies the Precambrian bedrock, which is tightly compacted, low in porosity, and low in permeability, typically containing little groundwater except in fractures. The western flank of Teakettle Mountain exposes this bedrock, with depth to bedrock increasing southwesterly from the mountain, although most Site borings did not reach it. Available data suggest the depth to bedrock near the Flathead River is likely over 300 feet (Roux 2020a).

2.1.4 Biological Resources

Biological resources are defined in the CERCLA NRDAR regulations as:

Those natural resources referred to in section 101(16) of CERCLA as fish and wildlife and other biota. Fish and wildlife include marine and freshwater aquatic and terrestrial species; game, nongame, and commercial species; and threatened, endangered, and State sensitive species. Other biota encompass shellfish, terrestrial and aquatic plants, and other living organisms not otherwise listed in this definition (43 C.F.R. § 11.14(f)).

The Site contains aquatic, terrestrial, and transitional habitats. Aquatic habitats are characterized by perennial or near-perennial water inundation that support aquatic species. Most of the river side seep areas that receive cyanide groundwater are wet all year (e.g. the backwater seep mixing zone). The two lotic habitats on the Site, which support fish and semi-aquatic mammals or birds, are the Flathead River and Cedar Creek. The Flathead River provides critical year-round subadult residential/juvenile rearing and cold water refugia fish habitat (Isaak and Young 2023), and serves as the only migration corridor to spawning tributaries for Bull Trout (Muhlfeld et al. 2003; Muhlfeld and Marotz 2005). The Flathead River is considered oligotrophic due to the lack of non-anthropogenic nutrient sources, but does receive numerous pollutants from impaired tributary streams due to sewage, domestic development of groundwater wells, septic, and numerous leach fields (DEQ 2014). Cedar Creek is also typically oligotrophic and characterized by high flows in spring and early summer due to snowmelt. Terrestrial habitats are dry, upland areas that support various flora and fauna and are defined by their vadose (shallow unsaturated) zone soils. The Site has four primary terrestrial habitats: mixed conifer forest, riparian forest, deciduous shrubland, and open grassland, each distinguished by its vegetation type. Transitional habitats experience intermittent or seasonal water inundation and can support aquatic species during certain life stages (e.g., benthic invertebrates, juvenile amphibians, juvenile and adult fish, migratory and breeding birds) as well as terrestrial species during dry periods (e.g., soil invertebrates, plants) (Roux 2020a).

In Flathead County, according to the USFWS Environmental Conservation Online System (ECOS), their Information for Planning and Consultation (IPaC) tool, and Montana Fish, Wildlife, and Parks (FWP), there are 11 threatened, endangered, or proposed species (Table 3); 82 species of concern (Table 4); and 9 migratory bird species of concern (Table 5), which could utilize Site habitats (e.g., nesting feeding in prey items) or transit the area.

Table 3. Threatened, Endangered, or Proposed Species according to ECOS

Species Type	Species Name	Species Status
Bird	Yellow-billed Cuckoo (<i>Coccyzus americanus</i>)	Threatened
Conifers and Cycads	Whitebark Pine (<i>Pinus albicaulis</i>)	Candidate
Fishes	Bull Trout (<i>Salvelinus confluentus</i>)	Threatened
Flowering Plants	Spalding's Catchfly (<i>Silene spaldingii</i>)	Threatened
Insects	Meltwater Lednian Stonefly (<i>Lednia tumana</i>)	Threatened
Insects	Monarch Butterfly (<i>Danaus plexippus</i>)	Proposed Threatened
Insects	Suckley's Cuckoo Bumblebee (<i>Bombus suckleyi</i>)	Proposed Endangered
Insects	Western Glacier Stonefly (<i>Zapada glacier</i>)	Threatened
Mammals	Grizzly Bear (<i>Ursus arctos horribilis</i>)	Threatened
Mammals	Canada Lynx (<i>Lynx canadensis</i>)	Threatened
Mammals	North American Wolverine (<i>Gulo gulo luscus</i>)	Threatened

Table 4. Species of Concern in Flathead County according to FWP

Species Type	Species Scientific Name	Species Common Name
Mammals (Mammalia)	<i>Corynorhinus townsendii</i>	Townsend's Big-eared Bat
Mammals (Mammalia)	<i>Gulo gulo</i>	Wolverine
Mammals (Mammalia)	<i>Lasionycteris noctivagans</i>	Silver-haired Bat
Mammals (Mammalia)	<i>Lasiurus cinereus</i>	Northern Hoary Bat
Mammals (Mammalia)	<i>Lynx canadensis</i>	Canada Lynx
Mammals (Mammalia)	<i>Myotis evotis</i>	Long-eared Myotis
Mammals (Mammalia)	<i>Myotis lucifugus</i>	Little Brown Myotis
Mammals (Mammalia)	<i>Myotis thysanodes</i>	Fringed Myotis
Mammals (Mammalia)	<i>Myotis volans</i>	Long-legged Myotis
Mammals (Mammalia)	<i>Myotis yumanensis</i>	Yuma Myotis
Mammals (Mammalia)	<i>Pekania pennanti</i>	Fisher
Mammals (Mammalia)	<i>Sorex eximius</i>	Western Pygmy Shrew
Mammals (Mammalia)	<i>Synaptomys borealis</i>	Northern Bog Lemming
Mammals (Mammalia)	<i>Ursus arctos</i>	Grizzly Bear
Birds (Aves)	<i>Accipiter atricapillus</i>	American Goshawk
Birds (Aves)	<i>Ammodramus leconteii</i>	LeConte's Sparrow
Birds (Aves)	<i>Aquila chrysaetos</i>	Golden Eagle
Birds (Aves)	<i>Ardea herodias</i>	Great Blue Heron
Birds (Aves)	<i>Botaurus lentiginosus</i>	American Bittern
Birds (Aves)	<i>Catharus fuscescens</i>	Veery
Birds (Aves)	<i>Certhia americana</i>	Brown Creeper
Birds (Aves)	<i>Chlidonias niger</i>	Black Tern

Species Type	Species Scientific Name	Species Common Name
Birds (Aves)	<i>Coccothraustes vespertinus</i>	Evening Grosbeak
Birds (Aves)	<i>Cygnus buccinator</i>	Trumpeter Swan
Birds (Aves)	<i>Cypseloides niger</i>	Black Swift
Birds (Aves)	<i>Dolichonyx oryzivorus</i>	Bobolink
Birds (Aves)	<i>Dryocopus pileatus</i>	Pileated Woodpecker
Birds (Aves)	<i>Gavia immer</i>	Common Loon
Birds (Aves)	<i>Haemorhous cassinii</i>	Cassin's Finch
Birds (Aves)	<i>Himantopus mexicanus</i>	Black-necked Stilt
Birds (Aves)	<i>Histrionicus histrionicus</i>	Harlequin Duck
Birds (Aves)	<i>Ixoreus naevius</i>	Varied Thrush
Birds (Aves)	<i>Lagopus leucura</i>	White-tailed Ptarmigan
Birds (Aves)	<i>Leucosticte tephrocotis</i>	Gray-crowned Rosy-Finch
Birds (Aves)	<i>Melanerpes lewis</i>	Lewis's Woodpecker
Birds (Aves)	<i>Nucifraga columbiana</i>	Clark's Nutcracker
Birds (Aves)	<i>Numenius americanus</i>	Long-billed Curlew
Birds (Aves)	<i>Picoides arcticus</i>	Black-backed Woodpecker
Birds (Aves)	<i>Podiceps auritus</i>	Horned Grebe
Birds (Aves)	<i>Poecile hudsonicus</i>	Boreal Chickadee
Birds (Aves)	<i>Psiloscops flammeolus</i>	Flammulated Owl
Birds (Aves)	<i>Spizella breweri</i>	Brewer's Sparrow
Birds (Aves)	<i>Sterna hirundo</i>	Common Tern
Birds (Aves)	<i>Surnia ulula</i>	Northern Hawk Owl
Birds (Aves)	<i>Troglodytes pacificus</i>	Pacific Wren
Reptiles (Reptilia)	<i>Elgaria coerulea</i>	Northern Alligator Lizard
Reptiles (Reptilia)	<i>Plestiodon skiltonianus</i>	Western Skink
Amphibians (Amphibia)	<i>Anaxyrus boreas</i>	Western Toad
Amphibians (Amphibia)	<i>Lithobates pipiens</i>	Northern Leopard Frog
Fish (Actinopterygii)	<i>Cottus rhotheus</i>	Torrent Sculpin
Fish (Actinopterygii)	<i>Oncorhynchus lewisi</i>	Westslope Cutthroat Trout
Fish (Actinopterygii)	<i>Oncorhynchus mykiss gairdneri</i>	Columbia River Redband Trout
Fish (Actinopterygii)	<i>Salvelinus confluentus</i>	Bull Trout
Invertebrates - Insects	<i>Bombus suckleyi</i>	Suckley's Cuckoo Bumble Bee
Invertebrates - Insects	<i>Danaus plexippus</i>	Monarch
Invertebrates - Insects	<i>Euphydryas gillettii</i>	Gillette's Checkerspot
Invertebrates - Insects	<i>Polygonia progne</i>	Gray Comma
Invertebrates - Insects	<i>Rhyacophila belona</i>	Needle-like Free-living Caddisfly
Invertebrates - Insects	<i>Rhyacophila ebria</i>	Drunken Free-living Caddisfly
Invertebrates - Insects	<i>Rhyacophila glaciera</i>	Glacier Free-living Caddisfly
Invertebrates - Insects	<i>Rhyacophila potteri</i>	Potter's Free-living Caddisfly

Species Type	Species Scientific Name	Species Common Name
Invertebrates - Insects	<i>Rhyacophila rickeri</i>	Ricker's Free-living Caddisfly
Invertebrates - Insects	<i>Coenagrion interrogatum</i>	Subarctic Bluet
Invertebrates - Insects	<i>Aeshna subarctica</i>	Subarctic Darner
Invertebrates - Insects	<i>Somatochlora walshii</i>	Brush-tipped Emerald
Invertebrates - Insects	<i>Parameletus columbiae</i>	Columbia Primitive Minnow Mayfly
Invertebrates - Insects	<i>Isocapnia crinita</i>	Hooked Snowfly
Invertebrates - Insects	<i>Isocapnia integra</i>	Alberta Snowfly
Invertebrates - Insects	<i>Lednia tumana</i>	Meltwater Lednian Stonefly
Invertebrates - Insects	<i>Soyedina potteri</i>	Rocky Mountain Forestfly
Invertebrates - Insects	<i>Zapada cordillera</i>	Cordilleran Forestfly
Invertebrates - Insects	<i>Zapada glacier</i>	Western Glacier Stonefly
Invertebrates - Mollusks	<i>Acroloxus coloradensis</i>	Rocky Mountain Capshell
Invertebrates - Mollusks	<i>Magnipelta mycophaga</i>	Magnum Mantleslug
Invertebrates - Mollusks	<i>Oreohelix alpina</i>	Alpine Mountainsnail
Invertebrates - Mollusks	<i>Oxyloma nuttallianum</i>	Oblique Ambersnail
Invertebrates - Mollusks	<i>Pristiloma wascoense</i>	Shiny Tightcoil
Invertebrates - Mollusks	<i>Prophysaon andersonii</i>	Reticulate Taildropper
Invertebrates - Mollusks	<i>Prophysaon humile</i>	Smoky Taildropper
Invertebrates - Mollusks	<i>Zacoleus idahoensis</i>	Sheathed Slug
Invertebrates - Other	<i>Salmasellus steganothrix</i>	A Cave Obligate Isopod
Invertebrates - Other	<i>Stygobromus glacialis</i>	Glacier Amphipod

Table 5. Migratory Birds of Concern according to ECOS IPaC

Common Name (Species Name)	Duration of Occurrence
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	Year-round
Black Swift (<i>Cypseloides niger</i>)	Breeding
Evening Grosbeak (<i>Coccothraustes vespertinus</i>)	Breeding
Calliope Hummingbird (<i>Stellula calliope</i>)	Breeding
Cassin's Finch (<i>Carpodacus cassinii</i>)	Breeding
Williamson's Sapsucker (<i>Sphyrapicus thyroideus nataliae</i>)	Breeding
Golden Eagle (<i>Aquila chrysaetos</i>)	Year-round
Lewis's Woodpecker (<i>Melanerpes lewis</i>)	Breeding
Rufous Hummingbird (<i>selasphorus rufus</i>)	Breeding

2.2 Natural Resource Services

Natural resource services are the physical and biological functions performed by the natural resources, including the human uses of those functions, and are a result of the quality of the resource (43 C.F.R. § 11.14 (nn)). Further, services also can be used as “... a metric for measuring resource conditions and resource restoration” and are “restored or replaced by actions related to the quality, quantity, or availability of natural resources” (73 Fed. Reg. 57,259). In defining services in this way, the CERCLA NRDAR regulations and associated literature specifically document that the services one component of an ecosystem provides to another, such as through a food chain, as well as the human uses of the resource, are compensable if those services are reduced as a result of a release of hazardous substances. The CERCLA NRDAR regulations further describe services as the metric by which the benefits of natural resources may be quantified. The subsections below highlight some of the key services provided by the resources of focus for the Trustees, which will be the subject of the NRDAR. This discussion is not intended to be exhaustive of all potential services provided by natural resources in the Assessment Area.

INTERIM LOST CULTURAL USES IN THE CONTEXT OF NRDAR

The CSKT may use and interact with natural resources to an extent and in ways that are different from the general public. Further, the role that natural resources play in tribal culture may differ from that of the general public. As a result of these differences, the services that natural resources provide to tribal members may be considered unique. To ensure that the full range of natural resource services, and potential service losses, are investigated as part of this NRDAR, the specific suite of services that natural resources provide to these tribal communities are being specifically considered and evaluated.

2.2.1 Surface Water (and Sediment) Services

The aquatic habitat at the Site provides a variety of ecological and human use services. Surface water provides habitat for aquatic animals and plants and a source of drinking water for biological resources (Roux 2020a). The Flathead River is the sole migration corridor and critical habitat for trout to move from Flathead Lake to tributaries in the North and Middle Forks of the Flathead River (EHS Support 2018a). Cedar Creek Reservoir Overflow Drainage flows intermittently in the spring and regulates seasonal variations in flow for Cedar Creek and the Cedar Creek Reservoir (Roux 2020a). Sediment can have both positive and negative effects on aquatic-terrestrial food webs. Elevated levels of fine sediment can have negative impacts on fish and aquatic invertebrate survival and fitness, including reducing oxygen flow, damage to respiratory systems, and binding to various contaminants (Kemp *et al.* 2011). However, sediment deposition provides habitat and prey resources for fish, invertebrates, birds, and mammals. It also provides nutritive substrate for plant growth, and filtration of surface water as it passes into the ground (EHS Support 2018a, Roux 2020a).

Surface water and sediment resources (depending on the type and level of sedimentation) also provide multiple services including provisioning services (e.g., food fiber, direct use), regulating services (e.g., biological self-purification, hydrology, climate), cultural services (recreation, educational and aesthetic values), and supporting services (e.g., soil formation, nutrient cycling) (Rinke *et al.* 2019). Based on the designated use of the Flathead River (see Section 2.1.1) as well as local recreational use, the Flathead River is understood to support recreational human use services (Roux 2020a). The Flathead River has been a popular destination for fishing, boating, and hiking for residents and tourists (*Recreation* 2024). Cedar Creek may also provide recreational services. Lastly, the River also holds particular value for the CSKT because the CSKT have a unique cultural connection with the River and CSKT tribal members use the resource in a specific way. Surface water resources support Flathead Valley resident fish populations, which in turn provide specific provisioning services to the tribal communities (see Section 2.2.4 below).

2.2.2 Groundwater Services

A wide range of services provided by groundwater have been documented in the literature. These include services that can accrue to people (e.g., drinking water), as well as ecological services (e.g., clean groundwater discharging to surface waters, aquatic invert habitat (Stanford 1988)). For example, the National Research Council states:

The total economic value (TEV) of ground water is a summation of its values across all of its uses. Sources of values have been classified into use values (sometimes called direct use values) and nonuse values (also known as passive use values, existence values). The use values arise from the direct use of a good or asset by consuming it or its services. For ground water, these would include consumption of drinking water and other municipal or commercial uses. Nonuse values arise irrespective of such direct use. Thus in the economist's jargon the TEV of a given resource asset includes the summation of its use and nonuse values across all service flows. The notion of TEV is fundamental to ground water valuation and should enter into management decisions regarding use of water resources. Valuation is a useful tool if the values can help inform decision-makers. The relevant issue is how the TEV of ground water will change when a policy or management decision is implemented. (NRC 1997, p. 48)

Other researchers (e.g., EPA 1995, Bergstrom *et al.* 1996) also have documented the range of services provided by groundwater, including both use and nonuse services. Additionally, published studies have demonstrated the economic value the public holds for these various services (e.g., Bergstrom *et al.* 2001). For example, the public likely holds an option value for groundwater that represents an individual's willingness-to-pay to reduce or eliminate uncertain future risks associated with groundwater resources. "Option price," which includes such option values, is well established in the economics literature generally (see Freeman 2003), and specifically with respect to groundwater protection (see Sun *et al.* 1992, Bergstrom *et al.* 2001). Option prices may reflect both use and nonuse values; that is, the option price an individual is willing to pay reflects all of the values that an individual may hold for a groundwater resource.

At the Site, for example, groundwater serves as a source of recharge of surface water and aids in nutrient recycling, purification of water, and water storage, helping to mitigate drought. It also provides assimilative capacity and can promote degradation of anthropogenic contaminants (Griebler and Avramov 2015). The EPA has predicted that climate change is likely to increase the demand for water in areas that depend on melting snow in Montana, but more research is needed to determine how impactful this will be in the areas surrounding the Site (Hicke *et al.* 2022). Importantly, groundwater serves as the primary drinking water source for the closest residential community, Aluminum City, as well as for the City of Columbia Falls (EHS Support 2018b).

2.2.3 Geologic Resource Services

Geologic resources provide storage for groundwater and filter and clean surface water as it passes into the ground. Additionally, geologic resources provide a nutritive substrate for plant growth and shelter for burrowing animals while helping to regulate erosion and retain water, which prevents flooding. These resources store carbon dioxide and create habitats for microorganisms that enhance biodiversity above the subsurface. Furthermore, they play a crucial role in regulating limnological chemistry and groundwater levels, helping to prevent landslides. Geologic resources also provide direct benefits to humans in several ways. They serve as a repository for cultural and geological heritage, retain water, and replenish nutrients in soils for agriculture. Additionally, geologic resources provide space and stability for development, life, and infrastructure (Frisk *et al.* 2022). Recreationally, geologic resources create sites for rock-climbing, trail-running, and hiking (Recreation 2024).

2.2.4 Biological Resource Services

Biological resources are vital for maintaining the ecological health and resilience of an area. Vegetation in the Assessment Area provides not only habitat, but breeding, loafing, and denning services for migratory birds, mammals, and other wildlife. Vegetation also enhances soil health by preventing erosion, improving nutrient cycling, and promoting water retention. Plants moderate local temperatures and humidity, creating more favorable conditions for various organisms. Air quality is also improved by plant life, and vegetation facilitates movement and migration for various species, promoting biodiversity. Pollination, carried out by various insects and birds, enhances agricultural productivity and contributes to biodiversity by enabling the reproduction of numerous plant species. Soil-dwelling invertebrates cycle nutrients and serve as food resources for mammals and small birds. Small mammals and birds are prey for higher trophic level organisms. Fish contribute to nutrient cycling, control insect populations, and serve as a food resource for birds and mammals. Birds serve as pollinators, scavengers, and seed dispersers and some small birds serve as a food source for larger birds of prey (Granek *et al.* 2020).

Biological resources also provide direct benefits to humans including subsistence, food, and fiber; recreation in the form of hiking, hunting, horseback riding, and fishing; ecotourism; aesthetic values; educational values; inspiration; and sense of place (Xu *et al.* 2020, *Recreation* 2024). Additional benefits include the buffer from pollutants that vegetation provides and temperature regulation (Granek *et al.* 2020).

Finally, members of the CSKT hold unique values and derive cultural services from the biota and habitats they comprise. Pursuant to the Hellgate Treaty of 1855, the Tribes hold reserved rights to hunting and gathering on open and unclaimed lands, and fishing at all usual and accustomed places, which include lands and resources within the Assessment Area. The CSKT have a unique cultural connection to the River and hold particular values for the fishing rights they hold within the Flathead River, which flows to and through their Reservation, as well as cultural values for the native trout inhabiting that system and the surface water that supports them.

CHAPTER 3 | Injury Determination

Determination of injury to natural resources under the CERCLA NRDAR regulations is based on documentation that: (1) there is a pathway for the released hazardous substance from the point of release to a point at which natural resources are exposed to the released substance, and (2) injury of a natural resource of interest (i.e., surface water, sediment, soil, groundwater, biota) has occurred, as defined in 43 C.F.R. § 11.62.

Pathway is defined as:

The route or medium through which...a hazardous substance is or was transported from the source of the discharge or release to the injured resource (43 C.F.R. § 11.14(dd)).

Injury is defined as:

A measurable adverse change, either long- or short-term, in the chemical or physical quality or the viability of a natural resource resulting either directly or indirectly from exposure to a...release of a hazardous substance (43 C.F.R. § 11.14(v)).

For certain resource categories, the CERCLA NRDAR regulations provide more specific definitions for what constitutes injury to that particular resource, as well as specific considerations and acceptance criteria for documenting injury. For several resource categories, for example, exceedance of a federally- or state-promulgated criterion (e.g., an ambient water quality criterion or a maximum contaminant level established in the Circular DEQ-7 Montana Numeric Water Quality Standards (DEQ-7 Standards) criteria [DEQ 2019]) is determined to be a *per se* injury. Additionally, the presence of a governmental advisory limiting or banning consumption of fish or wildlife due to the presence of hazardous substances is also considered a *per se* injury. Readers are referred to 43 C.F.R. § 11.61, *et seq.* of the CERCLA NRDAR regulations for additional details in this regard. Finally, if concentrations of hazardous substances in one resource are sufficiently elevated to cause injury to another resource, then that resource can also be considered injured. For example, if concentrations of hazardous substances in surface water are high enough to cause injury to biota, then both surface water and biota may be considered injured.

The CFAC Trustees anticipate applying a variety of approaches to determine if an injury to a natural resource has occurred, including comparing observed hazardous contaminant concentrations to promulgated thresholds and identifying measurable adverse changes in resources attributable to hazardous substance exposure. As part of the assessment, the Trustees will decide upon appropriate adverse effects endpoints or criteria to use when quantifying service losses based on a variety of factors (e.g., nature of the contaminants, potentially exposed receptors, and review of available toxicity information). In addition, as noted further below, the Trustees will also evaluate collateral injuries to natural resources caused by remedial actions (see 43 C.F.R. § 11.15(a)(1)).

3.1 Pathway and Confirmation of Exposure

As noted above, a precursor to determining injury to natural resources is to establish a pathway from a known release of a hazardous substance to exposure of a trust natural resource. Pathways for Site resources have already been established in the PAS. Specifically, the PAS identified:

- Aerial pathways through which hazardous substances were emitted via stack emissions—although the extent of aerial emissions is unknown—and subsequently deposited on surrounding habitats containing soil, surface water, and biological resources, as well as aerial emissions from resuspension of hazardous substances that were deposited on the ground.

- Fluvial pathways through which hazardous substances leached through unlined landfills, storage areas, and ponds into groundwater.
- Fluvial pathways through which hazardous substances were discharged directly to terrestrial and transition habitats via runoff.
- Fluvial pathways through which hazardous substances were discharged via groundwater to surface water.
- Biological uptake pathways through which biota came into direct contact with natural resources contaminated by Site hazardous substances, including ingestion and dermal contact.
- The remedial documents identified other pathways, including direct deposition of hazardous substances into landfills, storage areas, and ponds.

A natural resource has been exposed to a hazardous substance if all or part of it is, or has been, in physical contact with a hazardous substance, or with media containing a hazardous substance (43 C.F.R. § 11.14(q)). Consistent with 43 C.F.R. § 11.31(c)(1) and § 11.37, and as noted in Chapter 1, the PAS documented that natural resources within the Assessment Area have been exposed to hazardous substances, thereby supporting the Trustees' decision to proceed with assessment planning. However, as part of injury determination, the Trustees will determine the areal extent of injury to each potentially injured resource in accordance with 43 C.F.R. § 11.63. Additional resource-specific considerations for injury determination are detailed below.

3.2 Surface Water (and Sediment) and Groundwater Injury Determination

Injury to surface water and groundwater resources has occurred from a release of hazardous substances if the concentrations and duration of substances measured are sufficient to exceed water quality criteria established in the Safe Drinking Water Act (42 U.S.C. §300f, *et seq.*) or CWA (33 U.S.C. §1251, *et seq.*) or if concentrations are sufficiently elevated to cause injury to other natural resources. Additionally, since sediment is considered a component of surface water, if concentrations of hazardous substances in sediment exhibit certain characteristics in the Solid Waste Disposal Act (42 U.S.C. Chapter 82) surface water can also be considered injured (43 C.F.R. §§ 11.62(b),(e)). Injury to surface water and groundwater can also be demonstrated generally through documentation of measurable, adverse, change in the resource (43 C.F.R. § 11.14(v)).

Given the availability of applicable promulgated thresholds for water quality in the State of Montana (i.e., DEQ-7 Standards [DEQ 2019]), the Trustees intend to utilize existing data, as well as any additional data to be collected as part of this assessment, to document whether concentrations of hazardous substances in Assessment Area surface water and/or groundwater are sufficient to cause injury. Comparison of these data to the promulgated thresholds will allow for such a determination.

In addition, the Trustees may also evaluate sediment data to assess potential injury to surface water. Although there are no promulgated sediment quality thresholds, thresholds indicative of measurable adverse changes to freshwater sediments, including thresholds indicative of likely harm to resident aquatic biota, are readily available in the peer reviewed literature, and may be used to establish injury. Further, to the extent that existing Site-specific surface water or sediment toxicity testing has been performed, these data may also be used to establish surface water injury.

Other studies to further determine injury to surface water and groundwater may be developed as necessary. Final documentation of injury to surface water and groundwater in the Assessment Area will follow specific guidance and acceptance criteria detailed in 43 C.F.R. § 11.62, *et seq.*

3.3 Geologic Resources Injury Determination

Injury to geological resources has occurred if the released hazardous substances are of sufficient concentration and duration to cause injury to other natural resources, including biota (typically in surface soils), surface water (via runoff), or groundwater (typically in deeper geologic units). The CERCLA NRDAR regulations specifically identify a suite of *per se* injury criteria that constitute such injury, including when concentrations of substances are sufficient to: reduce or increase soil pH below or above certain thresholds, exhibit characteristics identified in the Solid Waste Disposal Act (42 U.S.C. Chapter 82), impede soil microbial respiration, decrease water holding capacity or inhibit carbon mineralization, restrict the ability to use mineral resources, or cause toxicity to biota (43 C.F.R. § 11.62(e), *et seq.*). The Trustees anticipate applying thresholds published in the peer reviewed literature or by environmental regulatory agencies (e.g., ecological soil screening levels developed by the EPA, soil screening criteria developed by Efroymson *et al.* (1997) that correspond to the likelihood of observing adverse effects to soil-dwelling biota to demonstrate injury to soil resources). These thresholds will be compared to any readily available Site soils data, or soils data collected as part of the assessment, to document injury to geologic resources within the CFAC Assessment Area.

3.4 Biological Resources Injury Determination

Biological resource injury has occurred if a hazardous substance release is of a sufficient concentration to cause a biological resource or its offspring to experience death, disease, behavioral changes, cancer, mutations, or adverse reproductive effects, among other adverse measurable changes. Biological injury can also be established through the exceedance of an action or tolerance level under section 402 of the Food, Drug, and Cosmetic Act (21 U.S.C. Chapter 9) or if hazardous substance concentrations are sufficiently elevated for a state health agency to issue a consumption advisory for the consumption of that organism 43 C.F.R. § 11.62(f). The CERCLA NRDAR regulations also identify 18 specific circumstances that constitute injury (see 43 C.F.R. § 11.62(f)(4)) which range from eggshell thinning to enzyme inhibition. The Trustees intend to determine biological resource injury based on readily available data on concentrations of hazardous substances in various environmental media at the Site (e.g., surface water, sediment, and soil) compared to thresholds identified in the peer reviewed literature that are indicative of measurable adverse changes to biota exposed to such concentrations. Depending on the results of evaluations of these readily available environmental media data, additional studies may be implemented (Table 6; Resource-specific Primary Data Collection) to address specific data gaps.

3.5 Remedial Injury

Direct and indirect collateral injuries to natural resources occurring as a result of remedial actions are also compensable in NRDAR. Specifically, damages can include “injuries occurring from the onset of the release through the recovery period, less any mitigation of those injuries by response actions taken or anticipated, plus any increase in injuries that are reasonably unavoidable as a result of response actions taken or anticipated” (43 C.F.R. § 11.15(a)(1)). Therefore, in documenting injury to natural resources, the Trustees will also consider the effects of remedial actions.

CHAPTER 4 | Injury Quantification

The ultimate goal of NRDAR is to restore, replace, or acquire the equivalent of natural resources and resource services injured or lost as a result of a release of hazardous substances. Therefore, once natural resources have been determined to have been injured, the Trustees must undertake a quantification of losses to determine how much restoration, replacement, or acquisition is required to make the public whole. The CERCLA NRDAR regulations describe damages as the restoration costs required to return the injured natural resources to their baseline condition plus, at the Trustees' discretion, the compensable value of all, or a portion of, the services lost to the public for the time period from the release until the attainment of the restoration, replacement, and/or acquisition of equivalent of baseline (43 C.F.R. §§ 11.13(e)(3), 11.83, *et seq.*). Compensable value for interim losses includes both past losses and losses that will occur until the injured resources and services are returned to baseline. The CERCLA NRDAR regulations provide trustees with a range of alternative approaches to determine the compensable value, including restoration cost-based approaches for compensating for interim losses as well as economic valuation approaches used to estimate public use and nonuse values (43 C.F.R. § 11.83(c)). The Trustees intend to use restoration cost-based approaches to quantify injuries, scale restoration, and ultimately determine damages.

Specifically, to quantify natural resource injuries, the Trustees will (1) measure the extent of the injury, (2) identify the baseline condition and services provided by the injured resources, (3) assess the recoverability of the injured resources, and (4) quantify the reduction in services resulting from the contamination of the resources by the released hazardous substances. Injuries and losses will be quantified in terms of the actual measured loss of specific resources and/or the services that the injured resources would have provided had the release not occurred. Further, the Trustees will aim to quantify natural resource injuries and service losses in a manner that facilitates the selection and scaling of restoration (i.e., losses will be quantified using units useful for measuring lost services as well as the benefits provided by restoration actions). To accomplish this, the Trustees anticipate using equivalency analyses (see below). Any injuries or service losses the Trustees are unable to quantify may be addressed qualitatively by targeting restoration activities that compensate for those losses in a general way. As part of quantifying the injury under 43 C.F.R. § 11.71, the Trustees will consider exclusions from liability, including the statutory exclusions provided in sections 107 (f), (i), and (j) and 114(c) of CERCLA.

4.1 Ecological Losses

The Trustees anticipate using equivalency-based methods (see text box on Equivalency Analyses in NRDAR below), which are specifically approved valuation methodologies in the CERCLA NRDAR regulations (43 C.F.R. § 11.83(c)(2),(3)). Equivalency analyses quantify resource losses from contamination over the spatial and temporal extent of injury and quantify resource gains from restoration over the spatial and temporal extent of the restoration project(s).

For this assessment, the Trustees anticipate quantifying ecological injury in terms of lost services on a habitat basis by focusing on representative species (i.e., components of a habitat) using habitat equivalency analysis (HEA). While habitat sub-types may be quantified separately, it is likely that the habitats of focus will be aquatic habitat (broadly including in-stream as well as any hydrologically connected wetland habitat), and terrestrial habitats (encompassing the upland portions of the Assessment Area). However, the Trustees also may consider quantifying injury to specific resources (e.g., threatened or endangered species, or individual biological species found to be disproportionately harmed) using resource equivalency analysis (REA).

EQUIVALENCY ANALYSIS IN NRDR

Equivalency analyses are methods for scaling the amount of restoration needed to offset a certain amount of natural resource injury. They consider resource losses, as well as the gains, from compensatory restoration over time, employing the concept of discounting. Two common variants of these types of analyses are resource and habitat equivalency analysis. A third method, habitat-based resource equivalency method (HaBREM), has also emerged in recent years (Baker et al. 2019).

Resource Equivalency Analysis (REA)

REA is commonly used to quantify lost ecosystem services when the injury is specific to a particular resource or biological species or species group, particularly when the nature of the injury lends itself to quantification in terms of units of the resource. For example, for a biological resource REA, the unit of injury may be the number of organisms lost (or their biomass) and may also potentially include their lost future somatic (i.e., physical) growth and/or reproductive potential. For a groundwater REA, the unit of injury may be unit volumes of groundwater (e.g., gallons or acre-feet). REA then applies modeling to quantify unit losses over time with discounting to put past and future changes in the selected measurement unit into a common present value. One advantage of REA is its targeted focus on a resource specifically identified as having been adversely affected by a release of a hazardous substance. Once resource losses have been quantified, resource gains provided through restoration are similarly quantified, and restoration projects are scaled to ensure the quantity of resources restored is equivalent to the quantity that was lost.

Habitat Equivalency Analysis (HEA)

HEA is most commonly undertaken when injury or service losses can more reasonably be said to accrue to a geographic area. Instead of evaluating resource losses to one specific resource, as is done in REA, resource losses are evaluated more holistically on a habitat basis. Service loss estimates across multiple species (or species groups or habitat components) are combined to generate an overall service loss estimate for a given area. Discounting is then used to scale past and future losses, which are typically measured in present value units of “area-time” (e.g., discounted service acre-years). Similar to REA, the benefits of a given restoration project(s) are also quantified, using the same units (e.g., discounted service acre-years provided by restoration), and the amount of restoration needed to compensate for losses is identified.

Habitat-Based Resource Equivalency Method (HaBREM)

HaBREM is a variant of HEA that employs resource-based metrics (e.g., biological abundance, plant cover, etc.) to explicitly quantify service losses and scale resource gains within a habitat equivalency framework. It similarly uses modeling and discounting, like both methods above, but aims to scale habitat losses and gains based on specific resource-focused metrics that may be objectively quantified using standard scientific field research methods.

4.2 Groundwater Losses

It is anticipated that a REA approach will be used for assessing and scaling restoration for groundwater losses. REA methods are based on balancing the injury to natural resources that has occurred over time with an equivalent amount of restoration, taking into account the nature and duration of the injury (including remediation) and the nature and timing of the restoration. Thus, for a groundwater REA, it will be necessary to characterize the baseline quality of the groundwater, quantify the amount of injured groundwater, and delineate the time frame of the injury.

The quantity of injured groundwater may be quantified either as a stock volume or a flow (i.e., flux) of groundwater passing through the aquifer over a unit of time (e.g., on an annual basis). Either approach will require information about the spatial extent of the groundwater contamination and the physical properties of the aquifer. For example, to calculate flow, the surface area and the recharge rate of the groundwater contaminant plume will be needed. Delineating the time frame of injury will include determining when it began, how it may have changed over time, and when (or if) it will end.

4.3 Tribal Interim Lost Cultural Uses of Natural Resources

The CSKT inhabited the area surrounding the Site for generations and have a unique cultural connection to the landscape and associated natural resources that are potentially adversely affected by Site-related hazardous substance releases. As such, it may be necessary to describe and quantify natural resource injuries and service losses to CSKT tribal members separately from losses to the general public. This may require an evaluation of information on the natural resources of importance to the CSKT, associated tribal uses and values, and any environmental contaminant data specific to those resources as well as an identification of pertinent data gaps. Further, specific restoration actions may also be required to fully compensate for tribal community service losses.

Interim lost cultural uses of natural resources assessments will focus on (1) documenting adverse impacts in natural resources of importance to tribal members and/or uses and values of those natural resources; (2) determining or describing the adverse impacts to natural resource uses or values experienced by tribal members that are attributable to hazardous substance releases; and (3) generating information relevant for both primary and compensatory restoration identification and scaling.

Damage assessments involving interim lost cultural uses of natural resources claims have generally relied on similar methods to other natural resource claims, with modifications or additions to reflect the unique circumstances of tribal uses and values. Alternatively, methods used to assess impacts on Indigenous cultures in other contexts have also been relied upon, such as land claims or cultural impact assessments. Examples of options available include:

- Conducting surveys (e.g., stated preference, contingent valuation),
- Assessing hazardous substance release-related changes in cultural practices, traditional knowledge, language, or other cultural services and,
- Quantifying use of resource-specific losses as a direct proxy for tribal service losses.

In this case, the Trustees anticipate compiling and reviewing any existing information on natural resources utilized by CSKT tribal members, tribal values and services related to those natural resources, potential impacts from CFAC-related releases of hazardous substances, and any sampling data related to resources of concern for the CSKT. After a review of available information, the Trustees will determine the need for additional data collection to inform any data gaps. Additional data collection may include conducting interviews, focus groups, or a similar approach to collecting information from tribal community members pertaining to tribal uses of natural resources and potential service losses experienced by tribal community members.

4.4 Accounting for Baseline in Injury Quantification

As noted in Section 1.3.4 above, baseline is defined as the condition(s) that would have existed if the hazardous substances had not been released in the Assessment Area (43 C.F.R. §11.14(e)). Therefore, baseline data should reflect expected conditions in the Assessment Area had the release of hazardous substances not occurred, taking into account natural processes and changes that result from human activities (e.g., structural alterations). Site-specific historical data applicable to establishing baseline have not been identified to date. If the Trustees do not identify relevant Site-specific historical data, the Trustees plan to use, in order of priority, data from reference/control areas (43 C.F.R. § 11.72(d)), relevant literature and historical data (43 C.F.R. § 11.72(c)), and/or Site-specific studies (43 C.F.R. § 11.72(c)(5)).

The determination of baseline will consider the conditions that would have existed if the releases of hazardous substances associated with plant operations, which began in 1955, had not occurred. Baseline will also consider

the existence of the plant structures and operations that may have impacted the Assessment Area unrelated to the releases of hazardous substances.

4.5 Resource Recoverability

Recovery period is defined as the time required for the injured resources and their services to return to their baseline condition, as defined by the Trustees (43 C.F.R. § 11.14(gg)). The rate of resource recovery will be determined based on information on the nature, scope, and severity of natural resource injuries; the nature, extent, and timing of remedial activities; the expected natural attenuation of contamination; and estimates of resource recoverability implied by trends in resource monitoring data or derived from the literature. If available, Site-specific time-series data may be used to estimate trends in natural resource recovery; or, for remediated areas, pre- and post-remedial monitoring data may be used. In some cases, however, the Trustees may apply assumptions related to the time frame or extent of resource recoverability.

4.6 Information Sources

The Trustees anticipate using a variety of information sources to determine natural resource injuries and service losses, and to develop the input parameters for equivalency analyses that will be used as part of injury quantification. These information sources include published and gray literature (e.g., on natural resources relevant to the Site and surrounding area, ecological toxicity, and human uses of the natural resources), Site-specific remediation reports and evaluations, and Site-specific environmental samples.

As part of assessment planning efforts, the Trustees compiled readily available electronic sampling data from the site and surrounding areas into a NRDAR Database. These data include samples collected or required by EPA and DEQ, and associated contractors, as part of the remedial and permitting processes. Samples exist for groundwater, porewater, surface water, sediment, and soils as well as for wastewater, collected between 1999 and 2021. The Trustees compiled the electronically available data into a single NRDAR Database for ease of analyzing the available data and conducted preliminary data processing. As part of data processing, the Trustees standardized field values, removed duplicates, and added metadata for the samples, where available, such as well depth information and sample location coordinates from Site reports or communications with EPA and CFAC.

The Trustees plan to continue to refine the NRDAR Database during the assessment. For example, the Trustees anticipate transcribing historical sampling data from Site reports (e.g., Hydrometrics, Inc. 1980, *Site Location and Evaluation for Disposal of Hazardous Wastes at Columbia Falls Reduction Plant*; Hydrometrics, Inc. 1985, *Hydrogeological Evaluation of ARCO Aluminum Primary Operation*; Ecology and Environment, Inc. 1988, *Analytical Results Report, Columbia Falls Aluminum Company*), to expand the NRDAR Database, focusing on information that may address temporal, spatial, and media-specific data gaps. Additional data collected in the future may also be added to the NRDAR Database as part of the assessment.

CHAPTER 5 | Damages Determination and Restoration

The purpose of a damage determination is to “establish the amount of money to be sought in compensation for injuries to natural resources resulting from a ... release of a hazardous substance” (43 C.F.R. § 11.80(b)). This chapter addresses how damages will be determined using methods described in the CERCLA NRDAR regulations, where applicable (43 C.F.R. § 11.80). As noted in Chapter 4, the Trustees will determine damages using restoration cost-based approaches, and the total amount of natural resource damages will include both the cost of restoration to baseline and the compensable values for interim losses (43 C.F.R. §§ 11.13(e)(3), 11.83, *et seq.*). Damages that are recovered under the CERCLA statute and the NRDAR regulations must be used for natural resource restoration (42 U.S.C. 9601, *et seq.*; 43 C.F.R. Part 11), including restoring both the injured resources as well as the services those resources provide.

5.1 Restoration Focus

The CERCLA NRDAR regulations emphasize that for Type B assessments, damages should be based on actions that “restore, rehabilitate, replace, or acquire the equivalent of” the injured resources and resource services (see 43 C.F.R. §§ 11.13(e)(3), 11.82, *et seq.*). Such actions are broadly referred to as “restoration.” Restoration is intended both to return injured resources to their baseline condition and to compensate for resource service losses during the period of injury.

As noted in Chapter 1, the CERCLA NRDAR regulations describe the development of an RCDP as part of the Assessment Plan (43 C.F.R. § 11.81(d)(1)). An RCDP lists a reasonable number of possible alternatives for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources and their related services, selects one or more of the alternatives based on general criteria set forth in the CERCLA NRDAR regulations and site-specific criteria established by the trustees, and provides a rationale for the selected alternative(s) (43 C.F.R. § 11.81(a)). If existing data are not sufficient to develop an RCDP at the time that the Assessment Plan is released, the CERCLA NRDAR regulations allow trustees to defer development and public release of an RCDP until after completion of the injury determination or quantification phases (43 C.F.R. § 11.81(d)(1)). In the CFAC case, information needed to complete an RCDP is insufficient at this time. The Trustees may develop an RCDP later in the assessment process.

The Trustees’ overall approach to restoration, however, will be to target restoration actions that directly benefit natural resources and the public. Where timely restoration of injured natural resources is not feasible (e.g., removal of contaminated sediments to restore all the services that would be provided absent the release of hazardous substances), projects that replace or offset service losses may be undertaken. However, DOI, in discussing the intent of the CERCLA NRDAR regulations, noted:

...[t]he Department does not believe that Congress intended to allow Trustee agencies to simply restore the abstract services provided by a resource, which could conceivably be done through an artificial mechanism. For example, nothing in the language or legislative history of CERCLA suggests that replacement of a spring with a water pipeline would constitute ‘restoration, rehabilitation, replacement, and/or acquisition of equivalent resources.’ CERCLA requires that natural resource damages be based on the cost of restoring, rehabilitating, replacing and/or acquiring the equivalent of an actual natural resource (Federal Register, Volume 58, Number 139, 22 July 1993).

The Trustees intend, therefore, to address restoration at the habitat scale by focusing on restoration projects that will compensate the public by providing resource services in or near the Assessment Area.

Ultimately, as part of restoration planning, the Trustees anticipate identifying a range of potential restoration alternatives, evaluating the suitability of those alternatives in accordance with the CERCLA NRDAR regulations (see 43 C.F.R. § 11.82(d)), and implementing the restoration alternatives. In considering restoration alternatives, the Trustees will also take into consideration any regional or community restoration plans and priorities. The Trustees may also establish additional restoration criteria for purposes of screening or prioritizing specific restoration alternatives. For example, priority may be given to projects that provide additional benefits to the public that go above and beyond restoration of natural resources and resource services, which are the focus of the NRDAR process. As noted above, selected restoration alternatives will be made available to the public for review and comment.

5.2 Ecological Damages Determination

As indicated in Chapter 4, the Trustees anticipate using habitat- and resource-based equivalency methods to quantify ecological losses. The Trustees, therefore, also anticipate using these approaches when scaling restoration to ensure sufficient ecological benefit is provided to compensate for losses. When possible, losses and gains will be measured in the same unit (e.g., number of organisms, biomass, acres of habitat). Damages will be calculated as the cost to implement that restoration.

The Trustees will ensure that there is no “double counting” of losses in the scaling process (43 C.F.R. § 11.84(c)). This will require evaluation of whether restoration scaled to the losses experienced by one resource will also compensate (fully or partially) for the losses associated with another injured resource. Specifically, use of equivalency-based scaling approaches will mean that the Trustees will identify and quantify the services provided by proposed restoration projects as part of the scaling process. As restoration projects are identified and evaluated, attention will need to be paid to the particular suite of services the restoration projects are anticipated to provide. Whenever possible, the Trustees will endeavor to target restoration that will restore, replace, rehabilitate, or acquire the equivalent of those resources and the services they provide that were found to be injured (i.e., in-kind replacement). In some cases, the Trustees may choose to engage in environmental restoration that is deemed worthwhile (but is not in-kind in nature) if it restores similar resources or resource services as those that were injured, or restores resources or services deemed highly important ecologically, when restoration of the same type and quality is unavailable or not possible. In these circumstances, the Trustees will evaluate the relative differences between the type and quality of the injured resources and the resources to be restored and may adjust the scope or scale of required restoration accordingly. For example, the Trustees may develop compensation ratios to account for potential differences in ecological services provided by different habitat types (e.g., wetland versus open water habitat). Such ratios may be applied to ensure that any tradeoffs in the habitats, resources, or resource services targeted for restoration result in restoration projects that are sufficient to make the public whole.

5.3 Groundwater Damages Determination

As with the damages determination approach for ecological losses described above, the Trustees anticipate identifying, scaling, and determining the cost (as necessary) of restoration projects required to compensate the public for groundwater injuries. There are a wide range of restoration projects that could be performed to restore lost groundwater services, such as prevention of groundwater contamination, groundwater preservation initiatives, and promotion of groundwater infiltration, among other concepts. Replacement projects are also widely available. Projects will be chosen based on restoration criteria, and will be scaled using REA—that is, restoration actions will be selected and scaled to replace the present value of the quantity (e.g., either as a static volume or flow) of groundwater shown to be injured in the injury quantification phase of the assessment.

5.4 Tribal Interim Lost Cultural Uses of Natural Resources

As noted in Chapter 4, there are a range of injury quantification approaches available to assess the type and scale of interim lost cultural uses of natural resources. The damages determination approach for interim lost cultural uses of natural resources may depend on the injury quantification approach utilized. However, similar to ecological and groundwater damages determination, damages determination for interim lost cultural uses of natural resources will be based on the cost of restoration actions identified to compensate for the interim losses.

The Trustees will identify and evaluate relevant restoration projects. A suite of restoration actions may be scaled as needed to ensure the adversely affected CSKT tribal members are compensated with services of the same nature and scope as those services determined to have been lost during injury quantification. While it is possible that ecological-focused restoration actions may serve to restore some cultural service losses of injured natural resources, it is possible, if not likely, that specific actions targeting the restoration of tribal cultural use of injured natural resources and associated practice, language, or resource access may need to be conducted. As with scaling restoration and damages to the resources themselves, care will be taken to avoid double counting.

5.5 Damages Potentially Excluded from CERCLA

Throughout the injury determination, injury quantification, and damages determination process, the Trustees will evaluate any damages potentially excluded under sections 107 (f), (i), and (j) and 114(c) of CERCLA, as well as any relevant settlements. This will be an iterative process, with the Trustees continuing to evaluate damages calculations for any applicable exclusions and incorporate the findings at each step of the assessment.

The assessment must exclude damages related to a “release of a hazardous substance . . . occur[ing] wholly before enactment of CERCLA,” 43 C.F.R. § 11.24(b)(1)(ii). The term “release” means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous substance or pollutant or contaminant).” 42 U.S.C. § 9601(22). The term “environment” means “(A) the navigable waters, the waters of the contiguous zone, and the ocean waters of which the natural resources are under the exclusive management authority of the United States under the Magnuson-Stevens Fishery Conservation and Management Act [16 U.S.C. 1801 et seq.], and (B) any other surface water, ground water, drinking water supply, land surface or subsurface strata, or ambient air within the United States or under the jurisdiction of the United States.” 42 U.S.C. § 9601(8).

The assessment must exclude damages resulting “from any other federally permitted release, as defined in section 101(10) of CERCLA.” 43 C.F.R. § 11.24(b)(1)(iv). While some releases from the Site were permitted (see Table 1), the 9th Circuit Case allocating liability between Columbia Falls Aluminum Company, LLC, and Atlantic Richfield Co. did not identify any groundwater contamination subject to this liability exclusion for “federally permitted releases.” See *Columbia Falls Aluminum Co., LLC v. Atlantic Richfield Co.*, No. 21-36042, United States Court of Appeals for the Ninth Circuit, judgment entered January 31, 2023, rehearing denied March 14, 2023. The permitted releases and unpermitted releases (and releases subject to permit violations) are comingled and not currently distinguishable. Additional information is provided in Appendix B, the Response to Comments.

CHAPTER 6 | Proposed Assessment Activities

6.1 Introduction

The preceding chapters describe the framework and general approaches the Trustees’ plan to apply to the CFAC NRDAR to assess the severity and magnitude of natural resource injuries resulting from hazardous substance releases to the Assessment Area. To facilitate the injury assessment process outlined in Chapters 3 and 4 of this Plan, the Trustees plan to leverage existing information and desktop analyses to the extent possible to maximize use of available information and complete the assessment activities as cost-effectively as possible per the guidance provided in the CERCLA NRDAR regulations. However, through implementation of this Plan, the Trustees may determine that additional primary data collection is necessary to address data gaps and to most effectively identify and quantify injuries and scale restoration.

This chapter describes the proposed activities that the Trustees have determined may be necessary based on the current understanding of assessment needs. However, this Plan is not intended to limit additional or alternative studies that may be undertaken during the course of the assessment, as the Trustees recognize that different studies may become necessary or advisable as new information becomes available or as new data gaps are identified. Furthermore, the inclusion of an activity within this Plan does not guarantee that it will be undertaken. For instance, the Trustees may determine that reasonable assumptions may be utilized to address data gaps without further data collection. Rather, this Plan provides a framework within which the Trustees will begin to implement the assessment. As these efforts progress and additional substantive information is generated, the Trustees may provide amendments to this Plan for public review.

6.2 Assessment Activities

The Trustees’ proposed assessment activities are described in Table 6, below. This table summarizes the objective and description of each activity and is organized by the stage of the assessment in which the activity would occur. These activities are designed to support (1) the determination and quantification of injury to natural resources and lost services resulting from Site-related contamination, and (2) the identification and scaling of restoration projects that will compensate for natural resource injuries (including the cost of such restoration). These studies would build on existing data collected during previous investigations (e.g., remedial investigations), and would be coordinated to the extent possible with ongoing efforts initiated by other entities (e.g., EPA). Assessment activities may be implemented in a phased approach based on factors such as: the availability of existing information specific to the Assessment Area; the activity’s cost-effectiveness; the planned technical sequencing of activities that may help inform future studies; or the activity’s likelihood of clarifying the existence or extent of an injury or scaling of required restoration.

The specific approach to conducting these activities will be developed further before each activity is implemented. Specific study plans may be drafted, which would further outline the Trustees’ approach and ensure the data type and quality resulting from the activity are sufficient to meet the goals of the investigation. A Quality Management Plan (QMP) for the assessment is included in Appendix A, which will be used as a guide in the implementation of each assessment activity; however, as detailed in the QMP, individual Work Plans and Quality Assurance Project Plans may also be drafted for a specific study, if necessary. If PFAS are detected during any assessment activities, the Trustees will evaluate exposure pathways in groundwater, surface water, sediment, and relevant biological resources using approaches consistent with 43 C.F.R. Part 11.

Table 6. Summary of Proposed Assessment Activities

Assessment Activity	Objective(s)	Description and Rationale
Compilation and Evaluation of Existing Information		
Compile, review, and evaluate relevant contaminant chemistry data	- Continue assessment planning efforts to compile available environmental data into a single, standardized database. - Process available data as needed for evaluation purposes and to ensure data are usable to meet assessment goals. - Assess the quality of available data records, identify data gaps, and evaluate data sufficiency for injury quantification purposes, including evaluating the need for primary data collection studies.	Contaminant chemistry data, collected under various remedial efforts, exist for a range of relevant media including soil, sediment, surface water, porewater, and groundwater. The Trustees have preliminarily compiled and reviewed these existing data sources as part of assessment planning efforts. However, additional historical data sources exist (e.g., historical Site documents, Forest Service reports) with potentially relevant data that the Trustees intend to review further to supplement the Trustees' existing data compilation. This may include transcribing additional data sources to expand the Trustees' database. This activity may also include further compilation, standardization, processing, and evaluation of the existing data to enable efficient analysis of the relevant data. Data processing involves evaluating non-detect sample results, laboratory replicates, field duplicates, and data qualifiers, and developing and refining an analytical methodology that includes protocols for processing and use of data to meet assessment goals. The Trustees will also refine their understanding of data gaps and determine the need for any studies or approaches to address data gaps (e.g., primary data collection).
Confirm contaminant pathways and exposure of resources	- Evaluate existing information on physical and chemical transport mechanisms within the Assessment Area to document contaminant pathways and natural resource exposure. - Summarize substance release histories and data for various environmental media. - Assess the quality of available data, identify data gaps, and evaluate data sufficiency for confirming pathways of exposure.	Documentation of a complete pathway and exposure of natural resources is a requirement under the CERCLA NRDAR regulations for natural resource injury determination. As part of this effort, the Trustees will review existing pathway information (compiled in the previous activity) and confirm pathways and exposure prior to determining the need to undertake further sampling or studies to maximize the use of existing data and ensure a cost-effective assessment. Information reviewed would include, but may not be limited to, any data on physical and chemical transport mechanisms in the Assessment Area, hazardous substance release histories, and resource data. Summaries would be developed to document release histories and data on soil, sediment, surface water, porewater, groundwater, and flow-through infrastructure (i.e., outfalls), as applicable. Data sufficiency for the purposes of establishing pathway and exposure, and any data gaps, would be documented for further consideration.

Assessment Activity	Objective(s)	Description and Rationale
Compile and review literature-based information on adverse impacts to natural resources	• Compile and summarize available information from published literature regarding adverse effects of Site-specific, relevant contaminants to natural resources. • Conduct a preliminary comparison of Site-specific data to compiled adverse effects thresholds to confirm resources and contaminants of concern for purposes of the assessment.	This activity will first use screening/cleanup levels identified as part of the Trustees' evaluation of the data. If there is not a relevant screening level already identified, this activity will include the compilation, review, and summary of published literature-based information regarding adverse effects of Site-specific, relevant hazardous substances to natural resources. Trustees will evaluate the sufficiency of existing information for evaluating service losses to resources and determine the need for additional efforts to address any data gaps. Finally, dependent on the sufficiency of available information, the Trustees will conduct a comparison of Site-specific data to compiled adverse effects thresholds to confirm resources and contaminants of concern for the assessment.
Compile and review available Site-specific information on adverse impacts to natural resources	• Compile and summarize historic information on any adverse impacts on natural resources, such as fish kills, avian mortality events, impacts to Teakettle Mountain, etc.	As part of the historic review of available information, this compilation will evaluate reported fish kills, and any avian mortality events, Teakettle Mountain, and available historic information regarding impacts from hazardous substances from the Site.
Compile and review available information on tribal uses of natural resources and potential service losses	• Conduct primary data collection efforts with Tribal community members to better understand potential adverse impacts resulting from releases of hazardous substances from the Site. • Document natural resources and their services, the relationships between resources and Tribal communities, and any risks or perceptions of risks.	Members of the CSKT use natural resources in the Assessment Area in ways that are unique compared to the general public. This activity will include a compilation and review of available information on uses of natural resources specific to the CSKT, any sampling data related to resources of concern to the Tribes, and potential losses they may have experienced as a result of the releases of hazardous substances. Through this activity, the Trustees may identify data gaps that require further study, and this activity may also inform the scale and scope of cultural services provided by natural resources.
Compile and review available Site-specific information on recreational and other human use losses	• Describe the types of human uses of natural resources present in the Assessment Area and those that may have been (or continue to be) adversely impacted. • Assess potential scope and magnitude of recreational and other human use losses and identify any data gaps.	Lost human use opportunities may be associated with the presence of contaminants in the Assessment Area, which could result in service losses. This activity will involve inventorying recreational and other human uses in the Assessment Area and any potential adverse effects stemming from releases of hazardous substances (e.g., advisories, institutional controls, changes in recreational behavior). This will help inform potential human use losses, the scale and scope of human services provided by natural resources and help determine if additional human-use studies are necessary.

Assessment Activity	Objective(s)	Description and Rationale
Compile and review available Site-specific remedial information	• Compile information on planned or expected remedial activities including timing, location, spatial extent, and type. • Evaluate the severity and magnitude of impacts to resources and resource services.	Remedial actions may cause collateral injuries and must be considered during injury quantification. Compiling data on the geographic extent and time frame of remedial activities will allow the Trustees to incorporate remedial impacts into subsequent analyses. This activity will include a review, compilation, and documentation of existing information on remedial actions that have occurred and are planned for the Site. The Trustees will then evaluate the adverse impacts on natural resources that may have resulted from the remedial actions.
Resource-specific Primary Data Collection		
Soil and/or sediment data collection	• Collect soil and/or sediment samples to further document contaminant concentrations (e.g., to address any data gaps identified during the compilation of available information). • Evaluate samples, and other existing data, to help inform pathways, exposure, and potential natural resource injury resulting from releases of hazardous substances.	Depending on the findings from the <i>Compilation and Evaluation of Existing Information</i> assessment activities (listed above), the Trustees may determine the need to collect additional environmental soil or sediment samples. In the event of primary data collection, the Trustees would develop a sampling design (and any necessary Quality Assurance Project Plans) to target resources, contaminants, and geographic areas of concern. Data would be utilized to document complete pathways and/or to help determine and quantify natural resource injuries. For example, during assessment planning efforts, the Trustees identified a potential need for additional soil/sediment samples around the perimeter of the Site to fully delineate the extent of existing contamination. In addition, spatial data gaps exist in the available soil data, particularly near culturally significant areas such as Teakettle Mountain.
South Percolation Ponds Removal Action Area/North Channel of Flathead River	• Evaluate samples, and other existing data, to determine presence of hazardous substances remaining after the South Percolation Ponds removal action, including potential contamination in and along the floodplain of the northern channel of the Flathead River. • Collect sediment and porewater samples to further document contaminant concentrations in this area.	Samples collected after the removal action show exceedances of relevant screening levels in the porewater and surface water, suggesting there may be contamination remaining in this area. The Trustees view additional confirmation sampling as an obligation of response, but may consider additional sampling as appropriate if EPA, in consultation with DEQ, does not require additional sampling.
Macroinvertebrate toxicity study	• Evaluate effects of field-related contamination on biologically relevant endpoints (e.g., survival) for Site-specific benthic macroinvertebrates through laboratory bioassays.	Exposing benthic macroinvertebrates to Site-specific sediment can directly inform the severity and magnitude of contaminant-related injury to benthic invertebrates and confirm pathway of exposure to higher trophic level organisms (e.g., fish, birds). This activity may help the Trustees understand the severity and magnitude of effects of contaminants on the benthic invertebrate community and other biota.

Assessment Activity	Objective(s)	Description and Rationale
Groundwater data collection	- Conduct additional groundwater-related sampling to better understand discharge to surface water and/or current contaminant concentrations in groundwater. - Utilize any data collected to help evaluate pathway and the extent of potential groundwater injuries.	Depending on the findings, and any data gaps identified, through implementation of the <i>Compilation and Evaluation of Existing Information</i> assessment activities (listed above), the Trustees may determine the need to collect additional environmental data. This could include groundwater samples from established wells as well as hydrological data related to groundwater discharge zones (e.g., discharge rate from seeps) to better understand current and potential future conditions. The Trustees may also identify the need to measure contaminant concentrations in seeps samples. The Trustees would develop a sampling design to target physical measurements, contaminants, and geographic areas of concern, particularly associated with any identified data gaps. Data would be utilized to document complete pathways and/or to help determine and quantify natural resource injuries, such as the extent and magnitude of current and future groundwater injuries.
Biota data collection	- Conduct biota sampling to better understand contaminant concentrations in biological organisms. Data on biota exposure to contaminants would inform Trustees' understanding of the pathways and level of exposure and impact to biota. - Utilize any data collected to help evaluate exposure and the extent of potential biota injuries.	Depending on the findings from the <i>Compilation and Evaluation of Existing Information</i> assessment activities (listed above), the Trustees may determine the need to collect biological samples. For example, few direct measurements of contaminants in biological organisms (e.g., invertebrates, fish, birds, mammals) are currently available. The Trustees would develop a sampling design(s) to target specific species and geographic areas of concern, particularly those with any data gaps. Data on biota exposure to contaminants would be utilized to document complete pathways and/or to help determine and quantify natural resource injuries.
Laboratory toxicity studies	Evaluate effects of field-related contamination on biologically relevant endpoints (e.g., survival) on Site-specific organisms through laboratory bioassays.	Exposing organisms to Site-specific contaminated media can directly inform the severity and magnitude of contaminant-related injury to specific organisms or groups of organisms and confirm pathway of exposure to higher trophic level organisms (e.g., birds, fish). The Trustees may determine the need to evaluate the effects of field-related contamination on biologically relevant endpoints through laboratory studies.

Assessment Activity	Objective(s)	Description and Rationale
Injury Quantification		
Interim lost Cultural use assessment studies	- Conduct primary data collection efforts with CSKT tribal members to better understand potential adverse impacts to natural resource uses or values resulting from releases of hazardous substances from the Site. - Document natural resources and their services, CSKT uses and values for natural resources, and any adverse impacts, risks or perceptions of risks, to uses and values of natural resources.	This activity would build upon any findings and data gaps identified through implementation of the <i>Compile and review available information on tribal uses of natural resources and potential service losses</i> assessment activity (see above). To address data gaps, the Trustees may conduct interviews, surveys, or implement other similar efforts to collect information from CSKT tribal members. Goals may include identifying and documenting natural resources of importance to the CSKT and associated natural resource services, documenting the relationship between the CSKT tribal members and potentially injured natural resources, and documenting any risks or perceptions of risks associated with exposure to potentially injured natural resources.
Quantify ecological injuries and service losses	Rely on information and findings from previous assessment activities to quantify resource-specific lost ecological services, accounting for baseline.	To determine the type and scale of restoration actions required to compensate the public for natural resource losses, the Trustees need to understand the nature and extent of natural resource injuries and associated ecological service losses. This activity will involve utilizing outcomes from the previous assessment activities to quantify resource-specific injuries and ecological service losses, accounting for baseline conditions. Losses may be quantified for surface water, geologic, and biological resources.
Quantify groundwater injuries and service losses	Rely on information and findings from previous assessment activities to quantify groundwater-specific injuries and lost services, accounting for baseline.	To determine the type and scale of restoration actions required to compensate the public for groundwater resource losses, the Trustees need to understand the nature and extent of groundwater injuries and associated service losses. This activity will involve utilizing outcomes from the previous assessment activities to quantify groundwater injuries and losses, accounting for baseline conditions.
Quantify tribal service losses	Rely on information and findings from previous activities to determine and quantify natural resource injuries and associated tribal service losses relevant to the CSKT.	The Trustees would rely on information and findings from previous activities (including the <i>Compile and review available information on tribal uses of natural resources and potential service losses</i> and <i>Resource-specific Primary Data Collection</i> assessment activities) to complete this activity. As part of this activity, the Trustees would determine and quantify any adverse impacts to natural resources of relevance to the CSKT and document any associated tribal service losses resulting from the release(s) of hazardous substances from the site.
Quantify human use losses (e.g., recreational)	Rely on information and findings from previous assessment activities to quantify lost recreational trips and human use losses, accounting for baseline.	To determine the scale and type of restoration actions required to compensate the public for human use losses, the Trustees need to understand the scale and scope of injuries and human use service losses. This activity will involve utilizing outcomes from the previous assessment activities to quantify human use injuries and losses, accounting for baseline conditions.

Assessment Activity	Objective(s)	Description and Rationale
<i>Damages Determination and Restoration Planning</i>		
Identify restoration options and determine damages	- Identify restoration options to compensate for quantified losses. - Evaluate the cost of those restoration actions to estimate damages.	Based on the nature and extent of injuries quantified in previous steps, the Trustees will identify appropriate and relevant restoration options. Restoration actions will be scaled to compensate for the quantified losses and costs will be developed to estimate damages. The Trustees intend to utilize equivalency analyses and restoration-cost based approaches to determine damages.

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Appendix A | Quality Management Plan

This appendix documents the Trustees' quality assurance approach for the NRDAR. The CERCLA NRDAR regulations require that natural resource trustees develop a Quality Management Plan (QMP) that "satisfies the requirements listed in the National Contingency Plan and applicable [United States Environmental Protection Agency] guidelines for quality control and quality assurance plans" (43 C.F.R. § 11.31(c)(2)). As such, the purpose of this QMP is to document the Trustees' Quality Systems and provide a blueprint for how the Trustees will plan, implement, and assess their Quality Systems for NRDAR work performed by or on behalf of the Trustees.³ Consistent with EPA guidance (EPA 2002a), this QMP presents the organizational structure, functional responsibilities of management and staff, lines of authority, and required interfaces for those planning, implementing, and assessing all activities conducted under this NRDAR.

The Trustees intend to rely predominantly on existing (secondary) data but may develop project-specific quality assurance project plans (QAPPs), as applicable (e.g., for any assessment activities that entail the collection of primary data).

This guidance is driven by the need to (1) ensure consistency with any applicable federal and state-level quality assurance requirements, and (2) the need to collect any primary data in a manner suitable for generating litigation-quality data.

A.1 Data Management and Organization

A.1.1 Importance of Data Quality

The Trustees recognize the importance of data quality, given the many management decisions involved in accomplishing the NRDAR that require the use of environmental data, including analytical chemistry data, non-analytical environmental data (e.g., abundance, species diversity), and other related information. The collection, compilation, evaluation, and reporting of environmental data are necessary to perform the assessment. The Trustees must therefore properly document the origin and quality of the data used to make decisions so that data limitations may be identified, and assessments of the severity, location, and extent of injury are accurate. This assists the Trustees in making appropriate decisions regarding the type and scale of restoration actions necessary to compensate for natural resource injuries.

A.1.2 Quality System Description

The purpose of the Quality System is to ensure that environmental data and related information collected and used for the assessment are adequate to meet project goals. In particular, the Quality System identifies planning, acquisition, and review processes that are necessary to ensure the adequacy of collected data and information. One aim of the Quality System is to ensure that all available data have sufficient supporting documentation for data users to evaluate whether the data meet the needs of their intended use. This is achieved by ensuring that adequate quality assurance/quality control (QA/QC) tools are used throughout the entire data collection and assessment process (from initial planning through data usage). The tools that may be used in the Quality System include:

³ Serving as Trustees for natural resources in and around CFAC Site include, the Governor of the State of Montana, with the Montana NRDP acting as his representative, the CSKT, the DOI, acting through the USFWS and the Bureau of Indian Affairs, and the USDA (collectively referred to as "the Trustees").

- This QMP.
- Work plans including associated QAPPs that may be developed to support NRDAR activities.
- Standard Operating Procedures.
- Technical systems audits.
- Field and laboratory audits.
- Data verification and validation.

However, in the case of NRDARs, historical data may be relied upon to establish past conditions. Historical, or other data, may not always have sufficient supporting documentation. In these cases, the Trustees would describe any available supporting documentation, any limitations on the use(s) of the data, and any related uncertainties.

A.1.3 Goals and Objectives of the Quality System

The primary goal of this QMP is to ensure that all environmental data and related information relied upon in this NRDAR are scientifically valid for their intended use and/or that any uncertainties are documented. This QMP includes analyses that evaluate existing datasets as well as studies that generate new information.

With respect to the evaluation of existing data, the principal investigator (PI) for each analysis will carefully document the source(s) of all data, available information about QA/QC procedures used by the original investigator, and any data qualifiers or other information restricting application of the data.

This approach will also be applied to new data and analyses developed by federal and state agencies, academics, and information developed under the auspices of other activities or programs. For new studies that are specifically undertaken to support the NRDAR process, appropriate study-specific QAPPs will be developed according to the general principles described below.

Quality Assurance Project Plans

As noted in EPA 2002a, QAPPs will “vary according to the nature of the work being performed and the intended use of the data” and as such need to be tailored to match the specific data-gathering needs of a particular project (40 C.F.R. § 300.5). The NRDAR effort will likely entail a variety of different data-gathering efforts; therefore, it is not appropriate to develop a single QAPP to cover all these activities. Instead, the Trustees will ensure that individual study plans adequately address project-specific QA issues. The discussion in this document therefore focuses on the required elements of an acceptable study plan.

In general, a study-specific QAPP must provide sufficient detail to demonstrate that:

- The project’s technical and quality objectives are identified and agreed upon;
- The intended measurements, data generation, or data acquisition methods are appropriate for achieving project objectives;
- Assessment procedures are sufficient for confirming that data of the type and quality needed and expected are obtained; and
- Any limitations on the use of the data can be identified and documented (EPA 2002a).

Accordingly, study-specific QAPPs developed for this assessment will include the four elements called for by EPA:

- **Project Management** – Documents that the project has a defined goal(s), that the participants understand the goal(s) and the approach to be used, and that the planning outputs have been documented;

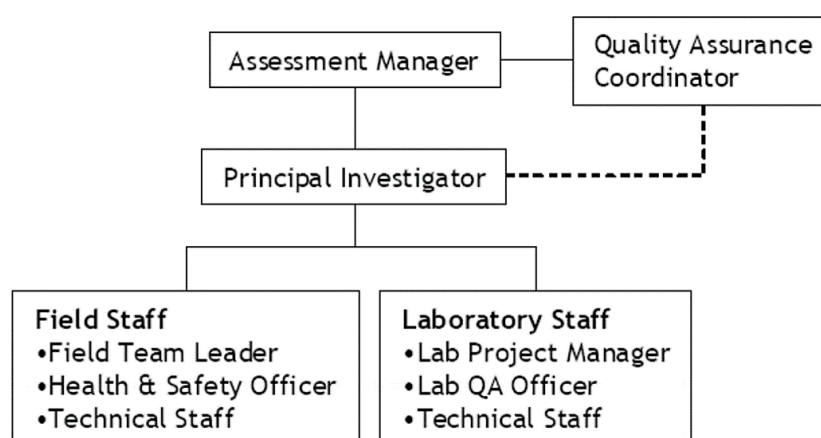
- **Data Generation and Acquisition** – Ensures that all aspects of project design and implementation including methods for sampling, measurement and analysis, data collection or generation, data compiling/handling, and QC activities are documented and employed;
- **Assessment and Oversight** – Assesses the effectiveness of the implementation of the project and associated QA and QC activities; and,
- **Data Validation and Usability** – Addresses the QA activities that occur after the data collection or generation phase of the project is completed.

A.2 Study Management and Personnel

A.2.1 Project Organization

Effective implementation of project objectives requires clear project organization, which includes carefully defining the roles and responsibilities of each project participant. Unambiguous personnel structures help ensure that each individual is aware of their specific areas of responsibility, as well as clarify internal lines of communication and authority, which are important for decision-making purposes as projects progress. Individuals' and organizations' roles and responsibilities may vary by study or task, but each person's role and responsibility should be clearly described in the project's study plan. Figure A-1. The NRDAR Personnel Plan below, presents a generic personnel plan for a NRDAR study as an example.

Figure A-1. NRDAR Personnel Plan



The **Assessment Manager** is the designated Trustee representative with responsibility for the review and acceptance of the project-specific study plan. This individual is also responsible for ensuring that the project's goals and design will meet the broader requirements of this NRDAR. The Assessment Manager coordinates efforts with the Quality Assurance Coordinator and oversees the PI for the study.

The **QA Coordinator** oversees the overall conduct of the quality system. Appointed by the Trustees, this individual's responsibilities include but are not limited to: reviewing/assisting the PI with the development of project-specific study plans; conducting audits and ensuring implementation of both project-specific and overall plans; archiving samples, data, and all documentation supporting the data in a secure and accessible form; and reporting to the Trustees. To ensure independence, the person serving as QA Coordinator will not serve as either the Assessment Manager or as a PI for any NRDAR study.

Study-specific PIs oversee the design and implementation of particular NRDAR studies. Each PI has the responsibility to ensure that all health, safety, and relevant QA requirements are met. If deviations from the

QAPP occur, the PI (or their designee) will document these deviations and report them to the Assessment Manager and the QA Coordinator.

The **Field Team Leader** supervises day-to-day field investigations, including sample collection, field observations, and field measurements. The Field Team Leader is generally responsible for ensuring compliance with all field quality assurance procedures defined in the study specific QAPP. Similarly, the Laboratory Project Manager is responsible for monitoring and documenting the quality of laboratory work. The Health & Safety Officer (who may also be the Field Team Leader) is responsible for ensuring adherence to specified safety protocols in the field.

A.2.2 Sharing Data, Split Samples, and Analytical Results

Section 11.31(a)(4) of 43 C.F.R. states, “The Assessment Plan shall contain procedures and schedules for sharing data, split samples, and results of analyses, when requested, with any identified potentially responsible parties and other natural resource trustees.”

If the Trustees determine that a study should be implemented, a study plan may be developed in collaboration with a PI and will be made available to the public. These study plans will discuss study objectives, approaches for sharing and publishing data and analytical results with relevant parties and the public, and conditions and procedures for sharing split samples with PRPs.

A.2.3 Data Generation and Acquisition

All studies under the direction of the Trustees that are specifically undertaken in support of the NRDAR will have a prepared QAPP that will be completed prior to the initiation of any work. These QAPPs will be submitted to, and approved by, the QA Coordinator or designee and generally include:

- Rationale for generating or acquiring the data;
- Proposed method(s) for generating or acquiring the data, including descriptions of (or references to) standard operating procedures for all sampling or data-generating methods and analytical methods;
- Types and numbers of samples required;
- Analyses to be performed;
- Sampling locations and frequencies;
- Sample handling and storage procedures;
- Chain-of-custody procedures;
- Data quality requirements (for instance, with respect to precision, accuracy, completeness, representativeness, comparability, and sensitivity);
- Description of the procedures to be used in determining if the data meet these requirements;
- Description of the interpretation techniques to be used, including statistical analyses; and
- Split sample protocols and procedures for archiving samples and management of residuals.

In addition, to the extent practicable, laboratories will be required to comply with laboratory best practices as applicable (e.g., EPA and/or DEQ best practices and QA protocols). This includes descriptions and documentation of maintenance, inspections of instruments, and acceptance testing of instruments, equipment, and their components, as well as the calibration of such equipment and the maintenance of all records relating to these exercises. Documentation to be included with the final report(s) from each study will include field logs for the collection or generation of the samples, chain of custody records, and other QA/QC documentation as applicable.

A.2.4 Assessment and Oversight

To ensure that the study plan for each project is implemented effectively, the QA Coordinator will review QAPPs for all Trustee studies that generate new environmental data. The QA Coordinator or designee will also audit all such studies. Audits will include technical system audits (e.g., evaluations of operations) as well as scrutinizing data and reports (e.g., evaluations of data quality and adequacy of documentation).

If, in the professional opinion of the QA Coordinator, the results of an audit indicate a compromise in the quality of the collection, generation, analysis, or interpretation of the data, the QA Coordinator has the authority to stop work by oral direction. Within two working days of this direction, the QA Coordinator will submit to the Trustees a written report describing the necessity for this direction. The Assessment Manager will consult with the Trustees regarding measures to be taken in response to the QA Coordinator's report.

A.2.5 Data Validation and Usability

In addition to the assessment and oversight activities described previously, analytical data may be considered for validation by an independent third party. Prompt validation of analytical data can assist the analyst or analytical facility in developing data that meet the requirements for precision and accuracy. If undertaken, it is expected that data validation will use the study-specific study plans, EPA Guidance on Environmental Verification and Validation (EPA 2002b), and any applicable DEQ guidance.

Appendix A References

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Appendix B Response to Comments

Response to Public Comments on the Draft Natural Resource Damage Assessment Plan for the Anaconda Aluminum Co. Columbia Falls Reduction Plant (Columbia Falls Aluminum) Superfund Site

Prepared by the Natural Resource Trustees
with assistance from
Industrial Economics, Incorporated (IEc)

February 2026

Introduction

From May 21, 2025, through July 23, 2025, the State of Montana Natural Resource Damage Program (NRDP), acting on behalf of the Governor of Montana, accepted public comment on behalf of the natural resource trustees (the “Trustees”) for the Draft Natural Resource Damage Assessment Plan (“Assessment Plan”) for the Anaconda Aluminum Company Columbia Falls Reduction Plant Superfund Site (the “Site”). The Trustees are the Governor of the State of Montana, the Confederated Salish and Kootenai Tribes (CSKT), the U.S. Department of the Interior (DOI), and the U.S. Department of Agriculture (collectively, the Trustees). NRDP advertised the public comment period in the Missoulian and Hungry Horse News and on NRDP’s website and sent it to NRDP’s mailing list. The public comment period was initially open for thirty-four days, from May 21 to June 23, 2025, and the Trustees granted a request for extension through July 23, 2025. The draft Assessment Plan was made available on NRDP’s website at: [NRDP Notices of Public Comment](#). In addition, copies of the Draft Plan were available at NRDP’s office (see address below). Information could also be obtained by calling NRDP at (406) 444-0205. Comments could be submitted via email to nrdp@mt.gov with the subject line, “CFAC Draft Assessment Plan.” Comments could also be submitted by mail at: Montana Natural Resource Damage Program 1720 9th Ave. P.O. Box 201425 Helena, MT 59620-1425. To be considered, comments had to be received by the deadline. The Trustees (through NRDP and CSKT) also held a public meeting at 6:00 PM on June 10, 2025, in Columbia Falls, Montana.

The Trustees received a total of ten comment letters during the public comment period. See Attachment A for a list of commenters and copies of the comment letters.

This response to comments summarizes the public comments received and provides the Trustees’ responses to those comments. Where appropriate, these comments were incorporated into the final Assessment Plan.

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Comments and Response

A. U.S. Lawsuit Against the Anaconda Company

1. Commenters 1, 6, and 7 provided information and a copy of the above-referenced lawsuit and settlement in 1980 between the United States and the Anaconda Company. Comment 3 corrected numbers provided in Comment 1. Comment 1 stated that United States Forest Service (USFS) lands on Teakettle Mountain that were allegedly damaged by fluoride emissions from the aluminum plant were swapped for 3,300 to 4,000 acres of Anaconda Company-owned timberland located up the North Fork of the Flathead River, in the Coal Creek drainage. Comments 6 and 7 stated that the settlement barred all United States natural resource damage claims on the USFS lands. Comments 6 and 7 made multiple statements about the lawsuit and concluded that the United States is barred from collecting any natural resource damages related to fluoride emissions.

Response: The 1980 settlement resolved certain claims related to fluoride deposition on specific USFS lands. The Federal Trustees retain authority under CERCLA (enacted in December 1980) however, to recover damages not encompassed within that settlement. The co-trustees, State of Montana and the CSKT, were not parties to that lawsuit and retain all authorities to recover for damages to resources and the services they provide within their trusteeship, which include, but are not limited to, groundwater, surface water, sediments, biological, and/or interim lost Tribal uses of natural resources. The State of Montana has similar authority under the Montana Comprehensive Environmental Cleanup and Responsibility Act (“CECRA”), Mont. Code Ann. § 75-10- 701, et seq.

B. Related to the Response Action (Cleanup)

2. Comment 2 stated support for the CERCLA response action at the Site. Comment 5 expressed disagreement with the CERCLA response action at the Site and asked multiple specific questions about the cleanup. Comments 8 and 10 also expressed concern with the cleanup, although they recognized that the Trustees do not have authority over the cleanup.

Response: The Trustees have noted these comments but reiterate that they have no authority over the cleanup (response actions) at the Site.

3. Comment 6 stated that the Assessment Plan should include a description of the remedy in Section 1.3.4.

Response: The Trustees have revised Section 1.3.4. to include a more in-depth description of the remedy.

4. Comment 10 stated that U.S. Environmental Protection Agency (EPA) said in public meetings regarding the Baseline Ecological Risk Assessment (BERA) they would not look at the health effects these organic chemicals may have had on humans or other animals. The commenter gave specific examples of health effects, such as cancer and dementia.

Response: The Trustees have no authority over the cleanup (response actions) at the Site. The regulatory agencies who issued the Record of Decision (ROD) at the Site (the final plan to clean up the Site) are EPA, in consultation with the Montana Department of Environmental Quality (DEQ). The cleanup — which is not the Trustees’ responsibility or authority — must be protective of human health and the environment. The natural resource damage assessment

— which is the process addressed in the draft Assessment Plan — must consider the results of the response action but has no ability to change the cleanup.

We recommend that the Commenter ask these questions directly of EPA and DEQ.

C. Assessment Activities and Data Used

5. Commenter 4 asked if the data to be reviewed and assessed will include the data collected by Roux Associates, which was hired by the potentially responsible party, Columbia Falls Aluminum Company/Glencore (CFAC). Comment 4 also asked who will perform the assessment and if additional data are collected, who will collect it.

Response: Yes, the data to be reviewed and assessed will include all relevant data collected for the response actions, including data collected by the potentially responsible parties (PRPs). The assessment will be performed by the trustee representatives (NRDP, CSKT, DOI, and the U.S. Department of Agriculture) along with NRDP's natural resource damage assessment and restoration (NRDAR) consultant, Industrial Economics, Inc. (IEc). Any additional sampling will be conducted by a trustee representative, such as the CSKT, or a contracted entity, who would be identified consistent with laws governing procurement of contractors.

6. Comment 10 requested that the Trustees not rely upon the information in the ROD and gave specific examples, such as there are 9 waste dumps, not 8; that EPA did not drill any wells to investigate the contents of the dumps; and that the contents and caps/lining of the waste dumps are different than described.

Response: The Record of Decision (ROD) is one of many remedial documents that the Trustees are relying upon to understand the history of contamination at the Site. Investigations at the Site have been conducted for decades, so these documents are relied upon in addition to other information sources as well as analytical chemistry data to provide a more thorough understanding of the nature and extent of contamination based on multiple lines of evidence.

7. Comment 10 noted multiple sources of aerial photographs and requested that the Trustees review these photographs to determine the extent of the contamination over the years.

Response: The Trustees will review all relevant information. Because the assessment activities need to be cost-effective, we may not be able to engage in the historic research described. We would welcome copies (with verified references to sources) for review.

8. Comment 9 expressed support for the assessment activities related to macroinvertebrates and biota because it is currently a data gap.

Response: The Trustees appreciate the comment in support.

9. Comment 9 supported collection of additional groundwater data to characterize discharge rates from seeps, better understand current and future groundwater conditions, and identify preferential pathways for movement of contaminants between groundwater and surface water.

Response: The Trustees appreciate the comment in support.

10. Comment 8 asked how the Trustees' analysis will consider long term drought and potential flooding events.

Response: Ongoing environmental conditions unrelated to releases of hazardous substances will be considered as part of the baseline condition of the natural resources being evaluated under the NRDAR. Natural resource injuries are quantified in terms of the reduction in the resource or resource services from the baseline condition as a result of the release of hazardous substances. See the “Baseline Conditions” section, Section D, below, as well as Section 4.4 of the Assessment Plan for additional information. To the extent that potential future environmental conditions can be reasonably foreseen, such as long-term drought or flooding events, these conditions would be considered as part of injury quantification, as well as in restoration planning to ensure selected restoration actions are sustainable.

11. Comment 8 asked what is meant by “best available information” regarding the remedial and restoration activities, natural attenuation, and resource recoverability. The Comment focused specifically on differences with EPA related to the performance of remedy, such as the slurry wall.

Response: The term “best available information,” as used in this paragraph, is referring to the need in the assessment to apply reasonable, informed assumptions about the future when making decisions in the present—in this case, specifically about how resources may or may not recover over time given what we know about selected remedies and the natural degradation (or not) of hazardous substances over time. Since the intent of the NRDAR process is to compensate the public for interim losses over time and any losses that persist after completion of the remedy, the Trustees will consider the likely long-term efficacy of specific remedial actions. Best available information thus will include whatever information is available to the Trustees at the time when assumptions about resource recovery are made, taking into consideration the quality of that information. If the information is not persuasive that resources will recover to baseline as a result of the remedy and/or through natural attenuation, then the Trustees may assume that the resource injuries are permanent, and the compensation for the public (i.e., resource restoration) will be appropriately scaled to this assumed loss.

12. Comment 8 asked if the assessment will use the information from the court case between Atlantic Richfield and CFAC.

Response: Yes. The Trustees reviewed this information and relied upon it for the Preassessment Screen and will use it for the assessment as appropriate.

13. Comment 8 stated that there has been no analysis of aquatic or terrestrial wildlife tissue. Comment 8 also referenced comments from the public meeting where attendees noted fluoride in cattle teeth and fluoride emissions on Teakettle Mountain.

Response: Correct, the Trustees are not aware of any tissue samples of any aquatic or terrestrial wildlife. As noted in the draft Assessment Plan, the Trustees will first evaluate whether there are sufficient data to assess the injuries assuming reasonable assumptions. If it is not possible to use existing data, the Trustees may collect additional data if it is cost-effective and the results would be useful to help determine and quantify natural resource injuries and associated damages.

The Trustees were provided information about fluoride in cattle teeth and will review this information as appropriate as part of the assessment. See response A.1 for a discussion of the lawsuit brought by the United States.

14. Comment 10 referenced multiple lawsuits in the 1960s and 1970s regarding air pollution that contaminated nearby property and changed the size of CFAC's site.

Response: See response A.1 for a discussion of the lawsuit brought by the United States. Regarding other lawsuits, the Trustees are not familiar with these and would welcome any additional information about releases of hazardous substances from the Site or related injuries to natural resources.

15. Comment 10 provided information about historic sources of contamination. This comment stated that the contamination is present on the property purchased by Ruiz and on the Wildlife Management Area across the river.

Response: The Trustees appreciate this information and will evaluate it, along with other available existing data, when determining the spatial extent of injury.

16. Comment 10 noted that benzo(a)pyrene should be included in the assessment.

Response: The Trustees agree. The list of contaminants in the Assessment Plan lists polycyclic aromatic hydrocarbons (PAHs) generally. Benzo(a)pyrene will be one of the PAHs evaluated.

17. Comment 10 stated that per- and polyfluoroalkyl substances (PFAS) should be included in the assessment.

Response: The Trustees agree that PFAS are a growing concern in Montana and nationwide. At present, PFAS have not been identified as contaminants of concern at the Site. The list of contaminants in the draft Assessment Plan is based on the Preassessment Screen, which identified cyanide, fluoride, PAHs, polychlorinated biphenyls (PCBs), arsenic, and other metals and metalloids as the primary substances associated with site operations. While aluminum smelting is not typically associated with PFAS use, some industrial coatings, lubricants, surfactants, and aqueous film-forming foams (AFFF) may contain PFAS compounds. Based on public comment and recognition that several fires have occurred at the Site, the Trustees have included PFAS as a potential contaminant of concern in the final Assessment Plan. Inclusion as a potential contaminant ensures that, should evidence of PFAS releases be identified during the assessment, the Trustees will evaluate potential exposure and injury consistent with 43 C.F.R. Part 11 (the CERCLA NRDAR Regulations).

18. Comment 6 stated that the Trustees' proposal to include yet more sampling, without considering that additional data will be collected pursuant to the ROD, will result in unreasonable and unnecessary costs.

Response: The Trustees do not intend to collect data that is duplicative of data already collected or to be collected for the response actions. The Trustees' first step will be conducting a data gaps analysis to determine what data and information, if any, are needed.

The Trustees agree with the Commenter that response data collected pursuant to the ROD could be useful in the natural resource damage assessment process. The utility of the response data collected pursuant to the ROD is dependent on the location of the sampling, timing, and sampling methodologies used, amongst other factors. Receiving draft sampling work plans for the Trustees to comment upon is important for being able to provide EPA, DEQ, and CFAC feedback as to whether the data being collected will also be usable for natural resource damage assessment purposes. Similarly, being able to be present during certain sampling

events (e.g., sampling of the seeps/Flathead River) is important for understanding whether the sampling is being done where one would expect to find contamination impacting/causing injury to Trustee resources, for example.

In acknowledgement of the benefit of being able to rely upon data to be collected pursuant to the ROD, the Trustees have sent letters and emails to EPA to ensure that we are coordinating any data collection with response and vice versa, as required by the National Contingency Plan. In the July 14, 2025, letter, the Trustees requested:

- i. A copy of all Site data that has been collected or otherwise added to the database since we received the spreadsheets from CFAC on May 9, 2024. We are particularly interested in the data from the seep sampling on June 17, 2025, including the field notes and photographs documenting the sample results, as well as the individuals (names and affiliations) present during the June 17 seep sampling if this is not already shown in the field notes;
- ii. Draft copies of all sampling work plans prior to finalizing them, so that we have time to provide feedback to EPA and DEQ;
- iii. That Trustees be informed of field visits for sampling, particularly as it relates to any surface water, seep, or post-removal action sampling with sufficient advanced notice that we may arrange to be present for the sampling; and
- iv. A copy of the scope of work for any additional pre-design investigations, including any work plans submitted through Unilateral Administrative Orders.

EPA agreed to provide Items 1 and 4 and has declined to provide Items 2 (draft sampling work plans) and 3 (inform the Trustees of sampling and allow us to be present). The Trustees have requested that EPA reconsider this determination, as coordination of these types of actions is required under CERCLA and the National Contingency Plan, and will help ensure that there is not a duplication of sampling efforts and that the data collected pursuant to the ROD can be relied upon by the Trustees.

The Trustees have also posed this same request to the PRPs at the Site, including Commenter 6, CFAC ([2025.09.19-Letter-to-Glencore-and-AR-re-Coordinating-Sampling-and-Field-Work.pdf](#)). CFAC declined to coordinate the response data collection with the Trustees ([CFAC-Response-to-NRDP-Site-Visit-Letter-rs.pdf](#)), and Commenter 7, Atlantic Richfield Company, indicated that Atlantic Richfield Company does not have control over the response action sampling at the Site ([AR-Response-to-Coordination-Request-rs.pdf](#)). Accordingly, the Trustees will need to evaluate the location of the sampling, timing, and sampling methodologies used to determine if the data collected is useful for NRDAR purposes.

19. Comment 8 asked how the potentially responsible parties' lack of cooperation in the assessment will affect the progress of the plan.

Response: Delays in receipt of data can make the assessment take longer and be more expensive. We continue to coordinate with EPA and the PRPs and expect that they will continue to fulfill their obligations to provide relevant data and to cooperate as requested. See response C.18, above, describing the history of the Trustees' requests for coordination on sampling and EPA's agreement to provide data but not agreeing to allow the Trustees to review draft work plans or be present during sampling, particularly sampling of the seeps and

surface water-groundwater interaction. The PRPs, CFAC and Atlantic Richfield Company, have similarly refused to coordinate on these aspects of the response data collection. See [CFAC-Response-to-NRDP-Site-Visit-Letter-rs.pdf](#). As noted above, the Trustees have requested that EPA reconsider its refusal, as coordination of these types of actions is required under CERCLA and the National Contingency Plan, and will help ensure that there is not a duplication of sampling efforts and that the data collected pursuant to the ROD can be relied upon by the Trustees.

Under CERCLA, PRPs are liable for the reasonable costs of the NRDAR and timely provision of data helps to minimize those costs. For an example of the increased level of effort due to lack of coordination, see NRDP's memo documenting the persistent coordination efforts taken to obtain response data at this Site at [2024.05.24-Columbia-Falls-Data-Request-Memo-and-Attachment-A-rs.pdf](#). Regardless of the level of PRP cooperation, the Trustees will proceed with implementing the Assessment Plan and carrying out the NRDAR process consistent with their statutory responsibilities.

20. Comment 6 stated the Assessment Plan does not provide the required detail for additional data collection according to Type B procedures.

Response: The Trustees respectfully disagree with the assertion that the draft Assessment Plan lacks the required detail under Type B procedures. Pursuant to the CERCLA NRDAR Regulations, the purpose of an Assessment Plan is to ensure that the assessment is performed in a planned and systematic manner and that proposed activities can be conducted at a reasonable cost. The draft Assessment Plan identifies potential assessment activities (see Chapter 6 and Table 6) consistent with this requirement. The Trustees note that detailed study designs and sampling protocols are not required at this stage but will be developed as needed to address identified data gaps.

If the Trustees determine that these are necessary, the individual study plans will be developed and made available for public review and comment.

21. Comment 6 stated that bis(2-ethylhexyl) phthalate should not be included in the list of identified chemicals.

Response: The remedial process is a separate process from the NRDAR. Although bis(2-ethylhexyl) phthalate may not have been considered in evaluating remedial alternatives, it is a hazardous substance that the Trustees may continue to evaluate as part of the NRDAR.

22. Comment 6 stated that Table 6 should include: a schedule for all assessment activities, detailed review of the ROD as part of compilation and evaluation of existing data, and detailed review of recently initiated further study of the River Area Decision Unit per the Short-Term Surface Water Quality Monitoring Scope of Work.

Response: The schedule for completing assessment activities will depend on several factors including the amount of available data to review and evaluate and the findings of the initial assessment activities. As noted in the draft Assessment Plan (Section 6.2), assessment activities may be implemented in a phased approach to ensure existing information is reviewed, and the findings of any initial assessment activities are determined, prior to any Trustee decisions regarding collecting new information or planning next steps. This will ensure the assessment makes the most use of existing information and is as cost-effective as possible. Further, not all assessment activities may be necessary after existing information is

evaluated. As such, the schedule will be determined and refined by the Trustees as they implement the assessment.

The first step the Trustees are likely to undertake in implementing the assessment is a thorough review and evaluation of existing information as noted above. This includes documents such as the ROD referred to in the comment. The NRDAR will include a detailed evaluation of the ROD, existing environmental characterization and sampling data, and any additional data collection activities, including the River Area Decision Unit sampling noted in the comment. Please see response C.18 above, for the Trustees' intent to coordinate with remedial actions and ensure cost-effective investigations.

D. Baseline Conditions

23. Comment 8 described baseline as 1981 conditions.

Response: The Trustees want to clarify that “baseline” refers to the condition that would have existed had the operations as an aluminum reduction facility not resulted in the release of any hazardous substances to the environment. CERCLA prohibits calculating damages for injuries prior to 1981 but does not limit baseline. The Trustees have added additional explanation in Section 4.4. of the Assessment Plan.

24. Comment 8 asked how the injured resources will be restored to baseline when EPA's proposed cleanup will take 35-60 years to return the groundwater to protective levels of contamination. The commenter also asked how this will be mitigated for in the next 35-60 years.

Response: The goal of remediation (overseen by EPA in consultation with DEQ) is to address unacceptable risk to human health and the environment. The remedy for the Site aims to reduce risk from groundwater in the short term by reducing human exposure to the contaminated groundwater through institutional controls prohibiting water use. According to EPA's evaluation, in the long term, capping the landfills and installing the slurry wall is expected to prevent future contamination of groundwater by containing the contaminant source. EPA expects that the existing groundwater plume will take multiple decades to naturally attenuate such that groundwater standards will be met in Site groundwater and surface water standards will be met in the seep area.

While the Trustees have no authority over the cleanup plan, the ultimate goal of natural resource damage assessment and restoration is to make the public whole for injuries to natural resources. This includes restoring those resources to their baseline conditions, when that is not achieved by the cleanup, and compensating the public for interim losses associated with those resource injuries. EPA expects the groundwater outside of the slurry wall to eventually be restored to its baseline condition through the implementation of the selected remedial actions. The Trustees' natural resource damage claim will encompass the entire time the groundwater is contaminated, and the public has experienced losses associated with that contamination. If it takes the remedy 35-60 years to achieve groundwater standards, the natural resource damage claim should include compensation for 35-60 years from implementation of the remedy (in addition to past losses back to 1981, in accordance with the promulgation of CERCLA in December 1980). The Trustees' assessment of the interim losses and compensable value will include an evaluation of the remedial actions and the expected recovery time for the groundwater. See response D.26 for a discussion of how the Trustees plan to determine recovery rates for groundwater.

25. Comment 7 stated that the assessment plan should have more specificity as to how baseline will be determined, because operations at the site began more than 70 years ago.

Response: As noted in Section 1.3.4 of the Assessment Plan, baseline is defined in CERCLA NRDAR Regulations as the “condition or conditions that would have existed at the Assessment Area had the discharge of oil or release of the hazardous substance under investigation not occurred” (43 C.F.R. § 11.14(e)). Baseline is thus not defined based on a specific moment in time but rather can change over time. For example, if development and expansion of the Site would have happened over time despite the release of hazardous substances, then those physical changes are considered part of the baseline condition. Given that the specific approaches for quantifying injuries to natural resources will be determined as information is gathered during the implementation of the assessment, the precise method for determining baseline will also be determined as the assessment activities are implemented. However, the baseline approach will adhere to the paradigm that baseline is the condition natural resources would be in had Site-specific conditions unrelated to the hazardous substances been present but operations had proceeded in such a way that hazardous substances were not released. In accordance with the CERCLA NRDAR Regulations at 43 C.F.R. Part 11, and more specifically with §11.72, the Trustees may use historical data and/or data from control areas, to establish baseline.

26. Comment 8 requests more information on how the NRDAR will estimate the recovery rates for resources (specifically groundwater).

Response: The specific approach the Trustees will use to estimate recovery rates for natural resources will be determined during implementation of the assessment as existing information is reviewed and evaluated. Recovery rates for natural resources may be determined through the evaluation of trends in environmental chemistry data, an understanding of remedial actions completed to date, and possible future actions and their anticipated efficacy.

27. Comment 6 stated that in Section 4.4, baseline should include that the Site was developed for industrial purposes; the Assessment Plan should explain how development will be factored into the injury assessments.

Response: Section 4.4 of the Assessment Plan has been revised to include additional language regarding the industrial nature of the Site. However, the approach for incorporating development will depend on the areas and matrices assessed, and the information available for evaluation. Specific approaches for incorporating baseline conditions will be determined as the assessment proceeds.

E. Questions About Any Future Settlement

28. Comment 8 asked how the PRPs will be held responsible for restoring the injured resources to their baseline condition.

Response: The Trustees have the authority to recover natural resource damages from PRPs pursuant to Section 107 of CERCLA, 42 U.S.C. § 9607. The Trustees plan to complete the natural resource damage assessment, fully quantify the injuries to natural resources and the services they have provided, and determine the appropriate damages so as to allow for resolution of the claim. Natural resource damage claims are often settled through a consent decree, although litigation can be a path to resolve a claim if settlement is unsuccessful.

The costs that can be recovered include, “damages for injury to, destruction of, or loss of natural resources, including the reasonable costs of assessing such injury, destruction, or loss resulting from such a release.” *Id.* The State of Montana has similar authority under the Montana Comprehensive Environmental Cleanup and Responsibility Act (“CECRA”), Mont. Code Ann. § 75-10- 715(2)(b). Costs recovered from the PRPs will be used to implement restoration projects that aim to restore the injured natural resources and the services they provide.

F. Geographic and Temporal Scope

29. Comment 8 noted “[T]rustees reserve the right to expand or further constrain its geographic scope,” and requested elaboration as to when this circumstance would arrive.

Response: As noted in the introductory text of Chapter 1 and in Section 1.7, the geographic scope of the Assessment Area is rooted in where hazardous substances have come to be located in the environment and where the direct and indirect impacts of those hazardous substances are identified. Thus, assessment activities will be based on delineating where those impacts occur, have occurred in the past, or would be expected to occur in the future. The public will have the ability to provide input on any more specific determinations related to geographic scope when additional NRDAR documents are made public for purposes of soliciting public input, including any specific work plans developed for the purposes of primary data collection and any restoration planning documents, such as Restoration and Compensation Determination Plans (RCDPs) or Restoration Plans.

30. Comment 8 asked how the area outside the site boundary will be evaluated in the NRDAR if the NRDAR is to rely on data published by EPA.

Response: Though the remedial process has generated a large body of analytical chemistry data, the Trustees intend to rely on all available data collected in and around the Site. In other words, additional historical data sources exist (e.g., historical Site documents, Forest Service reports) that may have potentially relevant data, which the Trustees intend to review further and would use in supplementing the existing data compilation. Once complete, the Trustees would assess the quality of available data records, identify data gaps, and evaluate data sufficiency for injury quantification purposes, including evaluating the need for primary data collection studies (see “Compile, review, and evaluate relevant contaminant chemistry data” in Table 6 of the Assessment Plan). If additional data is needed (e.g., outside the EPA-defined Site boundary), the Trustees would draft more specific study plans to support the collection of those data (see Section 6.2).

31. Comment 8 asked what the result would be of a permanent injury classification and how the public can be compensated for a permanent injury.

Response: The primary result of declaring a resource to be permanently injured would be that the NRDAR claim would include losses to that resource (or the component of the resource permanently injured) in perpetuity as part of the quantification of interim losses. To the extent that resources were permanently injured prior to the passage of CERCLA, it is also possible that such injuries may not be severable/divisible in time (before and after the implementation of CERCLA) so may be included in the NRDAR claim despite occurring wholly before the enactment of CERCLA.

32. Comment 8 requested that the assessment consider the impact on the groundwater plume of residential development of 2,000 acres adjacent to the former aluminum smelter and whether this could lead to migration of the plume.

Response: The Trustees appreciate being made aware of the planned residential development and potential for impacts on groundwater and will continue to monitor the situation as the assessment proceeds. While, as noted above, the Trustees have no authority over the cleanup plan, nor do they have any influence on local development decisions, any resulting documented changes to the extent of groundwater contamination caused by the development (e.g., caused by new groundwater wells, sumps, changes in impervious surfaces) may be considered in the injury quantification and damages determination process to the extent such information is available.

33. Comment 6 stated that the Site does not include Cedar Creek Reservoir or Teakettle Mountain; they should be excluded from the NRDAR.

Response: The Trustees recognize that EPA and CFAC have drawn the Site boundary to exclude Cedar Creek Reservoir and Teakettle Mountain. However, consistent with CERCLA and CECRA, and as noted in the Assessment Plan, the Assessment Area will include anywhere that the contamination from Site operations has come to be located.

34. Comment 6 stated that Figure 1 is labeled the Site and preliminary Assessment Area but the text describes the Site as anywhere contamination has come to be located. Figure 1 should be amended to include anywhere the Trustees anticipate assessing.

Response: The text of the Assessment Plan has been updated to clarify that Figure 1 depicts the EPA-defined Site only. As stated in Section 1.7, the “geographic scope of this assessment encompasses the 1,340 acres of the Site, as well as any areas surrounding, downstream, or downgradient of the Site that may have been contaminated by Site releases.” Further refinement of the Assessment Area will occur during the assessment as the Trustees evaluate the data available (or generated during the assessment) on the geographic scope of contamination with hazardous substances from CFAC operations.

G. Contaminant Pathways

35. Comment 8 noted that it is still unclear how the soil and other data will be linked to the groundwater plume that has been mobile for a number of years.

Response: The CERCLA NRDAR Regulations at 43 C.F.R. Part 11 address different resources including surface water, groundwater, geological, air, and biological resources; thus, the Trustees may assess injuries to any and all of these resources. Further, NRDAR allows for the assessment of interim losses that occur over time. Therefore, the Trustees will rely on historical environmental sampling of each of these distinct resources to develop an understanding of the full scope of natural resource injuries that have occurred, are occurring, or are expected to occur within the Assessment Area. To the extent that concentrations of hazardous substances in one resource are of sufficient concentration to cause injury to another resource, both resources are considered injured. Thus, for example, concentrations of hazardous substances in soils may be evaluated for their potential to cause injury to other resources, including groundwater. Consistent with 43 C.F.R. §§ 11.71, 11.83, and 11.84, care will be taken to avoid double counting of resource injuries when quantifying injuries and damages.

H. Assessment Methods

36. Comment 8 noted a resource equivalency analysis (REA) is a better method to determine injuries, specifically to bull trout and asked the Trustees to explain why a habitat equivalency analysis (HEA) is a better method.

Response: Selecting whether to use Habitat or Resource Equivalency Analysis approaches often depends on the relevant data available for a site and the restoration opportunities. The Trustees acknowledge that REA can be an appropriate method for quantifying injuries where the available data can be defensibly translated to lost organisms (e.g., acute contaminant spills) and the Trustees also wish to directly restore lost organisms. In this case, however, the available information on bull trout and other species is more effectively evaluated at the habitat level and the restoration alternatives that the Trustees anticipate considering are for habitat(s) that support bull trout. Accordingly, the Trustees propose to use HEA, which is a well-established and cost-effective method for translating resource losses into restoration requirements. HEA allows the Trustees to incorporate multiple injured resources, including surface water, riparian, and aquatic habitats that support bull trout and other species.

37. Comment 9 supported identification and quantification of losses specific to Tribal members.

Response: The Trustees appreciate the comment in support.

38. Comment 6 stated treating groundwater as an injured resource and as a pathway to surface water is double counting; the Trustees should identify services to be quantified in the groundwater REA versus services to be quantified in the habitat services HEA. The comment cites Dunford and Locke (2015) on groundwater damage determination.

Response: Natural resource services provided by habitats and biological resources in those habitats are distinctly separate from services that groundwater provides and their assessment will not lead to double recovery.

The commenter misunderstands the regulations regarding double recovery as well as the example that Dunford and Locke (2015) provide. First, the CERCLA NRDAR Regulations state “[t]here shall be no double recovery under this rule for damages or for assessment costs, that is, damages or assessment costs may only be recovered once, for the same discharge or release and natural resource, as set forth in section 107(f)(1) of CERCLA” (43 C.F.R. 11.15(d)). The regulations are clear that multiple resources can be assessed for the same release or discharge. It does not require that the terminal receptor be the only assessment endpoint. In other words, the Trustees are not restricted to only assessing the natural resource where the contamination ends up settling and resources that serve as pathways for contaminant transport may also be injured. Second, Dunford and Locke (2015) do not comment on double recovery at all. Rather, they provide an example of one way to assess natural resource injuries. This is not unlike any discharge to a waterbody, where the surface water itself may be injured, but also serves as a pathway to other resources, so the assessment may focus on sediment or biological tissues in addition to surface water to understand long-term adverse effects. The Trustees will determine how best to conduct the assessment during implementation.

Under baseline conditions, groundwater at the Site would have been able to provide a full suite of services. Under current conditions, groundwater cannot provide a full suite of

services. Exceedance of a promulgated standard is a per se injury under the regulations and will be assessed.

39. Comment 6 stated that drinking water services are not appropriate to assess, and the Trustees do not explain how an option price would be determined.

Response: Section 2.2.2 of the Plan that the commenter refers to provides an overview of groundwater services in general. It introduces the concept of services and that groundwater has value even if not in use. The Trustees are not suggesting a stated preference survey at this time. This section also introduces the idea of baseline services, in that this aquifer does provide quality water to nearby residents in its uncontaminated condition. It is important to note that states retain the rights to their groundwater resources even when surface ownership changes over time. This is important for a variety of reasons, including long-term stewardship of resources, such as maintaining quality riverine habitat, as well as long-term water supply planning. Drinking water services are one of many services that groundwater can provide. The Trustees intend to assess all relevant services during the NRDAR.

40. Comment 6 stated that the Assessment Plan should state in Section 1.3 how the Trustees will consider DOI's anticipated final rulemaking to modify Type A assessment procedures.

Response: The Trustees note that even if the Type A rule revisions are finalized, there is not currently a PRP who has agreed to a cooperative assessment. Further, the \$3 million cap as proposed by DOI would not allow for the revised Type A at this Site; NRDP supports an increase in the cap, as correctly noted by the Commenter.

41. Comment 6 stated that page 29 should state that the groundwater REA must characterize the baseline services and quantify the injured groundwater services.

Response: The CERCLA NRDAR Regulations state that “[w]ithin the area determined in paragraph (i)(2)(ii) of this section to be above baseline, the services provided by the ground water that is affected should be determined. This determination may include computation of the volume of water affected, volume of affected ground water pumped from wells, volume of affected ground water discharged to streams or lakes, or other appropriate measures” (43 C.F.R. 11.71(i)(4)(i)). Thus, the commenter misstates that the Trustees are required to *quantify* the amount of injured groundwater *services*. Rather, the Trustees can quantify the volume of impacted groundwater where contamination is found above baseline and is thus injured. In this context, “injury means a measurable adverse change, either long- or short-term, in the chemical or physical quality or the viability of a natural resource resulting either directly or indirectly from exposure to a discharge of oil or release of a hazardous substance, or exposure to a product of reactions resulting from the discharge of oil or release of a hazardous substance... Injury definitions applicable to specific resources are provided in § 11.62 of this part” (43 C.F.R. § 11.14(v)).

Finally, the Assessment Plan states the Assessment Phase includes the documentation of natural resource injuries and the quantification of the magnitude of injuries and service losses (e.g., see Section 1.3.2, introduction of Chapter 4, the “Quantify groundwater injuries and service losses” assessment activity in Chapter 6).

I. Injured Resources and Services

42. Comment 10 stated that the CSKT should be compensated for the water that was used from the Flathead, contaminated, and then placed back into the groundwater and river.

Response: The Trustees appreciate this suggestion. CSKT intends to undertake a comprehensive evaluation of injuries and service losses applicable to Tribal members and will look at injuries to all natural resources over which CSKT has trusteeship and the types of services they provide.

43. Comment 10 expressed concerns about the 2021 removal action not removing all of the contamination and infrastructure and creating a safety hazard. The Commenter stated that the entire river channel should be restored on the backside of the island.

Response: The Trustees recognize that the 2021 removal action did not address all of the contamination in the river channel and did not restore the entire river channel. The assessment will include this area. The Trustees do not have authority to address risk to human health but have passed this concern to EPA and DEQ.

44. Comment 7 stated that the assessment does not identify the services provided by injured resources to be assessed nor how such a determination will be made. Atlantic Richfield made similar comments on the Preassessment Screen.

Response: The Assessment Plan explains that the Assessment Phase includes the documentation of natural resource injuries and the quantification of the magnitude of injuries and service losses (e.g., see Section 1.3.2, introduction of Chapter 4, the “Quantify groundwater injuries and service losses” assessment activity in Chapter 6). To have the services documented in the Assessment Plan would be premature. However, the Trustees have provided some initial discussion of natural resources and services in the Preassessment Screen (Section 3.3) and in Chapter 2 of the Assessment Plan.

45. Comment 7 stated that the ROD states that the groundwater has not been used as drinking water and loss of the service of drinking water related to injured groundwater should not be assessed because if impacted groundwater has not historically been used as a drinking water source, there cannot have been a loss of drinking water services.

Response: An injury to groundwater and the loss use of the groundwater for drinking water has occurred if there are exceedances of water quality standards and the groundwater was potable before the release (43 C.F.R. §11.62). Part of the assessment will include determining baseline conditions and services, although as noted in the comment, residents do drink the groundwater at the adjacent Aluminum City. Additionally, several production wells historically pumped groundwater that was used for industrial operations and for potable water.

46. Comments 6 and 7 state that there has not been a lost recreational use of habitat since the effects of the facility have mostly been confined to private property. Comment 6 and 7 also stated more generally that the Trustees cannot recover damages for injuries and lost services located solely on private property (e.g., soil, plants, and habitat on private property). Atlantic Richfield and CFAC made similar comments on the Preassessment Screen.

Response: The Trustees disagree that the contamination has been limited to private property and will be assessing the potential injuries and lost services on natural resources over which

there is trusteeship. Geographically, these areas include locations where Site-related hazardous substances have come to be located, such as Teakettle Mountain, surface waters, including the Flathead River, and groundwater. The Trustees will not be attempting to recover damages for injuries to private property (e.g., soil, plants, and habitat on private property) or for recreational use of private property. However, injuries to biological resources using these habitats (e.g., nesting, feeding on prey items) and transiting the area, such as fish, wildlife, and migratory birds, are within the Trustees' jurisdiction regardless of land ownership. Additionally, the State of Montana retains trusteeship over groundwater regardless of land ownership. To the extent contamination on private lands adversely affects public resources, the Trustees maintain the right to pursue injuries and damages.

47. Comment 6 noted, “[a]s detailed in the Response Letter, an observational reference study completed by CFAC found that the extent of tree stands and vegetative growth on Teakettle Mountain is very similar to that observed on Stryker Ridge, 32 miles northwest of CFAC in a direction and at a distance that CFAC asserts would be outside the influence of air emissions from CFAC.” The comment states that because of this similarity, there is no lasting injury to flora on Teakettle Mountain.

Response: Based on correspondence with the Commenter (CFAC), the Trustees understand that this “observational reference study” consisted of CFAC’s visual evaluation of 2009 Google Earth imagery of Stryker Ridge and Teakettle Mountain, provided in CFAC’s response letter to the Preassessment Screen and Notice of Intent. The Trustees will consider this information when conducting the assessment, in addition to other available data pertaining to potential injuries from 1981 to present. However, the conclusions presented by CFAC based on this comparison rely on significant assumptions that may not be true (e.g., type and distribution of vegetation, quality of habitat, health of biota). Additional information besides the two Google Earth imageries would be needed to determine the accuracy of these conclusions and further evaluation will be needed to determine if Stryker Ridge is an appropriate reference area. See responses under section D for additional discussion regarding baseline and selection of reference areas.

J. Other Costs

48. Comment 10 stated that CFAC should pay for connecting the Aluminum City residents to city water if the city annexes these residents.

Response: The Trustees recognize that this is an impact to the residents and the commenter; however, this is not an injury to a natural resource or service that can be assessed. The referenced costs are related to local government procedures.

49. Comment 10 said that the assessment should include the costs to the county of CFAC disposing of 1 billion pounds of waste in four years in the county landfill.

Response: This is not a cost that is recoverable as part of natural resource damages. This is a private economic transaction between CFAC, and the county and this comment should be addressed to local government.

K. Preassessment Screen

50. Comment 7 incorporated Atlantic Richfield’s comments on the Preassessment Screen.

Response: The Preassessment Screen does not go through the public comment and review process. It is the first step the Trustees must complete to determine if a NRDAR is warranted and the document does not need to be revisited to continue with the assessment process. The final document was provided to the PRPs to facilitate the invitation to participate in the NRDAR, not for comment. As a courtesy to Commenters 6 and 7 and for the public, the Trustees have endeavored to note in these responses to comments where a comment is consistent with the letters the PRPs provided in response to the Trustees' Notice of Intent (which included the Preassessment Screen).

51. Comment 6 stated that the Preassessment Screen was flawed and the Trustees did not respond to their two comment letters articulating CFAC/Glencore's concerns with the Preassessment Screen. As part of their response letter to the Preassessment Screen, CFAC argued that readily available information was not considered in the Preassessment Screen and that the Preassessment Screen was too general. CFAC also objected to the identification of potential services to evaluate.

Response: "The preassessment screen is meant to be a rapid review of readily available information that allows the authorized official to make an early decision on whether a natural resource damage assessment can and should be performed" (43 C.F.R. § 11.13). It is not intended or expected to take the place of the assessment and go into significant detail on injured natural resources or the services they provide. It is also not put out for a formal public comment process that would require a response to comments. See response K.50 above.

52. Comment 6 stated that the Preassessment Screen did not address tribal cultural resources. The comment cites 43 C.F.R. § 11.25(e)(1) in support of this argument.

Response: See responses K.50 and K.51 above.

Since the CSKT were authors on the PAS, the PAS inherently includes their resources and uses of interest.

43 C.F.R. § 11.25(e)(1) specifically provides, "(e) Potentially affected resources. (1) Based upon the estimate of the areas of potential exposure, and the estimate of concentrations in those areas, the authorized official shall identify natural resources for which he may assert trusteeship that are potentially affected by the discharge or release. **This preliminary identification should be used to direct further investigations, but it is not intended to preclude consideration of other resources later found to be affected**" (emphasis added).

The Trustees also note that the Assessment Plan has been revised to refer to "interim lost cultural uses of natural resources" rather than "lost cultural use."

53. Comment 6 stated that the Preassessment Screen did not find that data could be obtained at reasonable cost related to tribal use of the resources.

Response: The Preassessment Screen, which included the CSKT as an author, concluded "[t]he Trustees expect that additional data collection to assess other trust resources and services can be conducted at reasonable cost, as defined in the regulations, and that these costs will be less than the anticipated damage amount" (p. 31). This includes resources over which CSKT have trusteeship. Additionally, the level of effort of primary studies can often be scaled such that the information required for the assessment can be collected at reasonable cost.

54. Comment 6 stated that the Assessment Plan does not consider ecological data collected for response and the NRDAR should not include fish or aquatic life in the Flathead River because data collected for the risk assessment showed no risk to these receptors. CFAC made a similar comment in its response letter to the Preassessment Screen.

Response: As stated throughout the Assessment Plan, the Trustees plan to evaluate and utilize the existing data (a cost-effective approach), which primarily consists of response data. The Trustees will be evaluating the data for purposes of the natural resource damage assessment, which is complementary but different from response. The response actions are required to be protective of human health and the environment but are not designed or intended to reduce hazardous substance concentrations to baseline (and instead only address unacceptable risk). In contrast, restoration is the residual of response and is intended to return the injured natural resources to baseline—or what the Site would have been like absent the releases of hazardous substances. Groundwater can help illustrate this difference. For example, if the lead agency for cleanup grants a technical impracticability waiver and contaminated groundwater is not in use and does not daylight at springs, the remedial process may conclude that there is no risk and therefore no cleanup required. However, under the CERCLA NRDAR Regulations, groundwater may still be injured, and the public may need to be compensated for that injury.

Additionally, the commenter misconstrues the findings of the BERA regarding risk in the Flathead River. In fact, the BERA found elevated (moderate) risk associated with direct contact to aquatic receptors within the Backwater Seep Sampling Area/Flathead River Riparian Channel, which was greatest for cyanide, barium, and aluminum in surface water and pore water (Roux 2020, p. 134). Though the attenuation of these contaminants with distance meant minimal risk in the main channel of the Flathead River, the BERA noted that further evaluation of chronic, direct contact exposure to cyanide in surface water and pore water in the Backwater Seep Sampling Area/Flathead River Riparian Channel may be warranted. The Trustees will conduct reasonable due diligence by evaluating potential injuries to aquatic resources during the assessment.

L. Timing of NRDAR

55. Comments 6 and 7 stated that the natural resource damage assessment is premature and the Trustees should defer the assessment until the mitigating effects of the remedy can be determined. Comments 6 and 7 also stated there will be little residual injury after implementation of the remedy. Atlantic Richfield and CFAC made a similar statement in response to the Preassessment Screen. CFAC asserted in its letter about the Preassessment Screen that the remedy will return the Site to baseline.

Response: The Trustees disagree that beginning an assessment prior to implementation of the remedy is premature. It is well-established practice to begin assessing the injuries concurrently (or even before) issuance of a ROD. See 40 C.F.R. § 300.430(b)(7). CERCLA does not require Trustees to delay assessment until a remedy has been implemented; rather, it only restricts the filing of a natural resource damages claim until a final remedy has been selected. The Trustees plan to carefully consider the impacts of the selected final remedy in quantifying the injuries. In addition, conducting the assessment in parallel with the remedial process ensures that the Trustees can coordinate with EPA, incorporate remedial actions into the damage determination, and avoid duplicative or inconsistent efforts.

The Trustees also disagree that there will be little residual injury remaining after the implementation of the remedy. This argument does not account for interim losses or injuries due to the remedy, i.e., (1) past injuries and service losses since 1981, (2) ongoing and future injuries that may persist until remedy construction and natural recovery are complete, and (3) potential impacts from the remedy, which can cause short- and long-term resource damages.

M. Trustee Costs

56. Comment 6 stated that the costs are unreasonable because there is not a Memorandum of Understanding (MOU) between the Trustees. Comment 6 also noted that the version of the Amendment to the MOU on NRDP's website was unsigned. CFAC had previously commented on the Preassessment Screen that there was not an MOU between the Trustees, which made it premature. Commenters 6 and 7 also stated that the Trustee costs are unreasonable for various reasons stated in their respective letters. Those individual comments are responded to elsewhere and will not be restated here.

Response: NRDP appreciates CFAC's note that the wrong version of the Amendment to the MOU was on NRDP's website. In response to CFAC's request for the administrative record, NRDP notified CFAC of the presence of the relevant documents on NRDP's website on June 9, 2025. The MOU Amendment has been corrected [here](#). It is also important to note that an MOU amongst trustees is not mandatory. As NRDP provided to CFAC's attorney on February 7, 2024, the Trustees had an MOU with the other Trustees for the Smurfit Superfund Site—where the Trustees have worked together for years—and were in the process of a simple amendment to add the CFAC Site to the existing agreement.

For the other comments on the Trustee costs, for the reasons stated in those responses, the Trustee and assessment costs are not unreasonable. Further, see the memorandum to the file written at the time documenting the difficulties involved in completing what should have been a simple task of obtaining the response data at this Site ([2024.05.24-Columbia-Falls-Data-Request-Memo-and-Attachment-A-rs.pdf](#)).

N. Coordination with PRPs

57. Comment 6 stated that NRDP hired a consultant for the NRDAR before consulting with CFAC and therefore precluded any meaningful cooperation between the Trustees and CFAC. CFAC requests that additional information be provided in the Assessment Plan about why they declined to participate. Further, CFAC indicated that the Trustees did not offer CFAC an opportunity to meaningfully participate in the assessment and alleged that the assessment was already underway when the Notice of Intent was sent to the PRPs in January 2024.

Response: Hiring a NRDAR consultant does not indicate an intent to not work with CFAC. Rather, evaluating the data is an initial step before beginning the assessment plan (regardless of cooperative agreement terms) and then costing out the entire process to complete the NRDAR are both standard practices. NRDP regularly amends the scopes of work in contracts and no assumptions should be drawn that each of these tasks would necessarily occur exactly as written. For example, if the Trustees settled the claim prior to performing a certain task or determined that the Trustees could perform a certain task using staff resources, that contracted work would not occur.

Trustees performing an assessment and a PRP funding the costs with the opportunity to confer and comment is consistent with other funding agreements. The approach the Trustees proposed to CFAC was consistent with a similar recent funding agreement with Montana Rail

Link for an assessment at the 2023 Reed Point asphalt spill. NRDP previously provided CFAC with the underlying agreement as an example cooperative funding agreement with the note that NRDP would provide the amendment once finalized. NRDP provided the amendment to this Montana Rail Link agreement to CFAC on April 12, 2024.

CFAC/Glencore's two letters (and Atlantic Richfield's letter) declining to participate in the assessment process can be found:

- [CFAC Response to NRDP Notice of Intent SIGNED.pdf](#)
- [Atlantic Richfield Response to NOI](#)
- [Columbia Falls Aluminum Company/Glencore Responses to NOI \(05-08-2024\)](#)

The Commenter is incorrect; the assessment was not underway in January 2024, as the draft Assessment Plan had not yet been started.

O. Public Participation

58. Comment 8 asked how public input would be considered/sought regarding changes in the geographic scope of the assessment and "permanent injury."

Response: The geographic scope is defined in the CERCLA NRDAR Regulations as: "... the area or areas within which natural resources have been affected directly or indirectly by the discharge of oil or release of a hazardous substance and that serves as the geographic basis for the injury assessment" (43 C.F.R. § 11.14(c)). As such, this scope will not change. However, as described in Section 1.5 of the draft Assessment Plan, the Trustees are committed to public participation throughout the NRDAR process. The Trustees anticipate releasing assessment updates to the public, which may include the review of significant changes to the Assessment Plan, any restoration plans, and proposed settlements (see Assessment Plan Sections 1.3 and 1.5).

See responses C.11 and F.31 above for additional information on how permanent injury is determined and evaluated.

59. Comment 6 stated that the Trustees' decision to decline to grant an additional request for extension of the public comment period through September 23, 2025, and instead allow the submittal of information outside the process designated in the rules corrupts the administrative record, limits transparency, and is inconsistent with Section 1.5 of the draft Assessment Plan and the NRDAR rules.

Response: The public participation requirement is a minimum process outlined under the CERCLA NRDAR regulations; the Trustees may voluntarily agree to additional public involvement as appropriate. As background, CFAC/Glencore requested an extension to the public comment period, which the Trustees granted, extending the deadline from June 23, 2025, to July 23, 2025. The Commenter is correct that the Trustees declined to grant a subsequent request for an extension on the Assessment Plan and had a call with the requesters to discuss the request. The Trustees' response letter can be found here: [2025.07.11 CFAC Letter re Request for Assessment Plan Comment Extension.pdf](#).

The Trustees have finalized the Assessment Plan following this public comment period and will not be significantly amending the Assessment Plan without additional opportunity for

public comment. The Trustees always retain the right and discretion to accept, evaluate, and consider all relevant information regarding the Anaconda Aluminum Co. Columbia Falls Reduction Plant in the performance of the assessment itself. This includes information provided by the public. We also welcome additional information from CFAC/Glencore and Atlantic Richfield and renew the request stated in an NRDP May 30, 2025, email: “[i]n your review of the database, if you note that CFAC/Glencore has more recent data that has not been provided to NRDP, we would appreciate it if CFAC could provide this data to us in a usable format, such as an Excel spreadsheet.”

P. Preliminary Estimate of Damages (PED)

60. Comment 6 stated a PED is not provided with the Assessment Plan; CFAC requests an explanation for why the PED was removed from IEC's task order and whether a PED has been developed and the anticipated timing of its public disclosure. Figure 2 in the Assessment Plan should include development of the PED.

Response: Consistent with the CERCLA NRDAR Regulations at 43 C.F.R. § 11.38, the Trustees are considering the potential natural resource damages resulting from releases of hazardous substances from Site operations to ensure assessment costs will be reasonable. NRDP determined that it was not necessary to contract with IEC for a PED because of internal Trustee resources available to perform this evaluation. Consistent with 43 C.F.R. § 11.38, the Trustees are “not required to disclose the preliminary estimate before the conclusion of the assessment.”

Q. Site History/Operations

61. Comment 6 stated that the Assessment Plan should summarize progressive reductions in fluoride emissions over time in the context of air pollution control regulations. The Commenter said that the Trustees should evaluate the information provided by CFAC in its previous letters and include it in the Assessment Plan.

Response: The Trustees have reviewed the information provided by Glencore/CFAC and included it in Section 1.2 (Table 1) as appropriate.

62. Comment 6 said that the Assessment Plan should be updated to reflect that CFAC sold 2400 acres to Ruis Construction in 2025.

Response: The Trustees have updated Section 1.2.

63. Comment 6 stated it is inaccurate to state there are “several” percolation ponds; two percolation ponds remain at the site and are currently dry.

Response: The Remedial Investigation, which is cited for this information in Section 1.2 of the Assessment Plan, notes that “water from Site operations and stormwater discharges to several percolation ponds,” and goes on to describe the north-east percolation pond, the north-west percolation pond, the west percolation pond, and the south percolation pond (which is a series of three ponds). The Proposed Plan (2023) also notes that process and stormwater was discharged to “several percolation ponds” (p. 3). The Assessment Plan has been updated in Section 1.2 to refer to these waters and their past discharge to the ponds.

64. Comment 6 stated that Table 1 should include plant shutdown and demolition and progressive improvements in air pollution control.

Response: The Trustees have revised Table 1 to include plant shutdown, demolition, and air pollution controls.

65. Comment 6 stated that Page 18 should be revised to state that 52 monitoring wells were added to the existing 20 monitoring wells.

Response: The Trustees have updated Section 2.1.2 of the Assessment Plan to reference “completion of 52 new monitoring wells (44 in Phase I and 8 in Phase II) to supplement the existing 20 wells.” (ROD, p. 3-15).

R. Early Restoration

66. Comment 6 stated that the Assessment Plan should describe the 2021 removal action as a project for early restoration consideration.

Response: The Trustees disagree with the assertion that the 2021 removal action should be described as an early restoration project. The 2021 action was a CERCLA removal action, conducted under EPA authority as part of the Site’s remedial process, not a NRDAR early restoration project.

Actions performed as response are also not early restoration. See the [South Percolation Ponds Removal Action Final Report](#). As discussed in this document, “[r]emoval Action activities described in this Final Report are separate from the RI/FS activities for the Site; however, Removal Action activities were conducted in a manner to be consistent with the final remedy for the entire Site and the National Contingency Plan (40 CFR §300 et. seq.).” The removal action will be considered, along with all other response actions, when quantifying injury and service losses. This ensures consistency with CERCLA NRDAR Regulations, which directs Trustees to account for remedial actions when determining the extent of natural resource damages.

S. Potential Conflict with CERCLA Response Documents

67. Comment 7 stated that the Assessment Plan conflicts with the CERCLA documents by assessing the Flathead River and the fish. The comment cites the ROD at pages 5-20: “[t]he remedial investigation . . . developed for the site under EPA direction [] show[s] that site-related contaminants do not contribute unacceptable risk to fish in the Flathead River.” Commenter 7, Atlantic Richfield, also made similar statements in response to the Preassessment Screen, stating that “adverse effects to natural resource at the CFAC Site, particularly for fish and wildlife using the Flathead River and Cedar Creek, also contradict the detailed findings in the RI/FS.”

Response: The Trustees disagree that the Assessment Plan conflicts with the CERCLA remedial documents. The Trustees note that the remedial actions and ROD are focused on identifying and addressing unacceptable risk to human health and the environment in accordance with CERCLA. The Trustees’ mandate under CERCLA and the CERCLA NRDAR Regulations is to assess and restore resources to their baseline condition and to compensate the public for interim service losses, which includes conditions residual of the cleanup. Further, the final remedy is prospective, while the natural resource damage assessment looks at the past impacts of the hazardous substances on natural resources and services (from 1981 on). EPA’s remedial actions and the Trustees’ NRDAR process are distinct but complementary processes.

Specifically, while the ROD concluded that “site-related contaminants do not contribute unacceptable risk to fish in the Flathead River,” NRDAR evaluates if releases of hazardous substances have caused a measurable adverse change to natural resources and associated service losses; injury determinations are not limited to the threshold of “unacceptable risk.” The Trustees will carefully consider the benefits or harm of the selected remedy in quantifying damages, but this does not preclude assessment of natural resource injuries that are outside the scope of EPA’s remedy.

68. Comment 6 stated that the RI and FS Work Plan do not support the statement on page 20 (Section 2.1.4) about number of species of concern and migratory bird species present in the Site area.

Response: The Trustees acknowledge the comment regarding the number of species of concern and migratory bird species referenced in Section 2.1.4. The information in the draft Assessment Plan was based on information in the Remedial Investigation and Feasibility work plan and the Remedial Investigation Report, which referenced publicly available sources, including the U.S. Fish and Wildlife Service Environmental Conservation Online System (ECOS), and Montana Fish, Wildlife and Parks data, which identify threatened, endangered, candidate, and species of concern in Flathead County, as well as migratory birds of concern with potential to occur in the Site area (see Tables 3–5 of the draft Assessment Plan). The Trustees have reviewed the cited Remedial Investigation and Feasibility Study work plan, Remedial Investigation Report, and cross-checked any discrepancies with the primary sources’ species lists. Section 2.1.4 was revised to correct data sources and the reported species information.

T. Alleged Damages Excluded from CERCLA Liability

69. Comments 6 and 7 stated that the assessment plan needs to identify how it will exclude damages related to a “release of a hazardous substance . . . occur[ing] wholly before enactment of CERCLA,” (43 C.F.R. § 11.24(b)(1)(ii)). Commenter 7, Atlantic Richfield, also included similar comments on the PAS.

Response: The Trustees have added the following language to Section 5.5 of the final Assessment Plan:

“The assessment must exclude damages related to a “release of a hazardous substance . . . occur[ing] wholly before enactment of CERCLA,” 43 C.F.R. § 11.24(b)(1)(ii). The term “release” means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous substance or pollutant or contaminant).” 42 U.S.C. § 9601(22). The term “environment” means “(A) the navigable waters, the waters of the contiguous zone, and the ocean waters of which the natural resources are under the exclusive management authority of the United States under the Magnuson-Stevens Fishery Conservation and Management Act [16 U.S.C. 1801 et seq.], and (B) any other surface water, ground water, drinking water supply, land surface or subsurface strata, or ambient air within the United States or under the jurisdiction of the United States.” 42 U.S.C. § 9601(8).”

The Trustees note that some releases act as ongoing sources, continuing to release contamination to the environment over time, despite the original release occurring prior to 1981. To be excluded under this section, a release and the associated injuries would need to

have occurred wholly prior to 1981. To determine whether any releases and injuries occurred wholly before 1981, the Trustees will look at available information on historical operations and releases. The Trustees will also consider any other appropriate information, such as data or modeling regarding the migration of hazardous substances from the Site into the environment. This information will be considered during all appropriate portions of the assessment, such as the evaluation of the pathways of the contamination.

Finally, damages are often calculated on an annual basis, and where damages are divisible pre- and post-1981, damages will be calculated for the years post the enactment of CERCLA (i.e., 1981 onward).

70. Comment 6 stated that on page 30 in Section 4.2, which discusses the time frame of injury, should acknowledge pre-CERCLA bar, permitted releases, and previous settlements. Commenter 7, Atlantic Richfield, also made similar statements on the PAS.

Response: The Trustees have added language to Section 5.5 discussing these issues. Please see responses T.69, T.70, and T.71.

71. Comments 6 and 7 stated that the assessment plan needs to identify how it will exclude damages resulting “from any other federally permitted release, as defined in section 101(10) of CERCLA.” 43 C.F.R. § 11.24(b)(1)(iv). This comment specifically identifies CFAC’s Montana Groundwater Pollution Control System permit issued in 1984, and a Montana Pollutant Discharge Elimination System (MPDES) permit issued in 1993. See ROD at 2-2 to 2-6.

Response: The 9th Circuit Case allocating liability between Commenters 6 and 7 did not find that any of the groundwater contamination was subject to this liability exclusion for “federally permitted releases.” See *Columbia Falls Aluminum Co., LLC v. Atlantic Richfield Co.*, No. 21-36042, United States Court of Appeals for the Ninth Circuit, judgment entered January 31, 2023, rehearing denied March 14, 2023. The Findings of Fact in the District Court Case between Commenters 6 and 7 acknowledged the existence of groundwater contamination prior to the issuance of the first MPDES permit in 1984, as well as the continued release and migration of the contamination following the termination of the MPDES permit in 2019. *Id.* at 37. In this discussion, the District Court did not distinguish or otherwise carve out any groundwater contamination that was excluded from CERCLA liability.

Although this case dealt with liability for response action costs (cleanup), this exclusion from liability is the same for response action liability as it is for natural resource damages liability. 42 U.S.C. §§ 9607(j) & 9601(10). In other words, the PRPs’ obligation to perform the cleanup under CERCLA is the same as the PRPs’ liability for natural resource damages under CERCLA.

As determined in the court case, the PRPs are liable (i.e., legally responsible) for performing the cleanup under CERCLA. The Trustees have not removed any portion of the groundwater contamination from the Plan because the groundwater contamination is co-mingled and currently not distinguishable.

The Trustees have added an explanation of the above information and the following language to Section 5.5 of the final Assessment Plan: “[t]hroughout the injury determination, injury quantification, and damages determination process, the Trustees will evaluate any damages

potentially excluded under sections 107 (f), (i), and (j) and 114(c) of CERCLA, as well as any relevant settlements. This will be an iterative process, with the Trustees continuing to evaluate damages calculations for any applicable exclusions and incorporate the findings at each step of the assessment.”

72. Comments 6 and 7 stated that the Assessment Plan needs to identify how it will exclude damages for injuries from air emissions subject to the exclusions for releases occurring wholly before the enactment of CERCLA (43 C.F.R § 11.24(b)(1)(ii)) and for federally permitted releases (43 C.F.R § 11.24(b)(1)(iv)); *see also Pakootas v. Teck Cominco Metals Ltd.*, 830 F.3d 975, 978 (9th Cir. 2016) (rejecting CERCLA liability for air emissions from a smelter). Atlantic Richfield and CFAC also included similar comments on the Preassessment Screen.

Response: The Assessment Plan already recognizes that the NRDAR will be conducted in accordance with CERCLA and applicable regulations, which include exclusions for injuries caused wholly prior to enactment of CERCLA and for Federally permitted releases. The Trustees will ensure that all applicable exclusions from liability are applied appropriately during the injury determination and quantification phases. However, it is important to note that the Administrative Record (e.g., Remedial Investigation, Preassessment Screen, and ROD) identified ongoing and post-1980 releases of hazardous substances through other pathways at the Site that are not barred by these exclusions.

U. Concerns about Residential Development

73. Comment 8 stated that the downstream assessment should consider current and future residential development. Comment 8 also expressed concern about contamination below the surface that would be released if construction occurs. Comment 8 asked if the assessment will consider damages and hazards to future residents. This comment specifically asked about assessing residential use of the groundwater.

Response: The Trustees understand the commenter’s concern and want to explain that the NRDAR does not assess the hazards/risks to future residents, nor does it evaluate risks to construction workers. The CERCLA remedy is required to be protective of human health and the environment and EPA, in consultation with DEQ, should be looking at the risk posed to construction workers and future residential use, including any potential use of the groundwater. NRDP has passed this concern, also raised at the June 10 public meeting, to EPA and DEQ.

The use of the groundwater for drinking water is a service of the natural resource that will be assessed as part of the NRDAR.

Attachment A

2025 Draft CFAC Assessment Plan Public Comments

No.	Individual/Association	City/Area
1	Richard Hanners	Columbia Falls, MT
2	Michael Shepard	Columbia Falls, MT
3	Richard Hanners	Columbia Falls MT
4	Richard Hanners	Columbia Falls, MT
5	Linda Christensen	Kalispell, MT
6	Jared Ragozine/Glencore	New York, NY
7	Nathan Block/Atlantic Richfield Co.	Houston, TX
8	Cameron Dexter/Citizens for a Better Flathead	Kalispell, MT
9	Andrew Gorder/Clark Fork Coalition	Missoula, MT
10	Sue Berube	MT

Comment #1

From: [Richard Hanners](#)
To: [Natural Resource Damage Program](#)
Subject: [EXTERNAL] CFAC Draft Assessment Plan
Date: Wednesday, May 28, 2025 1:13:08 PM

My name is Richard Hanners. I wrote the following letter in response to the Hungry Horse News' May 28 article on a draft Natural Resources Damage Assessment Plan for the former Columbia Falls Aluminum Co. plant. My letter provides more information about the government's attempt to settle damages to natural resources caused by the aluminum plant outside Columbia Falls. The full story is told in my online history project, at montana-aluminum.com [montana-aluminum.com], see Part V: The Pollution Problem, Chapters 38 and 39.

After about nine years of local lawsuits and investigations by government and academic scientists, the U.S. Department of Agriculture and the U.S. Department of the Interior filed a joint lawsuit against the Anaconda Aluminum Co. in U.S. District Court in Missoula on Nov. 3, 1978, claiming damages to land, trees and animals in Flathead National Forest and Glacier National Park. During this time, AAC was completing the smelter plant's \$45 million (1980 money) multi-year conversion to the Japanese Sumitomo pot design and Alcoa's Method 398 dry scrubber system, which successfully reduced fluoride emissions from as high as 10,000 pounds per day in 1969 to about 200 pounds per day in the early 1980s.

Important damage investigations for the plaintiffs were carried out by plant pathologists Clancy Gordon, at the University of Montana, and Clint Carlson, at the Forest Service in Missoula, and by personnel at Glacier Park. AAC received professional assistance from the Boyce Thompson Institute, an entomologist and a plant pathologist from the University of Utah and a veterinarian from Washington State University, among others. AAC also hired some very tough and very sophisticated attorneys - Carlson's deposition ran to nearly 900 pages and in places required advanced knowledge of statistical mathematics, and Gordon's extremist and expletive-strewn testimony in other aluminum plant lawsuits was used to discredit his work.

The federal lawsuit brought against the Anaconda Aluminum Co. came to a sudden end in 1980, but the circumstances behind the settlement were never reported in the media. Conventional wisdom was that the government had overwhelming evidence proving that fluoride emissions from the aluminum plant in Columbia Falls had damaged Forest Service trees, and that AAC had managed to comply with state fluoride emission standards by spending millions on new reduction cells and primary pollution control equipment. This version assumed that the Anaconda Company had given up defending its case, which didn't align with the giant mining company's historical legacy.

Much of the back story of the federal settlement was revealed in a "nonsecurity confidential" contemporaneous report that Glacier Park Superintendent Phillip Iversen wrote about a Feb. 5, 1980 meeting in Kalispell with 10 Forest Service officials and U.S. Attorney Ezra Rosenberg. "Discussion around the table indicated that the U.S. Attorney's Office feels the government case is a loser," Iversen stated in his report.

Rosenberg was concerned about upcoming testimony by plant pathologist John M. Skelly at Virginia Polytechnical Institute's Department of Plant Pathology and Physiology, which could discredit Carlson's work. "Anaconda is also aware that Dr. Clancy Gordon,

who did some of the research for the Environmental Protection Agency in Glacier National Park, was recently caught in an outright lie in court testimony,” Iversen reported. “The U.S. Attorney said he has never encountered a case where the judge gave such a serious reprimand to an expert witness. Dr. Gordon would probably be a government witness and his credibility has been seriously damaged. His bias has overcome logical arguments.”

The federal lawsuit was settled around August 1980, when terms were reached for a land exchange. The land exchange was based on the estimated value of the lands and not on an acre-for-acre basis. Lands acquired from the Anaconda Company were required to have wildlife, recreation and timber production values. Forest Service lands on Teakettle Mountain that were allegedly damaged by fluoride emissions from the aluminum plant were swapped for 3,300 to 4,000 acres of Anaconda Company-owned timberland located up the North Fork of the Flathead River, in the Coal Creek drainage. The Anaconda Company already owned much of the western side of Teakettle Mountain, but the land exchange consolidated nearby holdings on the west, southwest and southern slopes of the mountain. The federal lawsuit was dismissed with prejudice on Aug. 1, 1980.

Comment #2

From: [Michael Shepard](#)
To: [Natural Resource Damage Program](#)
Subject: [EXTERNAL] CFAC DRAFT ASSESSMENT PLAN
Date: Wednesday, June 4, 2025 3:49:27 PM

For 10 years...have advocated for a plan like we have come up with to date. In the long run..it will give the least amount of ground disturbance, while cleaning up the several bad areas using bentonite pits and lids to secure. PLEASE CONTINUE AS PLANNED..Michael Shepard..351 7th Ave East N , Columbia Falls mt 59912 phone CELL 406-250-9806

..

Comment #3

From: [Richard Hanners](#)
To: [Natural Resource Damage Program](#)
Subject: [EXTERNAL] CFAC Draft Assessment Plan
Date: Saturday, June 7, 2025 8:56:28 AM

My name is Richard Hanners. I sent you a comment on the draft plan and sent it by email to you on May 28, 2025. There is a single numerical error in that comment which I would like to correct. I stated:

"During this time, AAC was completing the smelter plant's \$45 million (1980 money) multi-year conversion to the Japanese Sumitomo pot design and Alcoa's Method 398 dry scrubber system, which successfully reduced fluoride emissions from as high as 10,000 pounds per day in 1969 to about 200 pounds per day in the early 1980s."

The number "200" should be changed to "800 to 900." Thanks for making the change.

--

Richard Hanners

Comment #4

From: Richard Hanners <rickhanners7@gmail.com>
Sent: Saturday, June 7, 2025 9:36 AM
To: Natural Resource Damage Program <nrdp@mt.gov>
Subject: [EXTERNAL] CFAC Draft Assessment Plan

My name is Richard Hanners. I have already sent you a comment and a clarification for that comment, and now I'd like to submit a few questions regarding the Summary of Proposed Assessment Activities table in your May 2025 Draft Natural Resource Damage Assessment Plan. Much of the proposed activities involves reviewing and assessing data that was already available. Does that include data gathered by Roux Associates, which was hired by Glencore, the current owner of the Superfund site, to prepare the remedial investigation and feasibility study for the Superfund cleanup? Who will do the work of reviewing and assessing data for the natural resources damage plan's trustees? The table's assessment activities also include obtaining additional soil, groundwater and surface water samples for analysis. Who will do that work? Will all of this work be done by government or contracted scientists? Can you provide more detailed information on who will do this work, including names of government agencies or contractors? Thank you.

--

Richard Hanners

Comment #5

From: [linda c](#)
To: [Natural Resource Damage Program](#)
Subject: [EXTERNAL] CFAC DRAFT ASSESSMENT PLAN
Date: Saturday, June 21, 2025 1:33:21 PM

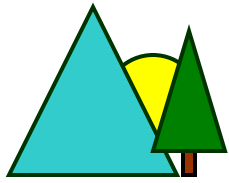
I am copying and pasting from a wonderful group in the Flathead Valley who is always looking out for our healthy environment in Montana. I worked at the Aluminum plant and I believe the clean up should be done properly. Also in light of the recent lawsuit regarding our clean and healthful environment as protected in Montana, I would think that you would follow suit and avoid future lawsuits. Please do what is best to protect our environment...

*I feel the **Columbia Falls Aluminum Company Superfund site [r20.rs6.net]** proposed cleanup plan, which includes leaving a massive volume of toxic waste in place without a plan for removal, or a plan for long-term full remediation of the Columbia Falls Aluminum Plant site, is an unacceptable clean-up plan. I urge you to give careful consideration to the numerous questions that are being raised during this comment period by former CFAC employees, organizations, scientists, and agency and local government officials. Consider these to be my questions as well.*

Please explain in more detail how leaving this toxic waste in place, despite all the questions being raised during this comment period and previously, will better protect the health, safety, and welfare of current and future generations of residents of the Flathead as well as the health of the Flathead River and Flathead Lake ecosystems? Leaving cost to the companies and government out of the evaluation criteria, how could that change the outcome of your recommendations for this cleanup proposal? Explain why costs factors have been given greater weight than the health, safety, and welfare of current and future generations of residents of the Flathead as well as the health of the Flathead River and Flathead Lake ecosystems?

Far greater removal of toxic waste was accomplished at the Milltown/Clark Fork River designated EPA Superfund site near Missoula, MT. Initial plans to contain waste on that site were abandoned and over 3-million tons of contaminated sediment were removed to a safer location far from the River. It is estimated in the recent CFAC clean up plan that there are 1.2 million cubic yards/1.3 million tons (a far smaller amount) of heavily contaminated waste that would need to still be moved from the CFAC site. Early stages of the CFAC cleanup site have already removed some 26,000 tons of pot liners containing cyanide and fluoride and another 2,750 tons of asbestos. If some removal from the site has already been accomplished why can't the remaining 1.3 million tons also be removed to an out of state landfill designed specifically for this purpose? Why was removal acceptable for the Milltown/Clark Fork River site and not the CFAC site?

Sincerely, Linda Christensen, former employee at CFAC



Columbia Falls Aluminum Company

July 22, 2025

Sent via e-mail to nrdp@mt.gov

Montana Natural Resource Damages Program (MNRDP)
1720 9th Ave.
P.O. Box 201425
Helena, MT 59620-1425

Re: Columbia Falls Aluminum Company (CFAC)
Comments on May 2025 CFAC Draft Assessment Plan

Dear Natural Resources Damages Trustees:

Thank you for the opportunity to provide comments on the May 2025 Anaconda Aluminum Co. Columbia Falls Reduction Plant (Columbia Falls Aluminum) Superfund Site (Site) Draft Natural Resource Damage Assessment (NRDA) Plan (the Plan). The following are CFAC's comments on the Plan:

General Comments

The Plan is based on a flawed Preassessment Screen.

On January 10, 2024, the Trustees, identified in Section 1.1 of the Plan, requested that CFAC participate in the NRDA process. After several discussions and the identification of multiple technical and legal deficiencies associated with the Preassessment Screen, CFAC declined to participate and articulated its reasoning in a letter dated March 8, 2024 (see attached Exhibit 1) (Response Letter) and in a follow-up letter dated May 8, 2024 (see attached Exhibit 2) (Follow-up Letter). The Trustees did not respond to the issues raised in either letter and instead moved forward with preparing the Plan. The Trustees' failure to consider or address the comments in the Response Letter and the Follow-up Letter – instead relying upon the deficient Preassessment Screen as the basis for the Plan – is unreasonable and will result in unrecoverable costs.

The NRDA is Premature.

Remediation at the Site is being overseen by the U.S. Environmental Protection Agency (EPA), with input from the Montana Department of Environmental Quality (DEQ). EPA released the Record of Decision (ROD) in January 2025 and selected the final remedy for the Site with an estimated cost exceeding \$57,000,000. This ROD is comprehensive and addresses all hazardous substances at the Site. Section 12.4 of the ROD identifies expected outcomes, which will

mitigate or totally remove the impacts on soils, sediments, groundwater, surface water and ecological resources.

The ROD also requires additional data collection as part of remedy implementation. The Plan itself acknowledges the importance of the ROD-directed data collection. For example, Table 6 identifies “additional confirmation sampling as an obligation of response” and this sampling occurs as part of the ROD remedy implementation. This underscores that the NRDA is premature and that the Trustees should not proceed with any assessment until the comprehensive response actions selected in the ROD have been implemented.

In addition, the U.S. Department of Interior (DOI) regulations in 43 C.F.R. Part 11 (NRDA rules) clearly provide that the benchmark for an assessment is the reliable quantification of *residual* injury remaining after implementation of a CERCLA response. Trustees may only recover calculated damages “based on injuries occurring from the onset of release through the recovery period, less any mitigation of those injuries by response actions taken or anticipated actions...” 43 C.F.R. § 11.15(a)(1). Again, this NRDA is premature because the CERCLA remedy for the Site has not been implemented and the mitigating effects of the \$57 million remedy will be significant. The Trustees’ failure to consider these mitigating effects will produce invalid determinations of residual injury and result in unrecoverable costs.

The Plan proposes the collection of data which may be duplicative and unnecessary.

Throughout the Plan, the Trustees reference the collection of additional data as part of the assessment. For example, in Table 6, the plan identifies the collection of “groundwater samples from established wells.” However, EPA’s ROD already includes the collection of additional data for the engineering design of the selected remedial components and for confirmation of the remedy. Appendix B to the ROD includes costs for pre-design investigation, confirmation sampling, monitoring well installation, groundwater monitoring, and analysis of surface water, sediment porewater and soil samples. The Trustees’ proposal to include yet more sampling, without considering that additional data to be collected pursuant to the ROD, will result in unreasonable and unnecessary costs.

The Federal Trustees are barred from pursuing any natural resource damages (NRD) arising from fluoride emissions at the Site.

On January 3, 1979, the United States filed an Amended Complaint against the Atlantic Richfield Company and the Anaconda Company (collectively referred to as “ARCO”) in the U.S. District Court of Montana, Missoula Division, Civil Action No 78-80-M. A copy of this Amended Complaint is attached as Exhibit 3. Paragraph 1 of the complaint seeks “damages and injunctive relief for injury and death caused to trees, plants, and other vegetation and wildlife in the Flathead National Forest and Glacier National Park ... caused by defendants’ past and continuing fluoride emissions from its Anaconda Aluminum Company plant near Columbia Falls, Montana.” The United States alleged not only damage to trees, vegetation, and wildlife, but also the loss of aesthetic and recreational value (see paragraph 15). The claims covered all the Flathead National Forest near the Site, including but not limited to Teakettle Mountain. The United States’ attorney acknowledged that it was bringing the action “as the trustee of the Flathead Forest and Glacier Park” (Hanners 2017b).

On June 30, 1980, the parties entered into a Settlement Agreement (attached hereto as Exhibit 4) which included the transfer of property from the defendants to the United States *or* the payment of \$75,000 (see paragraph 2). The parties also agreed to dismiss the action with prejudice and to execute a release of claims. In the General Release of Claims, attached as Exhibit C to the Settlement Agreement, the United States released the defendants “from all manner of actions and causes of action, suits and causes of suit, nuisances, trespasses, damages, charges, expenses, debts, dues, sums of money, covenants, contracts, agreements, promises, claims and demands of any kind or nature ... said United States hereafter *can, shall or may have by reason of emissions of the Anaconda Columbia Falls aluminum reduction plant at any time from the beginning of the world* up to and including the day and date of these presents” (emphasis added). Teakettle Mountain is specifically identified in the Settlement Agreement. On August 4, 1980, the Court entered the Order of Dismissal with Prejudice (attached hereto as Exhibit 5).

Section 1.2 of the Plan acknowledges the filing of the Amended Complaint but mistakenly refers to a “preliminary settlement” with terms “still being negotiated.” Clearly, there was a final settlement that released the federal government’s claims for all fluoride emissions from the aluminum plant. Further, the Plan indicates that the “exact terms of the settlement of the dispute are not known” but acknowledges the payment of \$75,000 made to the United States on July 26, 1982. This is the payment specifically identified in the Settlement Agreement.

The United States’ action for damages to trees, plants, and wildlife as well as losses for aesthetic and recreational value arising from fluoride emissions was fully resolved and dismissed with prejudice, and the terms of that settlement are expansive, including all causes of action “from the beginning of the world” and covering not only the named defendants but also their “successors and assigns.” Given the intent of the parties to execute a full resolution of all potential claims related to the aluminum plant, this settlement includes not only the Montana Aluminum Investor’s Corporation who succeeded ARCO’s ownership of the plant in 1985, but also CFAC, who succeeded Montana Aluminum Investor’s Corporation’s ownership of the plant in 1999. The final settlement and scope of releases, and the federal court’s dismissal of the action with prejudice, bars the federal Trustees from pursuing NRD at this Site arising from fluoride emissions and any associated costs these Trustees incur will be unrecoverable.

The Trustees have failed to clearly identify roles and responsibilities.

On January 10, 2024, the Trustees asserted trusteeship at the Site through a Notice of Intent to Perform a Natural Resource Damages Assessment (Notice). On February 6, 2024, CFAC requested the Inter-Trustee Memorandum of Understanding (MOU) for the Site and, on February 7, 2024, the Trustees advised CFAC that there was no MOU governing this Site. Given the scope of the Plan and complexities of this Site, the lack of an MOU for a proposed assessment involving multiple federal, state, and tribal entities suggested a failure to coordinate and limit duplicative and unnecessary costs. Both CERCLA and the NRDA rules require that assessment costs be reasonable and necessary. Proceeding with the NRDA at this Site without an MOU that clearly defines roles and responsibilities and minimizes duplicative efforts is unreasonable and will result in unrecoverable costs.

After CFAC raised the issue of an MOU, the Trustees may have attempted to address this clear oversight by amending an MOU that applied to two other sites to include this Site. While the

Trustees did not provide this amendment to CFAC despite its February 6, 2024, request, CFAC located an Amendment 1 on the MNRDP website. However, that document is unsigned so it is unclear whether the amendment has been executed. Regardless, initiating the assessment process and issuing a Preassessment Screen without an MOU in place suggests a lack of concern over costs and a failure to adequately plan and coordinate the assessment.

The Trustees do not have trusteeship over identified resources.

The Plan suggests that the assessment will include evaluation of natural resources within the 1,340-acre CFAC Plant boundary. This area is private property. Asserting trusteeship over private property conflicts with CERCLA, which provides for the recovery of damages only for injuries to natural resources “belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States ..., any State or local government, [or] any Indian tribe.” 42 U.S.C. § 9601(16). The Plan should identify those purely private property interests that are being excluded from assessment. Failing to do so will result in an overbroad assessment with resulting costs that are unreasonable and unnecessary.

The Trustees have failed to identify certain damages excluded by the NRDA rules.

The NRDA rules addressing the Preassessment Screen provide that certain alleged natural resource damages are excluded under CERCLA and the Clean Water Act. These exclusions are identified in 43 C.F.R. § 11.24(b) and (c) and include damages that result from permitted releases and those that occurred from the releases of hazardous substances that occurred wholly before the enactment of CERCLA on December 11, 1980.

ARCO commenced a fluoride emission reduction program in 1976 that achieved “significant reductions in emissions from its plant” (as acknowledged by the United States in the Settlement Agreement). Between 1976 and 1980, ARCO invested more than \$40 million (nominal) to modify operations and emissions controls that would reduce fluoride emissions and adhere to state standards. This work is referenced in the ROD, Sections 2.1 and 5.2.1.2, when discussing the installation of Sumitomo dry scrubbers. In addition, Table 1 of the Plan acknowledges that some wastewater discharges at the Site occurred pursuant to groundwater and surface water discharge permits issued beginning in 1984.

The NRDA rules, 43 C.F.R. § 11.24(b)(2), specifically direct that “[a]n assessment under this part shall not be continued for potential injuries meeting one or more of the criteria described in paragraph (b)(1) of this section, which are exceptions to liability provided in sections 107(f), (i), and (j) and 114(c) of CERCLA.” The Trustees have failed to identify the damages that meet the exclusion criteria, which mandate the cessation of the assessment for any potential injuries associated with those exclusions. Implementing an assessment without considering these exclusions is unreasonable and will result in unrecoverable costs.

CFAC points the Trustees again to information provided in the Response Letter regarding the timing and effect of fluoride emissions controls installed at the Facility before CERCLA enactment. Subsequent emissions were largely within permitted limits, suggesting that any injury to Teakettle Mountain would have occurred entirely before CERCLA or in an immeasurably *de minimis* quantity after CERCLA enactment. As detailed in the Response Letter, an observational reference study completed by CFAC found that the extent of tree stands and vegetative growth

on Teakettle Mountain is very similar to that observed on Stryker Ridge, 32 miles northwest of CFAC in a direction and at a distance that would be outside the influence of air emissions from CFAC. This similarity, despite the fact that Teakettle Mountain was entirely denuded of vegetation in the 1929 Half Moon Fire, indicates that there is no lasting injury to flora on Teakettle Mountain.

The Trustees foreclosed CFAC's meaningful participation in the assessment process.

CFAC received the Notice from the Trustees on January 10, 2024. That Notice provided CFAC with 30 days to indicate whether it intended to participate in the NRDA process. On January 30, 2024, CFAC requested an extension to allow it adequate time to evaluate the request and to meet with the Trustees to discuss the scope of the NRDA and clarify participation in the process. The Trustees provided CFAC with an additional 30 days to respond, until March 11, 2024. During this time, CFAC evaluated the Notice and Preassessment Screen to understand how the information in that screening document meshed with the other technical documents already generated at the Site under EPA oversight and authority. In addition, CFAC had a meeting with the Trustees on February 21, 2024 (Trustee meeting).

The Notice offered CFAC the “opportunity to participate in the development of the type and scope of Assessment Plan(s) and subsequently in the performance of the assessment” and invited CFAC “to enter into a cooperative assessment agreement with the Trustees.” One of the purposes of CFAC’s request for a meeting with the Trustees was to obtain clarity on performing the assessment and the terms of the referenced cooperative assessment agreement.

During the Trustee meeting, CFAC was shocked to learn that the Trustees, through the MNRDP, had already executed a task order with an outside consulting firm, Industrial Economics, Inc. (IEc), to conduct the NRDA. Further, the Trustees advised CFAC that its role in this process would be to pay for the already-contracted-for work and that CFAC would merely have an “opportunity to confer” in the development of a work plan. Following the meeting, CFAC requested a copy of the task order and discovered that the MNRDP and IEc signed Task Order 4 under NRDP Contract 500083 on February 13, 2024, retroactive to February 9. That task order included preparation of a data gaps analysis, preliminary estimate of damage (PED), draft and final assessment plans, the assessment itself, and other technical documents at a cost exceeding \$400,000, excluding any additional data collection that may be identified as part of the data gaps analysis. To find that this task order was executed by the MNRDP prior to the Trustee meeting, but after that meeting was already requested by CFAC and scheduled with a specific agenda item directed to CFAC’s desire for clarity on performing the assessment, rendered the Notice’s offer hollow and effectively negated CFAC’s ability to meaningfully participate in the NRDA process.

An offer to confer when the NRDA process is already underway is no “opportunity” for any meaningful input – it made the Trustees’ offer nothing but a box-checking exercise and is inconsistent with the NRDA rules that suggest a cooperative approach. By executing a task order with IEc to “prepare a preliminary estimate of damages and a data gaps analysis, develop and implement an Assessment Plan, and assist with developing a Restoration and Compensation Determination Plan and associated tasks” prior to the meeting, the Trustees effectively negated the Notice’s ostensible offer to CFAC to participate in developing the type and scope of the Plan and to subsequently perform the assessment. These actions violated 43 C.F.R. § 32(a)(2)(iii)(B),

which requires that the Trustees provide at least 30 days (with a reasonable extension) for the notified potentially responsible parties (PRPs) to “respond to the Notice *before proceeding with* the development of the Assessment Plan or *any other assessment actions*” (emphasis added). Executing a task order for the NRDA constitutes “other assessment actions” and it clearly occurred during CFAC’s response time. The Trustees’ insistence on continuing down this path is unreasonable and will result in unrecoverable costs.

In addition, the Plan’s blanket statement in Section 1.4 that “The PRPs declined to participate” does not provide the whole story to the public as to why the Trustees are conducting the assignment. CFAC has a history of cooperation at this Site with EPA and the remediation process, spending millions of dollars and collecting thousands of samples to carefully document the nature and extent of impacts at the Site. CFAC has likewise evaluated and engaged in cleanup efforts to ensure any impacts are mitigated or eliminated. CFAC has gone above and beyond what is required of any PRP both in terms of cooperation with the regulatory authorities and with the surrounding community, and it has been an excellent partner with EPA and the State of Montana. Despite being effectively cut out of the NRDA process, CFAC cooperatively and voluntarily provided the Trustees with data and other documents the Trustees requested during the Trustees’ development of the Plan. The Plan should include this information to provide an accurate picture on how and why CFAC “declined to participate” in the assessment process.

The Trustees are encouraging public involvement in the assessment process inconsistent with the NRDA rules.

During the public comment period on the Plan, two activist entities (Citizens for a Better Flathead and Coalition for a Clean CFAC) requested that the Trustees extend the public comment period until September 23, 2025. In a letter dated July 11, 2025, the Trustees declined to grant the request for an extension but indicated they “will continue to accept, consider, and evaluate information we receive from the public” through at least December 31, 2025. This approach is inconsistent with Section 1.5 of the Plan, which identifies the “additional opportunities for public participation” that do not include accepting information from the public outside the designated public comment period.

In addition, the NRDA rules identify how public participation in the Plan is to occur. Specifically, 43 C.F.R. §11.31(c)(1) provides that the Trustees “must make the Assessment Plan available for review by any identified potentially responsible parties, other natural resource trustees, other affected Federal or State agencies or Indian tribes, and any other interested member of the public for a period of at least 30 calendar days, with reasonable extensions granted as appropriate. *The authorized official may not perform any type B procedures described in the Assessment Plan until after this review period*” (emphasis added). The “review period” referenced in the rule is the public comment period which closes on July 23, 2025.

Further, 43 C.F.R. §11.31(c)(2) provides that “[a]ny comments concerning the Assessment Plan received from identified potentially responsible parties, other natural resource trustees, other affected Federal or State agencies or Indian tribes, and any other interested members of the public, *together with responses to those comments*, shall be included as part of the Report of Assessment” (emphasis added). In its July 11, 2025, letter, the Trustees reference a call between

Citizens for a Better Flathead, Coalition for a Clean CFAC, Mayre Flowers, and the Trustees on July 2, 2025, providing these select members of the public input into the assessment process during the established public comment period that was not provided to other members of the public, including CFAC. That July 11 letter encourages Citizens for a Better Flathead and Coalition for a Clean CFAC to submit information outside the designated review period, which ends July 23, 2025, while “we [the Trustees] move through this process.” In essence, the Trustees have unofficially extended the public comment period, which allows the Trustees to avoid responding to those comments (submitted in the form of “information”) in writing, while also continuing the assessment process. During the July 2, 2025, meeting with select members of the public, the Trustees also presumably accepted verbal comments, which require a written response. *See* 43 C.F.R. §11.31(c)(2).

The Trustees’ decision to sidestep the requested time extension and instead encourage the submittal of information outside the process designated in the rules corrupts the administrative record, limits transparency, and is inconsistent with the NRDA rules.

The Plan is inadequate for using type B assessment procedures.

Though the Trustees may conduct primary data collection, including sampling, to resolve data gaps in existing site-specific information, the descriptions in Table 6 of the Plan fail to provide what is required for type B assessment plans including “sample and survey design”, “numbers and types of samples to be collected”, and “preliminary determination of the [resource] recovery period.” *See* 43 C.F.R. §11.31(a)(2).

Table 6 describes the potential for additional environmental data relating to groundwater as follows:

This could include groundwater samples from established wells as well as hydrological data related to groundwater discharge zones (e.g., discharge rate from seeps) to better understand current and potential future conditions. The Trustees may also identify the need to measure contaminant concentrations in seeps samples. The Trustees would develop a sampling design to target physical measurements, contaminants, and geographic areas of concern, particularly associated with any identified data gaps.

The foregoing is deficient because (i) the number of groundwater samples to be collected from existing wells is not stated; (ii) the location, type, and number of “seep samples” to be collected is not stated; and (iii) the sampling design is not provided and therefore not available for public review and comment.

These same deficiencies are found among other potential sampling studies identified in Table 6:

For example, during assessment planning efforts, the Trustees identified a potential need for additional soil/sediment samples around the perimeter of the Site to fully delineate the extent of existing contamination. In addition, spatial data gaps exist in the available soil data, particularly near culturally significant areas such as Teakettle Mountain.

The foregoing passage is the limit of detail provided for this planned assessment effort. The extent of data gaps is not identified, the type and number of soil samples to be collected are not stated, nor are the sample or survey design provided. Such information is critical for assessing the cost-effectiveness of any assessment of Teakettle Mountain, whether for tribal losses or other services, considering that the significant reduction in annual fluoride emissions from the Facility coincided with CERCLA's establishment. *See* Response Letter, at 10-11, Figure 1, Figure 2a, Figure 2b.

As another example, Table 6 identifies a macroinvertebrate toxicity study exposing benthic macroinvertebrates to Site contaminant concentrations to “directly inform the severity and magnitude of contaminant-related injury to benthic invertebrates and confirm pathway of exposure to higher trophic level organisms (e.g., fish, birds).” The study is not conditional on the outcome of existing data, yet the specific assay methodology is not stated, as required, for evaluating whether it is cost-effective in comparison with applying *existing toxicity studies* for similar species to site-specific sediment sample data collected and assessed in the Site's 2019 Baseline Ecological Risk Assessment. *See* 43 C.F.R. §11.31(a)(2). Indeed, the Plan states, “although there are no promulgated sediment quality thresholds, thresholds indicative of measurable adverse changes to freshwater sediments, including thresholds indicative of likely harm to resident aquatic biota, are readily available in the peer reviewed literature, and may be used to establish injury.”

A PED is not provided with the Plan despite the NRDA rules stating, “when performing a type B assessment [...], the authorized official shall develop a preliminary estimate of: the anticipated costs of restoration, rehabilitation, replacement, and/or acquisition of equivalent resources for the injured natural resources; and the compensable value, [...], of the injured natural resources, *if the authorized official intends to include compensable value in the damage claim*” (emphasis added). *See* 43 C.F.R. §11.38(a). In addition, Task 1 of Task Order 4 required IEc to develop a PED as part of its development of this Plan. However, in September 2024, the MNRDP amended the task order and removed the requirement that IEc prepare a PED. The decision to remove the PED from the Plan is not mentioned nor explained.

CFAC requests that the Trustees explain the removal of the PED from Task Order 4 and further state whether a PED has been developed in full or in part and the anticipated timing of its public disclosure. *See* 43 C.F.R. §11.38(d)(3). This request is reasonable considering both (i) the breadth of existing site-specific data that the Trustees have already expended funds compiling into a “NRDAR Database”, and (ii) that Task 1 in the Scope of Work in MNRDP Contract 500083-TO 4 between the MNRDP and IEc originally provided:

Contractor will develop a preliminary estimate of damages (PED), conduct a data gaps analysis, and draft an Assessment Plan. A multi-resource PED will be developed with the option to focus on groundwater in the near-term, if requested by NRD.

The PED has inexplicably disappeared from the Plan, so either the Trustees do not intend to prepare one, the PED was prepared under another task and not disclosed to the public for review

and comment, or the Trustees have another alternative in mind. At a minimum, if the Trustees intend to include compensable value in the damage claim, Figure 2 should be revised to include PED development as a component of the Assessment Phase, since it is omitted from Figure 2 in the Plan.

The Preassessment Screen did not address tribal cultural uses as potentially affected nor did it determine that assessment data can be obtained at a reasonable cost.

Neither cultural resources nor tribal cultural uses are identified in the Preassessment Screen as potentially affected resources and services, as required by the NRDA rules. *See* 43 C.F.R. §11.24(e)(1) and 43 C.F.R. §11.25(e)(2). In its Response Letter, CFAC requested that the Trustees specify the “water use” services and the types of recreation potentially affected. *See* Response Letter, at 9-10. The Trustees did not address CFAC’s request, yet the Plan proposes to consider and evaluate the specific services provided to tribal communities to “ensure that the full range of natural resource services, and potential service losses, are investigated as part of this NRDAR.” Specifically, the Plan states “it may be necessary to describe and quantify natural resource injuries and service losses to CSKT tribal members separately from losses to the general public” considering the tribes’ unique connection with services provided. *See* Plan, at 22, 30.

One preliminary screening criteria is to determine that “data sufficient to pursue an assessment are readily available or are likely to be obtained at reasonable cost” as the term is defined in the statute. *See* 43 C.F.R. §11.23(e)(4) and 43 C.F.R. §11.14(ee). According to the Plan, the existence of data relating to tribal uses of potentially affected resources is unknown at best, and identifying even the potentially injured tribal services will require primary data collection:

*In this case, the Trustees anticipate compiling and reviewing **any** [emphasis added] existing information on natural resources utilized by CSKT tribal members, tribal values and services related to those natural resources, potential impacts from CFAC-related releases of hazardous substances, and **any** [emphasis added] sampling data related to resources of concern for the CSKT. After a review of available information, the Trustees will determine the need for additional data collection to inform any data gaps. Additional data collection may include conducting interviews, focus groups, or a similar approach to collecting information from tribal community members pertaining to tribal uses of natural resources and potential service losses experienced by tribal community members. data for injury quantification may require conducting stated preference surveys, interviews, and focus groups to resolve data gaps that may or may not exist. *See* Plan, at 30.*

At the same time, the Plan cites CKST’s connection to fish provisioning by the Flathead River through fishing rights held, cultural services by the biota and their habitats, and culturally significant areas of Teakettle Mountain. *See* Plan, at 22-24, 38. Conducting stated preference surveys, interviews, and focus groups can be costly and time-consuming when the extent of potentially injured services is unknown. Therefore, it is unclear whether data can be obtained at a reasonable cost such that any tribal use damages that are determined would exceed their assessment cost.

The Preassessment Screen is the foundation upon which the assessment is built. Because the Preassessment Screen did not address cultural resources or tribal cultural uses as potentially affected, those resources and uses cannot now be included in the NRDA.

The Plan fails to consider ecological data already collected under EPA oversight and authority.

Extensive remedial investigation and risk assessment efforts have taken place to assess exposure risks to fish populations in the Flathead River. Multiple lines of evidence were used to establish a conclusion of insignificant risk to fish from exposure to surface water, including Whole Effluent Toxicity (WET) testing and expert reports noting the lack of suitable nursing or spawning fish populations within the Backwater Seep Area. Even at 100% effluent, no toxicity was noted in the WET tests, which suggest that cyanide concentrations known to discharge to outfall 006 are not in a bioavailable form at concentrations that would pose a risk to resident fish or zooplankton populations. There is no impairment to the beneficial uses provided by the aquatic life within the River Area Decision Unit and subsequently the Flathead River. Additionally, free cyanide is known to biodegrade and is not known to bioaccumulate. *See* EPA (1985). Based on these chemical properties, it can be assumed that benthic organisms are even less sensitive than aquatic organisms found in the water column. Therefore, sediment toxicity would also not occur. Both CERCLA and the NRDA rules require that assessment costs be reasonable and necessary. Proceeding with an assessment for this pathway is duplicative and unreasonable and will result in unrecoverable costs.

The Plan does not explain how quantifying Site groundwater injury applying resource equivalency analysis (REA) avoids double-counting with ecological injury.

The Plan states that Site groundwater services include recharge of surface water and water purification. *See* Plan, at 18. In that capacity, Site groundwater is an injury pathway for surface water and sediments, and the biological resources dependent upon that habitat. The Plan even states that the Flathead River seep areas receive “cyanide groundwater.” *See* Plan, at 19. Double counting arises if the Trustees attempt to quantify both injured groundwater flows and injured aquatic habitat services exposed to contaminants through groundwater.

NRD practitioners recognize this exact type of double counting:

*The discharge of injured groundwater may injure other natural resources, in which case the groundwater serves as a pathway for contaminants. In those instances, **damages typically are based on the loss or impairment of the ecological and/or recreational services of the other natural resources** (emphasis added). For example, groundwater discharges of a hazardous substance into a river may result in the accumulation of the hazardous substance in fish tissues, which may lead to restrictions on the public's consumption of the fish. In this situation, the damage assessment would focus on the injuries to the fish, not on the groundwater, which is simply a pathway linking the release site to the injured fish. *See* Dunford and Locke, 2015, at 25.*

The Final Plan should explicitly identify the injured groundwater services to be directly quantified by applying REA from those to be indirectly quantified as injured habitat services applying habitat equivalency analysis (HEA). CFAC's request is reasonable considering the

Trustees' statement that double counting will be avoided, specifically through "evaluation of whether restoration scaled to the losses experienced by one resource will also compensate (fully or partially) for the losses associated with another injured resource." *See Plan*, at 33.

The Plan neither justifies the need to assess drinking water service losses nor adequately explains how an option price will be calculated explicitly for Site groundwater.

The Trustees imply that drinking water is an injured service provided by Site groundwater:

[i]mportantly, groundwater serves as the primary drinking water source for the closest residential community, Aluminum City, as well as for the City of Columbia Falls (EHS Support 2018b). See Plan, at 23.

That statement is misleading because Site groundwater flows toward the Flathead River, away from the cities' groundwater pumping zones. *See Plan*, at 18 and Response Letter, at 9. Despite extensive sampling, no testing has ever found Site contaminants above DEQ-7 water quality standards or other applicable thresholds in the cities' drinking water supplies. Therefore, the baseline condition is that Site groundwater does not impact existing public drinking water supplies. In addition, there is no evidence indicating that Site groundwater has impacted public drinking water supplies in the past. Therefore, there is no foundation for quantifying past and present drinking water service losses.

The Trustees state that Site groundwater provides water storage that mitigates drought, a condition that climate change may exacerbate in the future. *See Plan*, at 18. This is speculative and implies Site groundwater may serve as an optional drinking water source in the future. Even accepting that premise, the Trustees must acknowledge that the remedial actions specified in the ROD may return Site groundwater to its baseline condition before the time when it is ultimately needed to supplement local drinking water supplies, or to be used for any residential development on parcels acquired by Ruis Construction.

The Trustees acknowledge that the willingness to pay for potential future use would reflect an "option price." *See Plan*, at 18. Importantly, the option price of groundwater is significantly influenced by the probability of future demand and supply, i.e., that it will be needed. *See Edwards (1988)*. These are highly uncertain and theoretical factors due to the timing and magnitude of climate impacts highlighted in the Plan and the modest population growth of the City of Columbia Falls over the past 40 years. *See Response Letter*, at 9.

Specific Comments

Chapter 1. Introduction:

- Page 1: The Plan inaccurately states the Site includes the Cedar Creek Reservoir and Teakettle Mountain. Those features are not within the Site boundary established by EPA and these areas should be excluded from the assessment.
- Page 1: The Plan includes "phthalates" as a chemical attributable to releases from operations at the Site. As stated in the Feasibility Study approved by EPA, "it is noted in the Western Undeveloped Area that one isolated detection of bis(2-ethylhexyl) phthalate

in groundwater, at a concentration of 73 micrograms per liter (µg/L) at monitoring well CFMW-069 during the October 2018 sampling event, resulted in a calculated risk of 1E-05 for drinking water exposure under the hypothetical future residential scenario evaluated for this area. The prior sample collected at this location in June 2018 was non-detect, with a method detection limit (MDL) of 4.4 µg/L. Bis(2-ethylhexyl) phthalate is not a contaminant associated with historical operations at the Site, and it has not been identified at levels of concern anywhere on the Site. Given these factors and that bis(2-ethylhexyl) phthalate is recognized as a common field and lab contaminant (associated with plasticware), the calculated risk is overestimated and unrelated to Site-related contamination. Therefore, bis(2-ethylhexyl) phthalate is not carried forward for evaluation of remedial alternatives.” The Plan should remove phthalates from the list of identified chemicals.

Chapter 1.2 Site History:

- The Plan should summarize the progressive reductions in fluoride emissions over time in the context of the development of air pollution control regulation, consistent with the information and data CFAC previously provided to the Trustees. *See* Response Letter, 10-11, Figure 1, Figure 2a, Figure 2b. The Plan should reference published reports such as EPA-908/1-73-001 for emissions information rather than a website referencing unproven allegations from a lawsuit.
- Page 2: The Plan states CFAC’s total landholdings amount to approximately 3,196 acres. This statement is inaccurate and does not reflect the 2,400 acres that CFAC sold to Ruis Construction in early 2025.
- Page 4: The Plan states that there are “several percolation ponds (Roux 2020a).” This statement is inaccurate. Only two percolation ponds remain at the Site and with the cessation of manufacturing operations those ponds are dry.
- Table 1, which purportedly lists key events in CFAC’s Site history, neglects to mention the plant shutdown and demolition, and the progressive improvements in air pollution control at the Site throughout the latter 1970s and early 1980s.

Chapter 1.3 Overview of Natural Resource Damage Assessment and Restoration:

- CFAC requests that the Final Plan state how, if at all, the Trustees will consider DOI’s anticipated final rulemaking modifying the use of type A assessment procedures for hazardous substance sites. The January 2024 Proposed Rule sought to apply type A assessments at sites with anticipated damages of \$3 million or less. Many, including the MNRDP, called for eliminating the \$3 million (and others even called for increasing it to \$20 million) and applying the modified procedures to “well characterized sites.” *See* MNRDP (2024). Type A assessment procedures, as modified, will include application of methods such as REA and HEA usually reserved for type B assessments, but will use average values from existing studies and other available data to accelerate assessments and restoration.

Chapter 1.3.2 Assessment Phase:

- Page 10: The Plan explains that early restoration projects, those “undertaken or funded by a potentially responsible party” before the assessment is complete, may be considered

and result in credits or offsets applied to a party's NRD liability. However, the Plan does not identify the early restoration projects which may be eligible for credit. At a minimum, CFAC requests that the Final Plan describe CFAC's 2021 removal of the dam constructed in the 1960s that formed the South Percolation Ponds as one early restoration project for potential consideration. Removing the dam enabled the Flathead River to reclaim its former channel, thereby potentially increasing aquatic and transitional habitat and the associated services above the baseline condition. *See Response Letter, at 4.*

Chapter 1.3.4 Remediation versus Natural Resource Damage Assessment and Restoration:

- The Plan does not include a description of the remedy selected by EPA in the ROD. An understanding of the remedy and its anticipated effects on natural resources and services is critical to the NRDA process.

Chapter 1.4 Cooperation with Responsible Parties:

- As stated above, the Plan should be revised to include the Trustees' actions related to the Notice that resulted in CFAC not participating in this assessment as outlined herein and in attached Exhibits 1 and 2.

Chapter 1.7 Geographic and Temporal Scope of the Assessment:

- The Plan indicates that "any areas surrounding, downstream, or downgradient of the Site that may have been contaminated by Site releases" are within the geographic scope of the assessment. However, Figure 1 appearing in Chapter 1.2 depicts *only* the Site boundaries but is subsequently labeled in Chapter 1.7 as "the Site and preliminary Assessment Area." *See Plan, at 13.* The Plan proposes assessment activities to be carried out in areas that are outside of the area depicted in Figure 1. Specifically, Teakettle Mountain is mentioned throughout Table 6 in the context of compiling existing information and soil/sediment data collection. For the reasons stated above, evaluating injuries from the deposition of hazardous substances via air is barred by the Settlement Agreement and is also barred as a pre-CERCLA emission. If the Trustees go forward with assessing Teakettle Mountain, Figure 1 in the Final Plan should be revised to include the anticipated spatial extent of that assessment, however preliminary, and any other geographic areas outside of Figure 1 proposed for assessment.

Chapter 2.2.1 Groundwater Resources:

- Page 18: The Plan incorrectly states "[d]uring prior assessments of the Site, 44 monitoring wells were added to the existing 20 monitoring wells that were installed to evaluate groundwater quality in potential source areas (Roux 2020a)." It should state that 52 monitoring wells were added to the existing 20 monitoring wells.

Chapter 2.2.2 Biological Resources:

- Page 20: The Plan states "[a]s reported in Roux (2020), according to the USFWS Environmental Conservation Online System (ECOS) and the Montana Fish, Wildlife, and Parks (FWP), there are 37 Animal Species of Concern found in Flathead County (Table 4) and 19 migratory bird species of concern present within the Site area (Table 5)."

Neither the Remedial Investigation Report (Roux, 2020a) nor the Feasibility Study Work Plan (Roux, 2020b) support the numbers and types of species cited.

Chapter 4.2 Groundwater Losses:

- Page 29: The statement “for a groundwater REA, it will be necessary to characterize the baseline quality of the groundwater, quantify the amount of injured groundwater, and delineate the time frame of the injury” is highly misleading. An injury quantity does not equate to a loss in services being “the metric by which the benefits of natural resource may be quantified” according to the NRDA rules. *See Plan*, at 22. Thus, implementing a groundwater REA necessitates characterizing baseline **services** of the groundwater, and quantifying the amount of injured groundwater **services**.
- Page 30: In delineating the time frame of the injury, the Plan must acknowledge and identify the pre-CERCLA enactment bar, the permitted releases to surface and groundwater, and the Settlement Agreement’s comprehensive release terms, each of which require exclusions from the assessment.

Chapter 4.4 Accounting for Baseline in Injury Quantification:

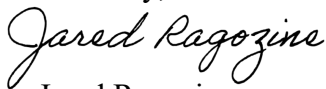
- The Plan states that the Trustees have not identified specific historical data applicable to establishing the Site baseline. The Plan should recognize that the Site was developed for industrial purposes which by itself affects the baseline condition of natural resources and services. The Plan should explain how such development will be factored into the injury assessments.

Chapter 6 Proposed Assessment Activities:

- The Plan should be revised to include a schedule for all the identified assessment activities outlined in Table 6.
- Table 6 should be revised to propose that a detailed review of the ROD will be conducted and considered as part of “Compilation and Evaluation of Existing Information.”
- Table 6 should be revised to propose that a detailed review of results from CFAC’s recently initiated further study of the River Area Decision Unit (i.e., former South Percolation Pond and Backwater Seep Area), predicated on a Short-Term Surface Water Quality Monitoring Scope of Work developed and requested by EPA and DEQ, be conducted as part of “Compilation and Evaluation of Existing Information.” It is an important assessment activity for preventing duplication of sampling efforts considering the Trustees cite potentially needing to “measure contaminant concentrations in seep samples.”

CFAC requests that the Trustees consider and respond to these comments before finalizing the Plan and moving forward with this assessment. In addition, please include this letter in the administrative record for the Site and provide a copy to the Trustee group.

Sincerely,

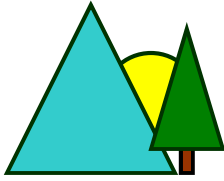

Jared Ragozine

Attachments:

- Exhibit 1: March 8, 2024, Letter from CFAC to the Trustees
- Exhibit 2: May 8, 2024, Letter from CFAC to the Trustees
- Exhibit 3: Amended Complaint, US v. ARCO
- Exhibit 4: Settlement Agreement, US v. ARCO
- Exhibit 5: Order of Dismissal with Prejudice, US v. ARCO

Additional References Cited Herein

- Dunford, R. W., Locke, W. W. (2015). A Framework for assessing groundwater damages from contamination. *Environmental Claims Journal*, 27(1), 19–39.
- Edwards, Steven F. (1988). Option prices for groundwater protection. *Journal of Environmental Economics and Management*, 15, 475–487.
- State of Montana Natural Resource Damage Program (MNRDP). (2024). Public Comment on RIN 1090–AB26.
- United States Environmental Protection Agency (EPA). (1985). Ambient water quality criteria for cyanide - 1984 (pp. 59 pp.). Washington, D.C.: U.S. Environmental Protection Agency, Office of Research and Development.



Columbia Falls Aluminum Company

Columbia Falls
Aluminum Company

EXHIBIT 1

exhibitsticker.com

March 8, 2024

Sent via e-mail to khausrath@mt.gov

Katherine Hausrath
Legal Counsel
Montana Natural Resource Damages Program
PO Box 201427
Helena, MT 59620

Re: Columbia Falls Aluminum Company CERCLA Site (Site)
Response to Notice of Intent to Perform a Natural Resource Damages Assessment

Dear Ms. Hausrath:

I am Glencore's in-house counsel responsible for the Columbia Falls Aluminum Company (CFAC) Site and primary contact person for Site-related communications with the Montana Natural Resource Damage (NRD) Program. CFAC received the Notice of Intent to Perform a Natural Resource Damages Assessment (Notice) and Preassessment Screen (PAS) from the NRD Program, along with federal and tribal natural resource damage Trustees, on January 10, 2024¹. That Notice provided CFAC with 30 days to indicate whether it intended to participate in the Natural Resource Damages Assessment (NRDA) process. On January 30, 2024, CFAC requested an extension to allow it adequate time to evaluate the request and to meet with the Trustees to discuss the scope of the NRDA and clarify participation in the process. The Trustees provided CFAC with an additional 30 days to respond, until March 11, 2024. During this time, CFAC obtained technical and legal experts from Roux Environmental Engineering and Geology, D.P.C. (Roux) and Doney Crowley P.C. to assist CFAC with evaluating the Notice and PAS, and to understand how the information in that screening document meshes with the other technical documents already generated at the Site. In addition, CFAC had a meeting with the Trustees on February 21, 2024 (Trustee meeting).

As you know, remediation at the CFAC Site is being overseen by the U.S. Environmental Protection Agency (EPA), with input from the Montana Department of Environmental Quality (MDEQ). CFAC signed an Administrative Order on Consent with EPA in November 2015, which required CFAC to prepare a Remedial Investigation (RI) and Feasibility Study (FS) in accordance with EPA guidelines and subject to EPA approval. CFAC completed the RI in

¹ The Notice was sent to CFAC, the Atlantic Richfield Company (AR), and Glencore Ltd. CFAC and AR are noticed potentially responsible parties (PRPs) at the Site, but Glencore is not. During the Trustee meeting, you confirmed that Glencore was identified in the Notice as a courtesy and that Glencore does not need to respond to the Notice.

February 2020 and the FS in June 2021, and both were approved by EPA. These two documents serve as technical support for EPA's Proposed Plan, which it issued in June 2023. EPA is expected to release the Record of Decision (ROD), selecting the final remedy for the Site, in March. Once EPA issues the ROD, it expects CFAC to voluntarily implement the selected remedy via another Administrative Order on Consent, with an expected price tag exceeding \$57,000,000.

Throughout this time, CFAC has been nothing but cooperative with EPA and the remediation process, spending millions of dollars and collecting thousands of samples to carefully document the nature and extent of impacts at the Site and to evaluate cleanup options to ensure any impacts are mitigated or eliminated. CFAC is committed to working with and investing in the local community and established a CFAC Community Liaison Panel to ensure the public has access to information about the Site and a forum for exchanging ideas and opinions about the Site. CFAC has gone above and beyond what is required of any PRP both in terms of cooperation with the regulatory authorities and with the surrounding community, and it has been an excellent partner with EPA and the State of Montana.

With this history of cooperation and given where the Site is in the CERCLA process, CFAC was surprised to receive the Notice triggering the NRDA process. Despite that surprise, CFAC approached the Notice in the same way it has addressed all requests that have been made of it – in the spirit of cooperation. CFAC moved quickly to obtain expert advice to analyze the PAS and meet with the Trustees to discuss CFAC's likely desire to participate in the NRDA process. CFAC is interested in collaborating with the Trustees so long as such collaboration can be performed in good faith by both sides.

Unfortunately, the Trustee meeting revealed that CFAC is not being given the opportunity to participate in the NRDA process as offered in the Notice, but rather is only being asked to foot the bill. In addition, CFAC has significant concerns that the PAS does not adequately address the criteria required by the NRDA rules. For the reasons described below, CFAC must decline to participate in the NRDA process as it was presented at the Trustee meeting. However, CFAC is willing to "participate in the development of the type and scope of Assessment Plan(s)" and to "enter into a cooperative assessment agreement with the Trustees" as the Trustees offered in the Notice.

As described in more detail below, this letter forms the basis for CFAC's response, and CFAC requests that the Trustees consider these comments and the commitment made by the Trustees in the Notice before moving forward with this NRDA process. In addition, CFAC concurs with the legal and technical comments made by AR in its February 12, 2024, response to the Notice.

NRDA is Premature.

The Notice identifies several Trustees and various bases for their assertions of trusteeship. In evaluating the PAS and to understand what was being asked of it in terms of a cooperative assessment agreement, CFAC requested the Inter-Trustee Memorandum of Understanding (MOU) for the Site. In an email dated February 7, 2024, you advised there is no MOU governing this Site. Given the scope of the PAS and complexities of this Site, the lack of an MOU suggests that initiation of the NRDA process is premature. Both CERCLA (42 U.S.C. §9607) and the

NRDA rule (43 C.F.R. §11.15) require that assessment costs be reasonable and necessary, and this includes the costs of performing the preassessment and related administrative costs. Proceeding with an NRDA at this Site without an MOU in place is unreasonable and has the potential to unnecessarily duplicate effort and increase costs.

In addition, initiating the NRDA process before the final remedy has been implemented, or even selected, is premature. EPA's June 2023 Proposed Plan signals that the ROD will be comprehensive and the selected remedy will effectively address the hazardous substances at the Site. Moving forward with an NRDA before EPA's final remedy selection, which will include an identification of the scope of remediation as well as any additional data collection that may be needed, is premature and has the potential to unnecessarily duplicate effort and increase costs. It also has the potential to delay implementation of the remedy and redevelopment efforts at the Site.

Deficiencies with Preassessment Screen.

CFAC has identified numerous deficiencies with the PAS and reserves the right to identify additional issues in the future.

The Trustees do not explain why the preferred remedial action will not remedy injury and return the Site resources and services to baseline conditions.

A preliminary determination must meet the criterion that response actions “do not or will not sufficiently remedy the injury to natural resources without further action” (43 C.F.R. §11.23(e)(5)). The PAS addresses this criterion with the conclusion that the preferred alternative will not return the Site to baseline:

EPA has issued a proposed plan for a final cleanup in 2023; the preferred alternative, however, will not return the Site to baseline. Rehabilitation, restoration, or replacement of natural resources is required to reduce future injuries and compensate the public for interim losses of natural resources and the services they provide.

This evaluation is inadequate. First, the Trustees fail to identify the specific injury remaining under the preferred remedial alternative. For example, the PAS cites exceedances of DEQ-7 standards as evidence of water resources injury and ignores that the same standards are included among chemical-specific applicable or relevant and appropriate requirements (ARARs) with which the proposed remedial alternative will comply.² Second, there is no comparison of resource conditions with response and baseline resource conditions.³ Characterizing the baseline condition requires “quantification of the condition of the resources and their services that would exist if the release or spill causing the injury had not happened.”⁴ The Trustees must identify the

² “All retained remedial alternatives would comply with state and federal chemical-specific ARARs identified in the feasibility study report (Roux 2021).” [Emphasis added]. See EPA 2023 Proposed Plan for the Site.

³ In fact, this passage is the only place outside of defining “Baseline Ecological Risk Assessment” where the word “baseline” appears in the PAS.

⁴ Bureau of Land Management (BLM) 2008. “BLM Natural Resource Damage Assessment and Restoration Handbook.” United State Department of the Interior, Bureau of Land Management (BLM 2008), at 48.

specific resources and reasons why the resource or its services remain below the baseline condition under the preferred remedial alternative.

The PAS states elsewhere, “potential natural resource injuries at the Site date back decades...” and further that the same “...have not been addressed, and the Trustees are unaware of any plan to address them.” This ignores that in 2021 CFAC removed both the impacted sediments that had accumulated in the South Percolation Ponds and the dam constructed in the 1960s creating the ponds. The dam removal enabled the Flathead River to reclaim its former channel, thereby potentially increasing aquatic and transitional habitat and the associated services above the baseline condition in perpetuity, amounting to early compensatory restoration for interim losses.

The Trustees do not adequately evaluate the damages exclusion criteria in the NRDA Rule.

The Trustees do not offer an adequate reason why damages associated with Site hazardous substances releases subject to (i) the MDHES groundwater discharge permit AR obtained in 1984, or (ii) the MPDES groundwater seep discharge permit CFAC obtained in 1994 do not meet Clean Water Act criteria for exclusion from damages (43 C.F.R. §11.24(c)(1)). The assessment must isolate and remove any injury and damages arising from permitted releases during the compliance period. The Trustees seemingly conclude otherwise:

The Trustees recognize that some of the releases resulted from a permitted release; however, the Court Case did not distinguish these releases when determining how to apportion liability and these releases are not distinguishable from the other releases of hazardous substances.

A judicial opinion does not relieve the Trustees from complying with the NRDA rules. The Trustees’ admission that permitted releases are not distinguishable from unpermitted releases causes CFAC concern that any assessment would ultimately seek to recover more than is authorized under the NRD rules (43 C.F.R. §11.24(b)(1)(i)) and result in costly litigation.

The PAS identifies air emissions as potential fluoride exposure pathways, including to terrestrial resources of Teakettle Mountain (TKM). However, as the PAS recognizes, facility emission controls changed beginning in 1976. Specifically, Anaconda Aluminum Company (AAC) installed Alcoa M398 dry scrubber technology and, furthermore, converted aluminum reduction cells to Sumitomo technology.⁵ As detailed subsequently, these modifications caused dramatic reductions in plant fluoride emission rates by 1980 compared to the previous two decades. Therefore, it is possible that any injury to TKM habitat occurred “wholly before enactment of CERCLA” and is therefore excluded from damages under 43 C.F.R. §11.24(b)(1)(ii).

The PAS also does not recognize that fluoride emissions were subject to MDEQ Air Quality Operating Permit #OP2655-05 issued as early as 2000 under Title V, requiring that “CFAC shall not cause the emission into the atmosphere from any existing primary aluminum reduction plant of any gasses which contain total fluorides in excess of 1.3 kg/Mg (2.6 lb/ton) of aluminum produced at Soderberg plants averaged over any calendar month.” The PAS fails to evaluate

⁵ MDEQ Technical Review Document, Permit #OP2655-05, Effective December 27, 2013 (MDEQ 2013).

whether the alleged damage resulted from permitted releases as required by 43 C.F.R. §11.24(b)(1)(iv).

The Trustees fail to carefully consider the readily available data when concluding certain resources and services warrant injury assessment.

The NRDA rules require that the PAS identify the resources potentially affected by the hazardous substance releases (43 C.F.R. 11.25(e)(1)), provide a preliminary estimate of the affected services (43 C.F.R. 11.25(e)(2), and establish that the quantity and concentration "...is sufficient to potentially cause injury..." (43 C.F.R. 11.23(e)(3)). The PAS identifies resources and services for which careful review of the readily available data clearly does not support further assessment.

A major concern is that the PAS seemingly identifies the main stem of the Flathead River and dependent biological resources as potentially affected and injured. The Trustees further stated during the Trustee meeting that the river stem was "obviously impacted."

For example, the PAS states in the Executive Summary:

*Aquatic resources that utilize surface water and sediment as habitat, including fish **within the Flathead River** and surrounding habitats, have been exposed to and potentially adversely affected by the releases.*

However, this conclusion ignores existing data and conclusions of the RI and Baseline Ecological Risk Assessment (BERA), both of which were approved by EPA. First, the RI documents that cyanide concentrations within the main stem of Flathead River are typically non-detectable (i.e., less than 2 ug/L). Second, habitat evaluation conducted as part of the BERA indicates the section of the Flathead River adjacent to the Site, which includes the Backwater Seep Sampling Area, has limited fish habitat for common species and is primarily used as a migration corridor to access areas of more suitable habitat. As a result, fish exposure to cyanide in surface water in the Backwater Seep Sampling Area is likely spatially limited near points of groundwater discharge and temporally limited to exposure during migration. Further, the lack of spawning or nursery habitat in the reach of the Flathead River near the Site limits exposure to early life stages that may have greater sensitivity to exposure. These findings are consistent with the MDEQ Statement of Basis that accompanied the 1999 MPDES Permit No. MT-00330066 (MDEQ 1999), which indicated that an area exceeding acute cyanide standards would not inhibit fish migration and that there were no impacts to spawning, nursery areas or attraction to cyanide within the mixing zone. Taken together, the above factors indicate it is highly unlikely that the Site had or is having an adverse impact on fish or the services provided. Thus, the inclusion of fish in the Flathead River as part of any future NRDA is unwarranted and inconsistent with the NRDA rules.⁶

The PAS further states in the Executive Summary:

⁶ BERA, 6.3.1.3

*Floodplain and terrestrial habitats **along the Flathead River** and migratory birds that use these habitats for breeding are also adversely affected by the releases.*

Again, this statement ignores the analysis within the BERA that indicates, using conservative assumptions, negligible or minimal potential risk to wildlife receptors (including migratory birds) using habitats along the Flathead River. In addition, the BERA concluded that adverse effects to semi-aquatic wildlife potentially foraging in or ingesting surface water exclusively in the Backwater Seep Sampling Area—an area CFAC distinguishes from the Flathead River main stem—are unlikely.⁷

The PAS identifies other Site surface water features as potentially exposed to hazardous substances without specifically stating whether the concentrations are sufficient to potentially cause injury. For example, the PAS states at Section 3.2:

There are exceedances of the DEQ-7 standards for contaminants, including cyanide, in Cedar Creek and the overflow ditch.

First, this statement is overly general because there are multiple DEQ-7 criteria, some applicable to human use and others to ecological services. Second, it ignores the BERA's evaluations of the contaminants of concern (COCs) that exceed ecological standards that indicates, based on conservative assumptions, negligible or minimal potential risk from exposure to the surface water and sediment in Cedar Creek and the overflow ditch; as well as the finding that some of the COCs in these areas (e.g., barium and manganese) are present at concentrations that are consistent with regional background conditions.⁸

The detailed evaluations of Cedar Creek and the overflow ditch are summarized in Section 8.4.2 of the RI as follows:

- Cedar Creek: “Potential risks associated with direct contact with surface water and sediment and wildlife ingestion pathways in Cedar Creek are considered to be negligible. Direct contact EPCs are generally below NOECs, with the exception of barium. However, barium concentrations in surface water and sediment porewater are consistent upgradient to downgradient, indicating that concentrations are representative of upgradient/background conditions. Potential exposure to wildlife foraging in Cedar Creek is not considered to exceed background exposure.”
- Overflow Ditch: “Risk estimates for the Cedar Creek Reservoir Overflow Ditch indicate minimal risks to ecological receptors under dry and inundated scenarios. During periods of inundation, direct contact risk associated with surface water and sediment in the Cedar Creek Reservoir Overflow Ditch is expected to be minimal. Some exceedances of NOECs and LOECs in sediment and surface water were noted; however, consideration of BTVs, concentration gradients, the low magnitude and frequency of exceedances, and other factors indicate that Site-related toxicity related to these constituents is unlikely.

⁷ BERA, 6.3.1.3.

⁸ BERA, 6.2.3.4 and 6.3.3.3.

For times of the year when inundation does not occur, direct contact risk to terrestrial organisms is expected to be negligible relative to background risk. Wildlife risks associated with direct and indirect ingestion pathways to exposure media within the Cedar Creek Reservoir Overflow Ditch were negligible. The small-range receptor evaluation indicated that a single sample in this exposure area had concentrations that exceeded only the NOAEL benchmark; however, no LOAEL-based benchmarks were exceeded. Therefore, no constituents in media associated with the Cedar Creek Reservoir Overflow Ditch are considered to be of concern for direct or indirect ingestion by wildlife receptors.”

The RI indicates that neither Cedar Creek nor the overflow ditch are groundwater discharge locations, as their stream bed elevations are well above groundwater levels and neither of these features were utilized by CFAC for discharge of process waters or wastewater. Thus, these are not viable pathways for transport of Site-related contaminants of potential concern (COPCs) to Cedar Creek or the overflow ditch.

CFAC is also concerned that the Trustees seek to perform unnecessary additional analysis of COCs during any future assessment, as the PAS seemingly implies that identification of additional injuries may result from further review of the data:

Hazardous or deleterious substances are present in the soil at levels that may cause injury. Approximately 40 chemicals were identified as contaminants of potential concern (Court Case) and additional review of site data may indicate additional exceedances and injuries to natural resources.

There is no reason why the PAS did not include this analysis when the COC sample data are readily available and the applicable thresholds are known. In addition, this statement ignores the rigorous nature of the screening process followed to identify COPCs during the RI/FS. This process included analyzing samples for a comprehensive list of hazardous substances and then selection of constituents as COPCs where maximum contaminant concentrations exceeded minimum human health and ecological based screening criteria. Therefore, it is extremely unlikely that additional analysis of Site data will reveal additional exceedances and injuries.

The PAS is unreasonably general when identifying potentially affected resources and services.

The PAS uses unreasonably broad terminology when considering the robust COC fate and transport, analyte background screening, COC concentration, and risk data that are detailed spatially by resource and habitat type. CFAC is concerned these generalizations may lead to an assessment of resources and services for which there is minimal probability of making a successful claim as required by the NRDA rule (43 C.F.R. §11.23(b)).

For example, the PAS states in the Executive Summary:

Surface water concentrations of fluoride, benzo(a)pyrene, arsenic, and barium also exceed ecological screening values.

In fact, there are multiple distinct surface water features at the Site. Fluoride concentrations do not exceed minimum ecological screening values (ESVs) in the Flathead River outside of the Backwater Seep Sampling Area and are undetectable at many sample locations therein. Arsenic, benzo(a)pyrene, and barium are neither Site-related contaminants nor exceed minimum ESVs in the Flathead River main stem. Arsenic in surface water is retained as a Site-related COPC only in the Cedar Creek Overflow Ditch (and only in dissolved form) where the BERA concludes that the risk to ecological receptors is negligible or minimal.

Another example of the lack of specificity in the PAS is found in Table 4: “Summary of Risk to Biological Receptors Posed by Contaminants of Concern.” That table summarizes risk for a *type of exposure area* (i.e., terrestrial, transitional, aquatic) thereby conveying that the stated analyte risk is broadly applicable to each of the many distinct exposure areas of the same habitat type. However, Tables 8-1, 8-2, 8-3, and 8-4 of the BERA summarize risk for receptors and analytes in each distinct habitat exposure area within the Site, exposure scenario, and type of exposure. Whereas PAS Table 4 labels “high” risk to biological receptors in transitional habitat—of which there are four distinct Site exposure areas—Table 8-2 demonstrates that only the North Percolation Ponds poses high risk. Table 4 is too general to meaningfully guide future investigations, as the NRDA rule intends (43 C.F.R. §11.25(e)(1)), and the Trustees should disaggregate the data before identifying potentially affected habitat exposure areas.

CFAC acknowledges the BERA findings referenced in the foregoing do not equate to NRDA findings, as the Trustees stated during the Trustee meeting. Though NRDA must quantify the amount of injury, including historically, for determining the amount of restoration, BERA typically applies highly conservative assumptions to ensure that any remedial action goals are prospectively protective of ecological resources. Thus, the BERA’s findings of negligible or minimal ecological risk indicate that any restoration amounts would be similarly negligible or minimal if current exposure quantity and concentrations are representative of past amounts.

Identification of potentially affected services is inadequate for meeting the intended purpose in the NRDA Rule.

The Trustees’ conclusion that “ecological services (e.g., habitat for biota)” are potentially affected (Section 3.3 and 4.2) is not meaningful and is unreasonably general. “Ecological services” is a classification of services, whereas services are defined as “physical and biological functions performed by the resource...” (43 C.F.R. §11.14(nn)) and the BERA addressed multiple habitat areas within and connected to the Site. The insufficiencies in this PAS are highlighted when compared to preassessment screening documents for other sites. For example, the Smurfit-Stone/Frenchtown Mill Site PAS identifies specific habitat services including, “...foraging, shelter, breeding, and rearing for fish, birds, and other wildlife.”⁹ CFAC is concerned that the PAS cannot effectively focus any further assessment as the NRDA rule intends (43 C.F.R. §11.25(e)(2)). CFAC requests that the Trustees precisely and clearly identify all ecological services and the provisional resource(s) they believe are affected.

⁹ Abt Associates Inc. 2018. “Preassessment Screen: Smurfit-Stone/Frenchtown Mill Site Frenchtown, Montana.” Montana Natural Resource Damage Program (Abt Associates 2018), at 36.

The PAS’s identification of “water use and recreation” as potentially affected human use services is entirely unsupported.

Natural resource injury does not equate to service loss. First, an affected resource must have, or would have, provided the affected service under the baseline condition. Second, evidence that observed service levels were likely below baseline levels must exist. The PAS fails to make these connections, or even identify the resources from which these human use services flow. Even a cursory review of the available information demonstrates that neither service was affected.

The PAS does not identify any specific “water use” as potentially affected, in contrast with “surface water and groundwater use for consumption, irrigation, livestock...” identified in the Smurfit-Stone/Frenchtown Mill PAS.¹⁰ CFAC can only infer the Trustees mean drinking water use. However, Site-related groundwater and surface water were never an offsite public or domestic drinking water source. The City of Columbia Falls historically supplied drinking water from its groundwater production wells.¹¹ Domestic and public groundwater wells supplied the population outside the City’s service area, including Aluminum City at the western Site boundary.¹² Site-related contaminants are not detected in the Columbia Falls water supply nor in Aluminum City water wells above applicable drinking water criteria.¹³ Furthermore, there was never any threat of exposure from the release because Site groundwater flows downgradient toward the Flathead River away from the offsite groundwater well source areas. Even if Site groundwater were accessible under baseline conditions, the available supply from all other sources exceeded baseline public and domestic drinking water demand. As of 1996, Columbia Falls projected its existing production wells and storage tank would meet maximum daily demand from all sources through 2016.¹⁴ Columbia Falls’ population increased at a modest 1.3% annually from 1980–2020, and in 2020 Columbia Falls completed a third public supply well further west of its existing wells.¹⁵ As the Baseline Human Health Risk Assessment (BHHRA) makes clear, although meeting DEQ-7 standards is a remediation goal, Site groundwater is not anticipated as a future drinking water supply.

The PAS does not identify a specific type of “recreation” service as potentially affected. Again, the Smurfit-Stone/Frenchtown Mill PAS provides a stark contrast by identifying “fishing, hunting, hiking, wildlife viewing, and photography.”¹⁶ CFAC can only infer the Trustees mean recreation supported by Flathead River surface waters. Nevertheless, the available information

¹⁰ Abt Associates 2018, at 36.

¹¹ Peters, Doug and Gary Root. n.d. “City of Columbia Falls PWS Source Water Protection Plan.” PWSID # 00181. Source Water Delineation Assessment Report. Montana Department of Environmental Quality. Accessed March 5, 2024. <https://deq.mt.gov/files/Water/WPB/NRISReports/MT0000181.pdf> (Peters and Root, n.d.), at Chapter 6.

¹² Well reports extracted from Montana Bureau of Mines and Geology, and Montana Technological University. 2024. “Main Reports.” Montana’s Ground Water Information Center. March 5, 2024. <https://mbmgwic.mtech.edu/sqlserver/v11/menus/menudata.asp> (GWIC 2024).

¹³ See for example, <https://www.cityofcolumbiafalls.org/publicworks/page/2021-annual-drinking-water-report>.

¹⁴ Peters and Root n.d., at Chapter 6.

¹⁵ U.S. Census Bureau, Decennial Census of Population and Housing, Summary File 1; GWIC 2024.

¹⁶ Abt Associates, 2018.

demonstrates that Flathead River recreation access and quality were never impaired by contaminants, let alone Site-related ones. The BHHRA concludes neither the Flathead River nor the Backwater Seep Sampling Area pose any health risk for recreationist floaters and fishers.¹⁷ There are no fish consumption health advisories (FCAs) *anywhere* along the Flathead River that could impair fishing services, nor have there been historically.¹⁸ FCAs are oftentimes used to establish recreational fishing injuries as at the Smurfit-Stone/Frenchtown Mill Site that documents FCAs for gamefish in the Clark Fork River reach near the site.¹⁹ According to MDEQ, the Flathead River has always attained beneficial use criteria for drinking water, primary contact recreation, agriculture, and aquatic life as assessed under Sections 305(b) and 303(d) of the Clean Water Act.²⁰ Based on the foregoing, CFAC requests that the Trustees identify specific recreation services potentially affected and the data on which the conclusion is based.

The Trustees do not demonstrate that an assessment of Teakettle Mountain is warranted based on PAS criteria and fail to consider whether its assessment is excluded under the NRD Rules.

The PAS cites historical data from 1973 as evidence that “fluoride from the site contaminated Teakettle Mountain northeast of the aluminum plant” and that terrestrial resources were contaminated and may have been impacted. During the Trustee meeting, the response was “most definitely” when CFAC asked if the NRD assessment would include TKM, and the primary reason was reestablishing the vegetative layer.²¹ However, in order to “ensure that there is a reasonable probability of making a successful claim before monies and efforts are expended in carrying out an assessment” (43 C.F.R. §11.23(b)), the Trustees must address whether CERCLA’s time bar exclusion excludes TKM damages, that fluoride concentrations were likely sufficient to cause injury to terrestrial resources and services that were destroyed by the 1929 Moonlight Fire, and that assessment data are available or obtainable at a reasonable cost.

Readily available data suggests that NRD may be limited to pre-CERCLA releases and are thus time barred (43 C.F.R. § 11.24(b)(1)(ii)). Converting antiquated technology prior to CERCLA’s enactment substantially reduced fluoride air emissions from the aluminum plant. Between 1976 and 1980, AAC invested more than \$40 million (nominal) to modify operations and emissions controls that would reduce fluoride emissions and adhere to state standards.²² In 1978, the

¹⁷ Roux, 2020, Remediation Investigation Report for the CFAC Facility, 2000 Aluminum Drive, Columbia Falls, Montana.

¹⁸ See <https://fishadvisoryonline.epa.gov/Advisories.aspx>. See also Montana Department of Environmental Quality (MDEQ). “Montana Sport Fish Consumption Guidelines.” Montana Fish, Wildlife and Parks. May 26, 2021. https://fwp.mt.gov/binaries/content/assets/fwp/fish/fish-consumption-guide_2021_fnl_selchedited_2022.pdf. (MDEQ 2021a).

¹⁹ Abt Associates, 2018, at 35.

²⁰ Montana Department of Environmental Quality (MDEQ). “MT Streams Final 2020.” Discover DEQ’s Data. May 16, 2023. <https://discover-mtdeq.hub.arcgis.com/datasets/MTDEQ:mt-streams-final-2020/explore?location=48.408991,-113.871600,11.00>. (MDEQ 2021b).

²¹ The other reason was to ensure construction workers are not exposed to health risks in the future. Not only is that outside the scope of NRDA, but the surficial soil samples obtained along the eastern Site boundary exhibit fluoride concentrations were 10 to 45 ppm, well below the residential RSL of 310 ppm. See RI Report.

²² See MDEQ 2013. See also <https://montana-aluminum.com/timelines-2/timeline-iv-the-final-years/> (Hanners 2017a).

United States filed a lawsuit in the U.S. District Court of Montana seeking a permanent injunction “from emitting fluorides resulting in death or injury to trees, plants, wildlife, etc. in Flathead National Forest & Glacier National Park...”²³ Dr. Clinton Carlson opined based on his 1978 dissertation that fluoride accumulation from AAC plant emissions had caused tree mortality, morbidity, and retardation on nearby Forest Service and National Park Service lands.²⁴ Fluoride emissions averaged 771 pounds per day in 1981—the first full year when modifications were operational—representing 22 percent of average and less than 10 percent of the maximum daily fluoride emissions during 1969–1978 (Figure 1). Dr. Carlson “noticed a dramatic improvement to conifers on Forest Service lands by July [1980]”.²⁵ Furthermore, the United States settled that lawsuit in 1980; this settlement may constitute the Trustees’ agreement that the injury to plants and wildlife had ceased and may legally bar the Trustees from pursuing any additional NRD for this resource.²⁶

To justify proceeding with an NRDA, the PAS must demonstrate that fluoride emissions after CERCLA’s enactment were sufficient to injure TKM trees, wildlife, and soils (43 C.F.R. §11.23(e)(3)). One approach to characterizing baseline conditions and quantifying injury is by comparison with a reference area (i.e., one similar with the subject area in ways influencing the quantity and quality of services except the hazardous substance exposure).²⁷ CFAC completed a reference study comparing 2009 aerial imagery of TKM and Stryker Peak/Ridge. Both are physically and biologically similar and Stryker Ridge is 32 miles northwest of CFAC in a direction and at a distance that would be outside the influence of air emissions from CFAC.²⁸ The imagery reveals similar tree stands and vegetative growth, which is remarkable considering that TKM was entirely denuded of vegetation and soil in the 1929 Half Moon Fire.²⁹ TKM lacks vegetation only where one would expect; on the steep slope and terraced rocks of the west/southwestern similarly observed at Stryker Peak/Ridge. Please see Figures 2a and 2b for the imagery comparisons.

Meaningful Participation in the NRDA process has been Foreclosed.

The Notice offered CFAC the “opportunity to participate in the development of the type and scope of Assessment Plan(s) and subsequently in the performance of the assessment” and invited CFAC “to enter into a cooperative assessment agreement with the Trustees.” One of the purposes of CFAC’s request for a meeting with the Trustees was to obtain clarity on performing the assessment and the terms of the referenced cooperative assessment agreement.

²³ United States District Court, Missoula Division, Docket Number CV-78-80-M.

²⁴ See Hanners, Richard. 2017a. “Chapter 38: The Big Conversion.” In *From Superstar to Superfund: The History of a Northwest Montana Aluminum Smelter*. See also Carlson, Clinton E. 1978. “Fluoride Induced Impact on a Coniferous Forest Near the Anaconda Aluminum Plant in Northwestern Montana.” The University of Montana.

²⁵ Hanners, Richard. 2017a. “Timeline IV- The Final Years.” *Montana Aluminum*. 2017. <https://montana-aluminum.com/timelines-2/timeline-iv-the-final-years/>.

²⁶ Hanners 2017a.

²⁷ BLM 2008, at 50–51.

²⁸ Both exhibit a south/southwest face with an approximate 50 percent slope, are at similar elevations, and assumed to support the same conifer and other vegetation.

²⁹ Hanners, Richard .2017c. “Chapter 34: Teakettle Mountain.” In *From Superstar to Superfund: The History of a Northwest Montana Aluminum Smelter*.

During the Trustee meeting, CFAC was shocked to learn that the Montana NRD Program had already executed a contract with an outside consulting firm, Industrial Economics, Inc., to conduct the NRDA. Further, you advised CFAC that its role in this process would be to pay for the already-contracted-for work and that CFAC would have an “opportunity to confer” on the development of a work plan. Following the meeting, CFAC requested a copy of the contract you referenced in the meeting, which you provided in a redacted form. On February 22, 2024, CFAC requested an unredacted version of the rates schedule to assist it in evaluating the scope of the work and the reasonableness of costs. Despite numerous requests, the Montana NRD Program has yet to provide the fully unredacted contract and has not identified any legal basis for withholding it.

Task Order No. 4, which is identified as “Confidential,” was entered into between the Montana NRD Program and Industrial Economics, Inc., on February 13, 2024 (although it references being retroactive to February 9). The Task Order includes preparation of a data gaps analysis, preparation of a draft and final assessment plan, the assessment itself, and other technical documents. The budget for the Task Order exceeds \$400,000, which does not include additional data collection that may be identified as part of the data gaps analysis. CFAC can only conclude that the Trustees are embarking on an expansive fishing expedition based on an insufficient PAS that is inconsistent with the existing data, the RI/FS, and EPA’s anticipated remedy.

To find that this contract was executed by the Montana NRD Program prior to the Trustee meeting, but after that meeting was already scheduled with a specific agenda item directed to CFAC’s desire for clarity on performing the assessment, renders the Notice’s offer hollow and effectively negates CFAC’s ability to meaningfully participate in the NRDA process. An offer to confer when the process is already underway is no “opportunity” – it makes the Trustees’ offer nothing but a box-checking exercise and is inconsistent with the NRD rules that suggest a cooperative approach. CFAC came to that meeting expecting that it would agree to collaborate on the development of an assessment plan following issuance of the ROD and to identify any data gaps. Unfortunately, by executing a contract with a consulting firm to “prepare a preliminary estimate of damages and a data gaps analysis, develop and implement an Assessment Plan, and assist with developing a Restoration and Compensation Determination Plan and associated tasks” the Montana NRD Program has effectively negated the Notice’s ostensible offer to CFAC to participate in developing the type and scope of the Assessment Plan and to subsequently perform the assessment. These actions violate 43 C.F.R. § 32(a)(2)(iii)(B), which requires that the Trustees provide at least 30 days (with a reasonable extension) for the notified PRPs to “respond to the Notice before proceeding with the development of the Assessment Plan or any other assessment actions.” Executing a contract for the NRDA process constitutes “other assessment actions” and it clearly occurred during CFAC’s response time.

Conclusion.

The initiation of an NRDA at this time is premature. In addition, there are significant technical and legal flaws with the PAS. Finally, the actions of the Montana NRD Program, in initiating assessment actions before CFAC had responded to the Notice’s invitation, are wholly inappropriate and nullify CFAC’s purported opportunity for participation. During the meeting, it was clear that the Trustees were not asking for CFAC’s participation in the assessment process;

rather, the Trustees just want CFAC to pay for it without the opportunity to conduct the work or provide meaningful input. To that, CFAC cannot agree.

However, CFAC is willing to engage in a cooperative process with the Trustees, just as it has with EPA and the State of Montana on the remediation efforts. To that end, CFAC requested that the Montana NRD Program share sample cooperative agreements of the type contemplated by the Notice. On February 26, 2024, you provided the 2014 Funding and Participation Agreement for the Duke Energy Dan River Steam Station Coal Ash Pond Site in Rockingham County, North Carolina.

Using that as a model, CFAC revised it to be site-specific and to address the offers made in the Notice. A draft Agreement for the CFAC Site is attached for the Trustees' consideration. Essentially, CFAC proposes that the parties form a Joint Assessment Team to oversee the NRDA and that CFAC be allowed to conduct the work and reimburse the Trustees for their reasonable and documented past and future costs. Using that draft as a starting point, CFAC invites the Trustees to conduct good faith negotiations on the terms of a cooperative agreement that allows CFAC meaningful participation in the NRDA process.

CFAC again requests that the Trustees consider these comments before moving forward with this NRDA. In addition, please include this letter in the administrative record for the Site and provide a copy to the Trustee group.

Sincerely,



Jared Ragozine

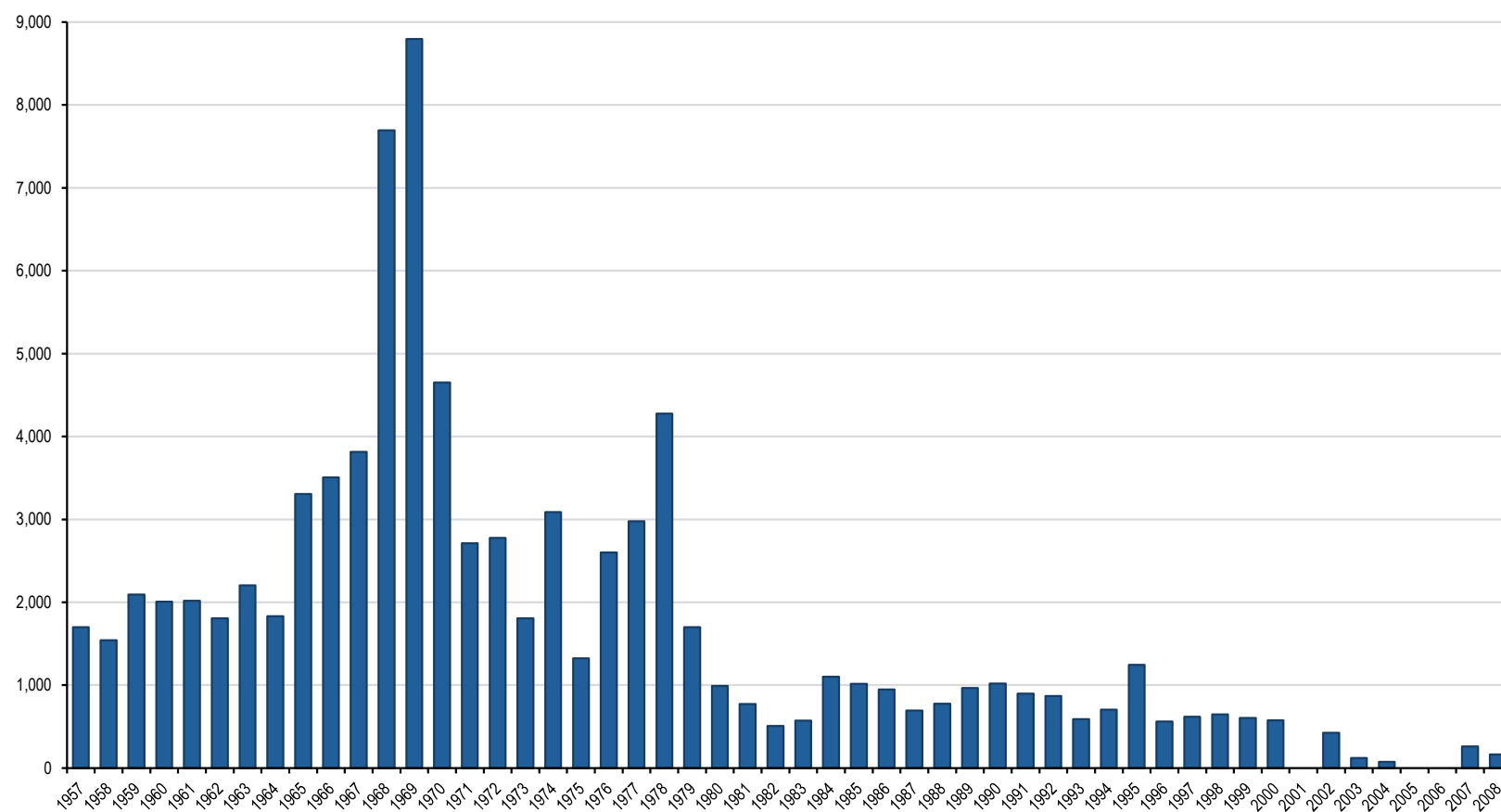
Attachments:

Figures 1, 2a, and 2b
Funding and Participation Agreement

cc via email:

John Stroiazzo, CFAC
Cynthia Brooks, Doney Crowley P.C.
Michael Freeman, Governor's Natural Resource Advisor
Andrew Baris, Roux
Ryan Stifter, Roux

Figure 1. Total Daily Fluoride Emissions from the Columbia Falls Aluminum Company Facility (pounds per day)



Notes and Sources:

[1] Data for 1957-1986 are average fluoride emissions per day reported in United States Department of Interior National Parks Service, "Assessment of Air Quality and Air Pollutant Impacts in National Parks of the Rocky Mountains and Northern Great Plains", August 1998, Figure VI-1. Annual average daily fluoride emissions from Columbia Falls Aluminum Co. plant from 1957 to 1992 (Columbia Falls Aluminum Co., Columbia Falls, MT).

[2] Data for 1987-2008 are total hydrogen fluoride emissions from point and fugitive sources downloaded from the United States Environmental Protection Agency, "Toxic Release Inventory" for TRI Facility ID 59912CLMBF2000A.

Figure 2a. Teakettle Mountain Vegetation Layer as of 2009

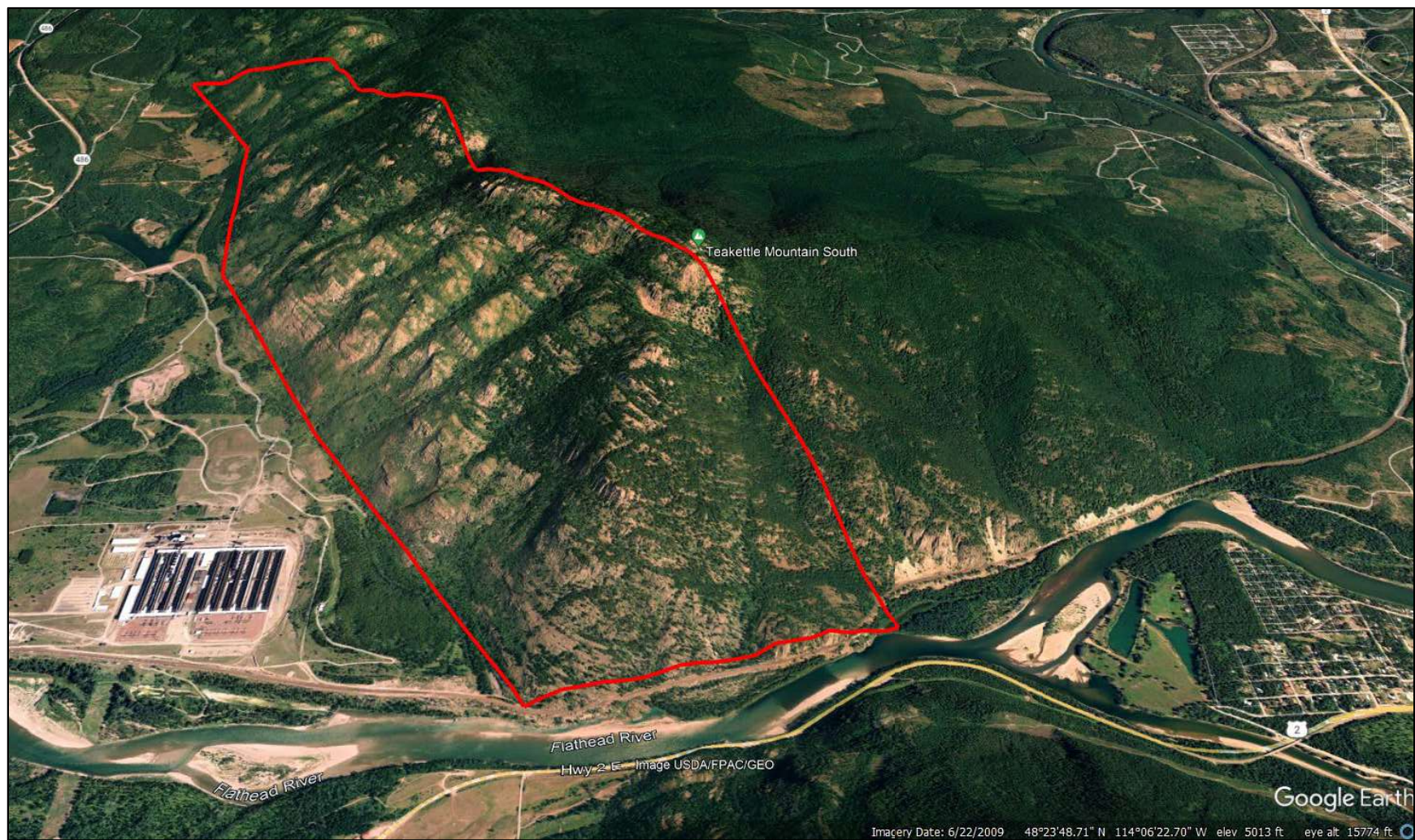
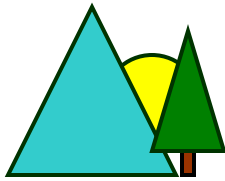


Figure 2b. Stryker Peak/Ridge Vegetation Layer as of 2009





Columbia Falls Aluminum Company

May 8, 2024

Sent via e-mail to khausrath@mt.gov

Katherine Hausrath
Legal Counsel
Montana Natural Resource Damages Program
PO Box 201427
Helena, MT 59620

Re: Columbia Falls Aluminum Company (CFAC) CERCLA Site (Site)
Follow-up Response to Notice of Intent to Perform a Natural Resource Damage
Assessment (NRDA)

Dear Ms. Hausrath:

I am writing as CFAC committed to providing the Trustees with a response by May 8, 2024.

To recap our shared history, on January 10, 2024, CFAC received a Preassessment Screen (PAS) and Notice of Intent to Perform a Natural Resource Damage Assessment (Notice) at the Site from the Montana Natural Resource Damage Program (NRDP), the U.S. Department of Interior through the U.S. Fish and Wildlife Service and the Bureau of Indian Affairs, the U.S. Department of Agriculture, and the Confederated Salish and Kootenai Tribes (collectively, the Trustees). The Notice provided CFAC the opportunity to participate in the NRDA process. It described this opportunity to participate as including both the development of the type and scope of the Assessment Plan and the subsequent performance of the assessment, pursuant to a funding and participation agreement.

CFAC met with the Trustees on February 21, 2024, to discuss the NRDA process. At that meeting, it became clear that the Trustees intended to conduct the assessment and primarily wanted CFAC to “participate” by funding the NRDA. In return, CFAC would have the “opportunity to confer” in the process. CFAC also learned that the Montana NRDP had already issued a contract to Industrial Economics, Inc. covering the Preliminary Assessment of Damages, data gaps analysis, Assessment Plan, Assessment Report, and the Restoration Determination and Compensation Plan. To our disappointment, the contract was issued eight days before CFAC’s meeting with the Trustees, which had been scheduled prior to the contract’s execution.

On March 8, 2024, CFAC responded to the Notice and identified significant technical and legal issues with the PAS and the assessment process itself. However, in a spirit of cooperation, CFAC also prepared a funding and participation agreement (Agreement), modeled on an example you provided. The Agreement required CFAC to conduct the assessment in a collaborative manner under the Trustees' oversight while also paying all associated costs.

The Trustees responded to CFAC's offer on April 12, 2024, disregarding CFAC's comments on the PAS and offering a heavily edited version of the Agreement, with CFAC's role limited to paying for the NRDA and having some opportunity to "confer" in the process. The revised Agreement provides only three points for CFAC input: the parties would "meet and confer" on the specifics of the draft Assessment Plan; CFAC could provide comments on that plan prior to its release for public comment; and, following public comment, the parties would "meet and confer" to discuss CFAC's comments and attempt to reach consensus on the final Assessment Plan. This offer to "meet and confer" is far less than CFAC understood the Trustees were offering in the Notice's stated "opportunity to participate" in the NRDA process.

Again, however, CFAC met with the Trustees on April 24, 2024, in the hopes of finding a cooperative path forward. During that meeting, it was clear that the Trustees would not allow CFAC to conduct the assessment, although the NRDA regulations do not prohibit a potentially responsible party from conducting the work and there is one site in Montana where that is occurring. In addition, the Trustees indicated they do not intend to respond to CFAC's March 8, 2024, letter, or its comments on the PAS.

As you know, CFAC has approached regulatory requests at this Site collaboratively. Since signing the Administrative Order on Consent in 2015, CFAC has been cooperative with EPA and the remediation process, spending over \$14 million on the Remedial Investigation (RI) and Feasibility Study to determine the nature and extent of impacts at the Site and to evaluate cleanup options to ensure any impacts are mitigated or eliminated. CFAC has conducted all work asked of it by EPA and anticipates continuing to do so once the Record of Decision is issued. Considering this history, the Trustees' unwillingness to allow CFAC meaningful participation in the NRDA process lacks any justification.

For these reasons, as well as those identified in CFAC's March 8, 2024, letter, CFAC is not willing to enter into the Agreement as proposed by the Trustees.

CFAC does want to follow up on one item from the April 24, 2024, meeting, wherein you indicated that the Trustees may need to recreate the RI data because there are no sample location tables available. Finding it incredible that EPA would issue a Proposed Plan without tying sample data to locations, CFAC conducted some additional research. Location coordinates for all samples collected during the RI are provided in the following tables, which I have included with this letter:

1. Summary of Soil Samples
2. Summary of Surface Water
3. Summary of Sediment Samples

4. Monitoring Well Construction Data – Screened Intervals and Survey Data
5. Groundwater and Flathead River Elevation Data
6. Summary of Groundwater Samples
7. Summary of Sediment Porewater Samples

These tables are identical to Tables 1 through 7 of the Phase II Site Characterization Data Summary Report (included as Volume 4, Appendix C of the RI Report) with the exception that Northing and Easting columns have been added and populated with Northing and Easting coordinates in the Montana State Plane coordinate system. This allows for plotting of the sample locations. The sample locations are also depicted in the various figures and plates within the RI Report and the Phase II Site Characterization Data Summary Report.

During the NRDA process, if other issues like this one arise that would lead the Trustees to consider expending time or resources recreating work that has already been done, CFAC requests that you reach out prior to doing so and provide CFAC with the opportunity to assist.

CFAC again requests that the Trustees consider both this and its March 8, 2024, comments before moving forward with this NRDA process. In addition, please include this letter in the administrative record for the Site and provide a copy to the Trustee group.

Sincerely,



Jared Ragozine

Attachments:

Tables 1-7

cc: John Strojazzo, CFAC
Cynthia Brooks, Doney Crowley P.C.
Andrew Baris, Roux
Ryan Stifter, Roux
Michael Freeman, Governor's Natural Resource Advisor

**Table 1. Summary of Soil Samples Collected During Phase I SC, SSPA, and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Sample Location	Easting (X)	Northing (Y)	Phase	Date Completed	Surface (0 - 0.5 ft bls)	Shallow (0.5 - 2 ft bls)	Intermediate (6 - 8 ft bls)	Intermediate (10 - 12 ft bls)	Deep (15 - 17 ft bls)	Deep (20 - 22 ft bls)	Above Water Table (Interval Varies)	In Screened Interval (Interval Varies)	Notes
CFISS-001	842971.87	1546149.86	Phase I	6/14/2016	X	X							
CFISS-002	842967.70	1545983.29	Phase I	6/14/2016	X	X							
CFISS-002	842967.70	1545983.29	Phase I	7/19/2016	X	X							
CFISS-003	842978.12	1545814.54	Phase I	6/15/2016	X	X							
CFISS-004	842915.62	1545635.38	Phase I	6/15/2016	X	X							
CFISS-005	843123.95	1545624.96	Phase I	6/16/2016	X	X							
CFISS-006	843323.95	1545568.71	Phase I	6/17/2016	X	X							
CFISS-006	843323.95	1545568.71	Phase I	7/25/2016	X	X							
CFISS-007	843555.20	1545556.21	Phase I	6/17/2016	X	X							
CFISS-008	844011.45	1545522.88	Phase I	6/18/2016	X	X							
CFISS-008	844011.45	1545522.88	Phase I	7/26/2016	X	X							
CFISS-009	842901.03	1545454.13	Phase I	6/22/2016	X	X							
CFISS-010	843119.78	1545452.04	Phase I	6/22/2016	X	X							
CFISS-011	843519.78	1545406.21	Phase I	6/21/2016	X	X							
CFISS-012	843534.37	1545395.79	Phase I	6/21/2016	X	X							
CFISS-013	843746.87	1545381.21	Phase I	6/20/2016	X	X							
CFISS-014	843951.03	1545366.63	Phase I	6/20/2016	X	X							
CFISS-015	844145.45	1545343.71	Phase I	6/18/2016	X	X							
CFISS-016	842921.87	1545314.54	Phase I	6/23/2016	X	X							
CFISS-016	842921.87	1545314.54	Phase I	6/28/2016	X	X							
CFISS-017	843105.20	1545302.04	Phase I	6/23/2016	X	X							
CFISS-018	843340.62	1545206.21	Phase I	6/24/2016	X	X							
CFISS-019	843526.03	1545183.29	Phase I	6/24/2016	X	X							
CFISS-020	843730.20	1545170.79	Phase I	6/25/2016	X	X							
CFISS-021	843942.70	1545160.38	Phase I	6/25/2016	X	X							
CFISS-022	844151.03	1545152.04	Phase I	6/27/2016	X	X							
CFISS-023	844043.78	1545118.71	Phase I	6/27/2016	X	X							
CFISS-024	843546.87	1545027.04	Phase I	6/28/2016	X	X							
CFISS-025	843719.78	1544962.46	Phase I	6/30/2016	X	X							
CFISS-026	843932.28	1544954.13	Phase I	6/30/2016	X	X							
CFISS-027	844146.87	1544947.88	Phase I	7/1/2016	X	X							
CFISS-028	844346.87	1544931.21	Phase I	7/1/2016	X	X							
CFISS-029	844567.70	1544927.04	Phase I	6/27/2016	X	X							
CFISS-030	843909.37	1544781.21	Phase I	7/20/2016	X	X							
CFISS-031	843736.45	1544736.45	Phase I	7/13/2016	X	X							
CFISS-032	843923.95	1544745.79	Phase I	7/12/2016	X	X							
CFISS-033	844126.03	1544737.46	Phase I	7/12/2016	X	X							
CFISS-034	844330.20	1544716.63	Phase I	7/11/2016	X	X							
CFISS-035	844330.20	1544710.38	Phase I	7/12/2016	X	X							
CFISS-036	842211.45	1544914.54	Phase I	7/15/2016	X	X							
CFISS-037	842423.95	1544891.63	Phase I	7/15/2016	X	X							
CFISS-038	842446.87	1544872.88	Phase I	7/14/2016	X	X							
CFISS-039	842628.12	1544852.04	Phase I	7/14/2016	X	X							
CFISS-040	843013.53	1544874.96	Phase I	7/13/2016	X	X							
CFISS-041	842196.87	1544760.38	Phase I	7/16/2016	X	X							
CFISS-042	842426.03	1544762.46	Phase I	7/18/2016	X	X							
CFISS-043	842630.20	1544704.13	Phase I	7/18/2016	X	X							
CFMW-002	843027.35	1546021.19	Phase I	6/13/2016	X	X	X						
CFMW-003a	841647.49	1547603.17	Phase I	5/31/2016	X	X	X						
CFMW-003a	841647.49	1547603.17	Phase I	6/2/2016									X (23-38)
CFMW-008a	844043.58	1546675.28	Phase I	6/13/2016	X	X	X						X (88-93)
CFMW-008a	844043.58	1546675.28	Phase I	6/14/2016									
CFMW-010	842986.31	1546115.48	Phase I	5/18/2016	X	X	X						
CFMW-012a	843111.47	1545978.65	Phase I	5/20/2016	X	X	X						X (68-73)
CFMW-016a	843955.40	1545896.54	Phase I	6/21/2016	X	X	X						X (79-84)
CFMW-018	844586.94	1545705.75	Phase I	5/19/2016	X	X	X						
CFMW-019a	843291.65	1545565.44	Phase I	5/25/2016	X	X	X						
CFMW-022	843942.18	1545314.58	Phase I	6/2/2016	X	X	X						
CFMW-023a	844686.87	1545489.24	Phase I	6/17/2016	X	X	X						
CFMW-023a	844686.87	1545489.24	Phase I	6/18/2016									X (123-128)
CFMW-025a	840914.89	1545217.96	Phase I	7/13/2016	X	X	X						X (35-40)
CFMW-026	841222.78	1545199.46	Phase I	6/14/2016	X	X	X						
CFMW-027	842166.06	1545251.43	Phase I	6/30/2016	X	X	X						
CFMW-028a	843049.72	1545108.04	Phase I	6/30/2016	X	X	X						
CFMW-029	843463.41	1545108.04	Phase I	5/18/2016	X	X	X						X (48-53)
CFMW-032a	843973.33	1544744.54	Phase I	8/8/2016	X	X	X						X (43-48)
CFMW-033	842408.02	1545445.11	Phase I	7/1/2016	X	X	X						
CFMW-034	843342.20	1544513.49	Phase I	5/31/2016	X	X	X						
CFMW-035	844447.32	1544499.01	Phase I	6/1/2016	X	X	X						
CFMW-037	844473.95	1543140.32	Phase I	6/24/2016	X	X	X						
CFMW-038	843981.36	1543075.14	Phase I	6/25/2016	X	X	X						
CFMW-038	843981.36	1543075.14	Phase I	6/25/2016									
CFMW-040	842863.26	1543076.82	Phase I	6/28/2016	X	X	X						
CFMW-040	842863.26	1543076.82	Phase I	6/28/2016									
CFMW-042	842383.65	1543285.83	Phase I	6/16/2016	X	X	X						
CFMW-043	842157.85	1544078.36	Phase I	6/15/2016	X	X	X						
CFMW-044a	843685.04	1543941.66	Phase I	7/20/2016	X	X	X						X (49-54)
CFMW-045a	842554.02	1542768.56	Phase I	8/12/2016	X	X	X						X (86-91)
CFMW-047	844332.71	1542470.13	Phase I	6/21/2016									
CFMW-047	844332.71	1542470.13	Phase I	6/21/2016	X	X	X						
CFMW-049a	844793.74	1542484.16	Phase I	6/20/2016	X	X	X						X (112-117)
CFMW-050	844928.80	1542299.18	Phase I	6/22/2016	X	X	X						
CFMW-053a	841600.66	1542988.46	Phase I	8/17/2016	X	X	X						X (59-64)
CFMW-054	841003.14	1542986.02	Phase I	6/20/2016	X	X	X						
CFMW-056a	837685.44	1543587.44	Phase I	7/15/2016	X	X	X						X (37-42)
CFMW-057a	837685.97	1543631.67	Phase I	7/27/2016	X	X	X						X (30-35)
CFMW-059a	837631.49	1542130.69	Phase I	7/22/2016	X	X	X						X (79-84)
CFMW-061	837726.23	1541698.05	Phase I	7/12/2016	X	X	X						
CFMW-064	841717.84	1541616.87	Phase I	7/11/2016	X	X	X						
CFMW-11a	842455.03	1545990.30	Phase I	6/25/2016	X	X	X						X (31-36)
CFSB-001	843205.84	1546803.70	Phase I	5/25/2016	X	X	X						
CFSB-002	843047.31	1546459.18	Phase I	5/25/2016	X	X	X						
CFSB-003	843955.37	1546443.91	Phase I	5/25/2016	X	X	X						
CFSB-004	843072.25	1545754.55	Phase I	5/25/2016	X	X	X						
CFSB-005	843905.58	1546186.27	Phase I	5/25/2016	X	X	X						
CFSB-006	844548.80	1546144.53	Phase I	5/23/2016	X	X	X						
CFSB-007	843559.29	1545592.35	Phase I	5/25/2016	X	X	X						

**Table 1. Summary of Soil Samples Collected During Phase I SC, SSPA, and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Sample Location	Eastng (X)	Northing (Y)	Phase	Date Completed	Surface (0 - 0.5 ft bls)	Shallow (0.5 - 2 ft bls)	Intermediate (6 - 8 ft bls)	Intermediate (10 - 12 ft bls)	Deep (15 - 17 ft bls)	Deep (20 - 22 ft bls)	Above Water Table (Interval Varies)	In Screened Interval (Interval Varies)	Notes
CFSB-006	844682.54	1545581.19	Phase I	5/23/2016	X	X	X						
CFSB-009	844686.09	1545311.44	Phase I	5/23/2016	X	X	X						
CFSB-010	843161.98	1544434.96	Phase I	5/21/2016		X	X						No surface sample collected - asphalt surface from 0-0.5 ft bls
CFSB-011	841399.95	1545858.89	Phase I	5/19/2016	X	X	X						
CFSB-012	843248.92	1544418.61	Phase I	5/28/2016		X	X						No surface sample collected - asphalt surface from 0-0.5 ft bls
CFSB-013	840997.89	1545559.95	Phase I	5/19/2016	X	X	X						
CFSB-014	841258.28	1545656.84	Phase I	6/2/2016	X	X	X						
CFSB-016	841311.72	1545344.76	Phase I	6/2/2016	X	X	X						
CFSB-019	841941.46	1545315.89	Phase I	6/4/2016	X	X							
CFSB-019	841941.46	1545315.89	Phase I	6/13/2016		X	X						
CFSB-021	842799.81	1545463.26	Phase I	5/23/2016	X	X	X						
CFSB-022	843009.31	1545293.81	Phase I	5/23/2016	X	X	X						
CFSB-025	843161.50	1545159.29	Phase I	6/13/2016	X	X	X						
CFSB-026	843335.50	1545136.26	Phase I	6/13/2016	X	X	X						
CFSB-027	842795.39	1545151.65	Phase I	6/13/2016	X	X	X						
CFSB-028	843019.83	1545034.17	Phase I	7/18/2016	X	X	X						
CFSB-029	843352.76	1545124.87	Phase I	5/23/2016	X	X	X						
CFSB-030	843221.14	1544965.85	Phase I	6/13/2016	X	X	X						
CFSB-033	843588.59	1545092.33	Phase I	5/23/2016	X	X	X						
CFSB-034	843907.89	1545184.54	Phase I	5/31/2016	X	X	X						
CFSB-035	844058.51	1545252.14	Phase I	5/31/2016	X	X	X						
CFSB-036	843974.73	1544997.71	Phase I	5/31/2016	X	X	X						
CFSB-037	844470.08	1544959.83	Phase I	5/31/2016	X	X	X						
CFSB-038	842231.41	1544880.21	Phase I	5/21/2016	X	X	X						
CFSB-040	842973.53	1544751.52	Phase I	5/20/2016	X	X	X						
CFSB-042	843235.15	1544830.13	Phase I	5/20/2016	X	X	X						
CFSB-044	843403.49	1544778.47	Phase I	5/20/2016	X	X	X						
CFSB-045	843197.15	1544671.44	Phase I	5/21/2016	X	X	X						
CFSB-046	843338.13	1544737.50	Phase I	5/20/2016	X	X	X						
CFSB-048	843529.47	1544715.16	Phase I	5/20/2016	X	X	X						
CFSB-049	843679.34	1544612.21	Phase I	5/28/2016	X	X	X						No surface sample collected - asphalt surface from 0-0.5 ft bls
CFSB-050	842672.20	1544607.65	Phase I	5/21/2016	X	X	X						
CFSB-051	842855.74	1544567.82	Phase I	5/21/2016	X	X	X						
CFSB-052	843204.13	1544560.41	Phase I	5/20/2016	X	X	X						No surface sample collected - concrete surface from 0-0.5 ft bls
CFSB-053	843243.24	1544306.35	Phase I	5/31/2016	X	X	X						No surface sample collected - asphalt surface from 0-0.5 ft bls
CFSB-054	843408.79	1544472.24	Phase I	5/28/2016	X	X	X						
CFSB-055	843592.76	1544466.89	Phase I	5/28/2016	X	X	X						
CFSB-057	843848.09	1544448.19	Phase I	5/28/2016	X	X	X						
CFSB-059	844128.78	1544428.08	Phase I	5/28/2016	X	X	X						
CFSB-060	844679.19	1544374.50	Phase I	5/27/2016	X	X	X						
CFSB-062	841909.12	1544232.42	Phase I	6/2/2016	X	X	X						
CFSB-064	841896.21	1544179.22	Phase I	6/3/2016	X	X	X						
CFSB-065	842037.98	1544132.50	Phase I	6/2/2016	X	X	X						
CFSB-066	844617.20	1543757.02	Phase I	5/27/2016	X	X	X						
CFSB-068	844589.99	1543546.76	Phase I	5/27/2016		X	X						No surface sample collected - asphalt surface from 0-0.5 ft bls
CFSB-071	844634.76	1543013.97	Phase I	5/27/2016	X	X	X						
CFSB-073	844220.27	1543061.80	Phase I	6/1/2016	X	X	X						
CFSB-074	844359.74	1543052.95	Phase I	6/1/2016	X	X	X						
CFSB-075	844091.68	1543003.33	Phase I	6/1/2016	X	X	X						
CFSB-079	843775.84	1543082.12	Phase I	6/1/2016	X	X	X						
CFSB-080	843683.78	1543107.19	Phase I	6/1/2016	X	X	X						
CFSB-082	843596.32	1543133.83	Phase I	6/1/2016	X	X	X						
CFSB-084	843209.03	1543114.88	Phase I	5/27/2016	X	X	X						
CFSB-086	843054.36	1543138.63	Phase I	5/26/2016	X	X	X						
CFSB-087	842968.75	1543151.57	Phase I	5/26/2016	X	X	X						
CFSB-088	842786.52	1543093.02	Phase I	5/26/2016	X	X	X						
CFSB-092	842704.36	1543083.23	Phase I	5/26/2016	X	X	X						
CFSB-094	842576.79	1543115.36	Phase I	5/24/2016	X	X	X						
CFSB-095	841962.14	1543084.28	Phase I	5/24/2016	X	X	X						
CFSB-097	841287.49	1543140.53	Phase I	5/24/2016	X	X	X						
CFSB-098	841237.57	1542976.95	Phase I	5/24/2016	X	X	X						
CFSB-099	840982.88	1543207.97	Phase I	5/24/2016	X	X	X						
CFSB-100	841122.12	1542949.96	Phase I	5/24/2016	X	X	X						
CFSB-101	842070.59	1542270.26	Phase I	7/21/2016	X	X	X						
CFSB-102	843366.27	1542051.23	Phase I	7/13/2016	X	X	X						
CFSB-104	843245.38	1541957.31	Phase I	7/13/2016	X	X	X						
CFSB-109	843467.01	1542036.18	Phase I	7/13/2016	X	X	X						
CFSB-110	843334.92	1541985.83	Phase I	7/13/2016	X	X	X						
CFSB-113	844149.01	1541857.64	Phase I	8/31/2016	X	X	X (2-4)						
CFSB-114	844105.21	1541634.30	Phase I	7/12/2016	X	X	X						
CFSB-115	844215.16	1541863.73	Phase I	8/31/2016	X	X	X (2-4)						
CFSB-116	845083.96	1541607.11	Phase I	7/22/2016	X	X	X						
CFSB-118	845391.49	1541584.99	Phase I	7/21/2016	X	X	X						
CFSB-119	845283.98	1541473.62	Phase I	7/12/2016	X	X	X						
CFSB-120	840683.27	1546594.25	Phase I	5/18/2016	X	X	X						
CFSB-121	840605.99	1547362.20	Phase I	5/18/2016	X	X	X						
CFSB-122	841159.22	1546580.87	Phase I	5/19/2016	X	X	X						
CFSB-123	839811.84	1545114.98	Phase I	5/19/2016	X	X	X						
CFSB-124	839278.34	1544762.17	Phase I	5/19/2016	X	X	X						
CFSB-125	840582.43	1545294.87	Phase I	5/18/2016	X	X	X						
CFSB-126	840682.96	1545744.27	Phase I	5/18/2016	X	X	X						
CFSB-127	840604.28	1546107.67	Phase I	5/18/2016	X	X	X						
CFSB-128	842932.85	1542765.98	Phase I	5/24/2016	X	X	X						
CFSB-129	844014.70	1542661.36	Phase I	5/24/2016	X	X	X						
CFSB-130	843470.27	1544262.16	Phase I	6/17/2016		X	X						Inside Main Plant. No surface sample collected - concrete from 0-0.5
CFSB-131	843548.00	1544287.30	Phase I	6/17/2016		X	X		X (18-20)	X (22-23)			Inside Main Plant. No surface sample collected - concrete from 0-0.5. Two opportunistic samples collected due to visual contamination. 18-20 ft bls as most impacted interval. 22-23 ft bls as below impacts.
CFSB-132	839762.00	1547500.04	Phase I	6/3/2016	X	X	X						
CFSB-133	839710.91	1547425.05	Phase I	6/3/2016		X	X						
CFSDP-001-SO	837525.45	1541509.03	Phase I	9/8/2016	X								
CFSDP-002-SO	839257.99	1542211.11	Phase I	9/8/2016	X								
CFSDP-007-SO	844305.37	1541438.21	Phase I	9/8/2016	X								
CFSDP-008-SO	846381.05	1541381.29	Phase I	9/8/2016	X								
CFSDP-009-SO	847170.07	1541851.91	Phase I	9/6/2016	X								
CFSDP-010-SO	845460.17	1544901.08	Phase I	9/6/2016	X								
CFSDP-011-SO	844369.27	1546890.71	Phase I	9/6/2016	X								
CFSDP-012-SO	843794.68	1546703.40	Phase I	9/6/2016	X								

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Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Sample Location	Eastings (X)	Northing (Y)	Phase	Date Completed	Surface (0 - 0.5 ft bsl)	Shallow (0.5 - 2 ft bsl)	Intermediate (6 - 8 ft bsl)	Intermediate (10 - 12 ft bsl)	Deep (15 - 17 ft bsl)	Deep (20 - 22 ft bsl)	Above Water Table (Interval Varies)	In Screened Interval (Interval Varies)	Notes
CFSDP-013-SO	842895.06	1549176.20	Phase I	9/6/2016	X								
CFSDP-017-SO	847593.57	1541130.57	Phase I	9/6/2016	X								
CFSDP-021-SO	842096.08	1546929.68	Phase I	9/6/2016	X								
CFSDP-022-SO	841603.68	1546654.65	Phase I	9/6/2016	X								
CFIP-17	846444.02	1542712.96	Phase I	8/25/2016	X	X (2-4)	X						
CFIP-18	846210.84	1542533.71	Phase I	8/26/2016	X	X (2-4)	X						
CFIP-19	846188.98	1542300.54	Phase I	8/25/2016	X	X (2-4)	X						
CFIP-20	846525.63	1542189.77	Phase I	8/25/2016	X	X (2-4)	X						
CFIP-21	846745.69	1542347.16	Phase I	8/25/2016	X	X (2-4)	X						
CFIP-22	846745.69	1542557.02	Phase I	8/25/2016	X	X (2-4)	X						
CFIP-23	846471.71	1542472.50	Phase I	8/26/2016	X	X (2-4)	X						
CFSB-134	841179.65	1542598.14	South Pond Assessment	10/31/2017	X	X							
CFSB-135	841335.50	1542590.65	South Pond Assessment	10/31/2017	X	X							
CFSB-136	841477.88	1542552.68	South Pond Assessment	10/31/2017	X	X							
CFSB-137	841702.53	1542502.06	South Pond Assessment	11/1/2017	X	X							
CFSB-138	841875.39	1542497.27	South Pond Assessment	11/1/2017	X	X							
CFSB-139	841158.32	1542469.36	South Pond Assessment	10/31/2017	X	X							
CFSB-140	841442.89	1542442.99	South Pond Assessment	10/31/2017	X	X							
CFSB-141	841588.37	1542413.50	South Pond Assessment	11/1/2017	X	X							
CFSB-142	842536.78	1542204.64	South Pond Assessment	11/2/2017	X	X	X (2-4)						
CFSB-143	842741.38	1542195.14	South Pond Assessment	11/2/2017	X	X	X (2-4)						
CFSB-144	842490.15	1541966.28	South Pond Assessment	11/2/2017	X	X	X (2-4)						
CFSB-145	843336.22	1541833.39	South Pond Assessment	11/6/2017	X	X	X (2-4)						
CFSB-146	843899.42	1541801.75	South Pond Assessment	11/6/2017	X	X	X (2-4)						
CFSB-147	844459.45	1541576.05	South Pond Assessment	11/6/2017	X	X	X (2-4)						
CFSB-148	845002.61	1541530.70	South Pond Assessment	11/6/2017	X	X	X (2-4)						
CFSB-151	845965.12	1541941.11	South Pond Assessment	11/7/2017	X	X	X (2-4)						
CFSB-152	843113.95	1542080.70	South Pond Assessment	11/7/2017	X	X	X (2-4)						
CFSB-153	842908.39	1542172.37	South Pond Assessment	11/6/2017	X	X	X (2-4)						
CFBSB-001	842753.89	1537276.38	Background	9/25/2018	X								
CFBSB-002	843724.61	153724.61	Background	9/25/2018	X								
CFBSB-003	843097.16	1537240.51	Background	9/25/2018	X								
CFBSB-004	842980.60	1537218.69	Background	9/25/2018	X								
CFBSB-005	843150.24	1537337.54	Background	9/25/2018	X								
CFBSB-006	843549.77	1537249.84	Background	9/25/2018	X								
CFBSB-007	843243.84	1537682.49	Background	9/25/2018	X								
CFBSB-008	843369.96	1537588.95	Background	9/25/2018	X								
CFBSB-009	843136.81	1537576.67	Background	9/25/2018	X								
CFBSB-010	843209.29	1537717.10	Background	9/25/2018	X								
CFBSB-011	823888.15	1525397.22	Background	9/28/2018	X								
CFBSB-012	823941.40	1525390.73	Background	9/28/2018	X								
CFBSB-013	823440.81	1525572.79	Background	9/28/2018	X								
CFBSB-014	822893.71	1527037.33	Background	9/28/2018	X								
CFBSB-015	823371.23	1525843.40	Background	9/28/2018	X								
CFBSB-016	822438.76	1526768.41	Background	9/28/2018	X								
CFBSB-017	822414.25	1526958.85	Background	9/28/2018	X								
CFBSB-018	822817.66	1527481.07	Background	9/28/2018	X								
CFBSB-019	823639.67	1525302.29	Background	9/28/2018	X								
CFBSB-020	823271.07	1526724.99	Background	9/28/2018	X								
CFBSB-021	858588.55	1569541.49	Background	9/26/2018	X								
CFBSB-022	858615.39	1568969.63	Background	9/26/2018	X								
CFBSB-023	858336.00	1568336.00	Background	9/26/2018	X								
CFBSB-024	859726.26	1568954.90	Background	9/26/2018	X								
CFBSB-025	859259.74	1568720.99	Background	9/26/2018	X								
CFBSB-026	858581.78	1568927.67	Background	9/26/2018	X								
CFBSB-027	858463.97	1569068.31	Background	9/26/2018	X								
CFBSB-028	859023.57	1568419.50	Background	9/26/2018	X								
CFBSB-029	859607.57	1569484.15	Background	9/26/2018	X								
CFBSB-030	859595.06	1569191.87	Background	9/26/2018	X								
CFBSB-031	848214.31	1538705.69	Background	9/27/2018	X								
CFBSB-032	848039.06	1538830.32	Background	9/27/2018	X								
CFBSB-033	848207.81	1539228.08	Background	9/27/2018	X								
CFBSB-034	848336.28	1538832.58	Background	9/27/2018	X								
CFBSB-035	848257.31	1539347.66	Background	9/27/2018	X								
CFBSB-036	847897.44	1538410.32	Background	9/27/2018	X								
CFBSB-037	848564.91	1539063.22	Background	9/27/2018	X								
CFBSB-038	847924.70	1538972.01	Background	9/27/2018	X								
CFBSB-039	847367.81	1538739.99	Background	9/27/2018	X								
CFBSB-040	847591.92	1538694.33	Background	9/27/2018	X								
CFISS-001	842971.87	1546149.96	Phase II	5/23/2018	X	X							
CFISS-003	842978.12	1545814.54	Phase II	5/22/2018	X	X							
CFISS-004	842915.62	1545635.38	Phase II	5/19/2018	X	X							
CFISS-005	843123.95	1545624.96	Phase II	5/22/2018	X	X							
CFISS-007	843655.20	1545556.21	Phase II	5/17/2018	X	X							
CFISS-009	842901.03	1545454.13	Phase II	5/21/2018	X	X							
CFISS-010	843119.78	1545452.04	Phase II	5/21/2018	X	X							
CFISS-011	845405.21	1545405.21	Phase II	5/19/2018	X	X							
CFISS-012	843534.37	1545395.79	Phase II	5/18/2018	X	X							
CFISS-013	843746.87	1545381.21	Phase II	5/17/2018	X	X							
CFISS-014	843951.03	1545366.63	Phase II	5/16/2018	X	X							
CFISS-015	844186.45	1545343.71	Phase II	5/15/2018	X	X							
CFIP-001	842078.01	1547798.66	Phase II	5/5/2018	X	X							
CFIP-002	841756.70	1547805.11	Phase II	5/5/2018	X	X							
CFIP-003	841900.28	1548016.31	Phase II	5/5/2018	X	X							
CFIP-004	841696.05	1548150.84	Phase II	5/5/2018	X	X							
CFIP-005	842252.22	1548236.10	Phase II	5/5/2018	X	X							
CFIP-006	842040.59	1548407.73	Phase II	5/5/2018	X	X							
CFIP-007	843236.65	1548094.46	Phase II	6/9/2018	X	X							
CFIP-008	843722.79	1548114.59	Phase II	6/9/2018	X	X							
CFIP-009	843529.76	1545965.97	Phase II	6/9/2018	X	X							
CFIP-010	843212.20	1545831.88	Phase II	6/9/2018	X	X							
CFIP-011	843758.29	1545816.98	Phase II	6/9/2018	X	X							
CFIP-012	843516.38	1545894.38	Phase II	6/9/2018	X	X							
CFIP-013	844120.72	1546024.35	Phase II	6/9/2018	X	X							
CFIP-014	844216.85	1545809.41	Phase II	6/9/2018	X	X							
CFIP-015	844265.52	1545929.46	Phase II	6/16/2018	X	X							
CFIP-016	843870.65	1546947.19	Phase II	6/16/2018	X	X							

**Table 1. Summary of Soil Samples Collected During Phase I SC, SSPA, and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Sample Location	Eastings (X)	Northing (Y)	Phase	Date Completed	Surface (0 - 0.5 ft bls)	Shallow (0.5 - 2 ft bls)	Intermediate (6 - 8 ft bls)	Intermediate (10 - 12 ft bls)	Deep (15 - 17 ft bls)	Deep (20 - 22 ft bls)	Above Water Table (Interval Varies)	In Screened Interval (Interval Varies)	Notes
CFPL-017	844308.44	154680.39	Phase II	6/16/2018	X	X							
CFPL-018	844144.80	154677.48	Phase II	6/16/2018	X	X							
CFMW-057b	837625.01	1543667.53	Phase II	5/7/2018							X (28-30)	X (35-37)	
CFMW-065	840306.44	1546253.84	Phase II	5/2/2018	X	X		X			X (25-27)	X (30-32)	
CFMW-066	842325.39	1548008.72	Phase II	4/30/2018	X	X		X			X (23-25)	X (27-29)	
CFMW-067	841766.67	1548412.29	Phase II	5/1/2018	X	X		X			X (23-25)	X (30-33)	
CFMW-068	839377.38	1542808.89	Phase II	5/10/2018	X	X		X			X (73-75)	X (78-80)	
CFMW-069	839190.13	1543836.37	Phase II	5/8/2018	X	X		X			X (43-45)	X (51-53)	
CFMW-070	843602.54	1544760.53	Phase II	5/16/2018	X	X		X			X (48-50)	X (55-57)	
CFMW-071	840266.87	1542936.88	Phase II	5/3/2018	X	X		X					
CFMW-071	840266.87	1542936.88	Phase II	5/5/2018							X (93-95)	X (98-100)	
CFSB-154	842971.41	1544110.44	Phase II	5/19/2018		X (0.5-2.5)	X (5.5-7.5)	X (10.5-12.5)					
CFSB-155	842936.69	1543565.30	Phase II	5/19/2018		X (0.5-2.5)	X (5.5-7.5)	X (10.5-12.5)					
CFSB-156	843276.97	1543513.22	Phase II	5/19/2018		X (0.5-2.5)	X (5.5-7.5)	X (10.5-12.5)					
CFSB-157	843832.52	1543440.30	Phase II	5/12/2018		X (0.5-2.5)	X (5.5-7.5)	X (10.5-12.5)					
CFSB-158	844104.64	1543393.49	Phase II	5/12/2018		X (0.5-2.5)	X (5.5-7.5)	X (10.5-12.5)					
CFSB-159	844506.72	1543432.32	Phase II	5/11/2018				X (12-14)	X (17-19)	X (22-24)			
CFSB-160	844505.71	1544055.71	Phase II	5/11/2018				X (12-14)	X (17-19)	X (22-24)			
CFSB-161	844150.65	1544068.27	Phase II	5/12/2018		X (0.5-2.5)	X (5.5-7.5)	X (12.5-14.5)					
CFSB-162	843832.52	1544113.91	Phase II	5/12/2018		X (0.5-2.5)	X (5.5-7.5)	X (10.5-12.5)					
CFSB-163	843568.63	1544047.94	Phase II	5/14/2018				X (12-14)	X (17-19)	X (23-25)			
CFSB-164	843572.11	1543940.30	Phase II	5/14/2018				X (12-14)	X (17-19)	X (23-25)			
CFSB-165	843401.97	1543961.14	Phase II	5/14/2018				X (12-14)	X (17-19)	X (23-25)			
CFSB-166	843404.20	1544104.67	Phase II	5/14/2018				X (12-14)	X (17-19)	X (22-24)			
CFSB-167	843342.94	1544127.80	Phase II	5/19/2018		X (1-3)	X		X				
CFSB-168	838293.61	1545486.58	Phase II	6/27/2018	X	X							
CFSB-168	838293.61	1545486.58	Phase II	6/27/2018	X	X							
CFSB-169	838754.73	1546131.02	Phase II	6/27/2018	X	X							
CFSB-170	839354.73	1546831.02	Phase II	6/27/2018	X	X							
CFSB-171	840610.28	1548545.61	Phase II	6/27/2018	X	X							
CFSB-172	841770.58	1549201.37	Phase II	6/27/2018	X	X							
CFSB-172	841770.58	1549201.37	Phase II	9/26/2018	X	X							
CFSB-173	843187.78	1548915.69	Phase II	6/25/2018	X	X							
CFSB-174	843414.59	1548449.62	Phase II	6/25/2018	X	X							
CFSB-175	843121.10	1548019.16	Phase II	6/25/2018	X	X							
CFSB-176	844041.95	1547551.11	Phase II	6/16/2018	X	X							
CFSB-177	844349.92	1547148.18	Phase II	6/25/2018	X	X							
CFSB-178	844490.86	1546911.66	Phase II	6/25/2018	X	X							
CFSB-179	844595.24	1546156.83	Phase II	6/25/2018	X	X							
CFSB-180	845152.43	1545837.08	Phase II	6/25/2018	X	X							
CFSB-181	845840.13	1544588.75	Phase II	6/26/2018	X	X							
CFSB-182	846078.54	1544221.52	Phase II	6/26/2018	X	X							
CFSB-183	846266.56	1543988.02	Phase II	6/26/2018	X	X							
CFSB-184	846497.81	1543575.71	Phase II	6/26/2018	X	X							
CFSB-185	846981.75	1543103.39	Phase II	6/26/2018	X	X							
CFSB-186	847183.33	1542545.51	Phase II	6/26/2018	X	X							
CFSB-187	847308.33	1542048.98	Phase II	6/27/2018	X	X							
CFSB-188	847293.59	1541586.07	Phase II	6/27/2018	X	X							
CFSB-189	845114.25	1544179.96	Phase II	6/27/2018	X	X							
CFSB-189	845114.25	1544179.96	Phase II	9/27/2018	X	X							
CFSB-190	845006.87	1542658.26	Phase II	6/27/2018	X	X							
CFSB-190	845006.87	1542658.26	Phase II	9/27/2018	X	X							
CFSB-191	841585.08	1547799.56	Phase II	6/22/2018	X	X							
CFSB-192	841813.62	1547616.89	Phase II	6/22/2018	X	X							
CFSB-193	841932.24	1548519.98	Phase II	6/27/2018	X	X							
CFSB-194	842124.40	1548801.29	Phase II	6/27/2018	X	X							
CFSB-195	842403.55	1548368.94	Phase II	6/27/2018	X	X							
CFSB-196	840795.67	1547439.35	Phase II	6/27/2018	X	X							
CFSB-196	840795.67	1547439.35	Phase II	9/27/2018	X	X							
CFSB-197	840369.50	1545672.80	Phase II	6/21/2018	X	X							
CFSB-198	841208.84	1545878.46	Phase II	6/21/2018	X	X							
CFSB-199	841704.65	1545428.56	Phase II	6/28/2018	X	X							
CFSB-200	841651.40	1545726.05	Phase II	6/28/2018	X	X							
CFSB-201	841052.75	1545713.19	Phase II	6/22/2018	X	X							
CFSB-202	841434.71	1545676.47	Phase II	6/22/2018	X	X							
CFSB-203	842532.84	1545178.82	Phase II	6/28/2018	X	X							
CFSB-204	841276.79	1545509.36	Phase II	6/22/2018	X	X							
CFSB-205	841957.95	1543271.52	Phase II	6/27/2018	X	X							
CFSB-205	841957.95	1543271.52	Phase II	9/26/2018	X	X							
CFSB-206	842022.96	1544008.32	Phase II	6/22/2018	X	X							
CFSB-207	843128.17	1542605.92	Phase II	4/28/2018	X	X							
CFSB-208	843758.44	1542454.37	Phase II	4/28/2018	X	X							
CFSB-209	845605.89	1544243.67	Phase II	6/26/2018	X	X							
CFSB-210	845756.54	1543849.86	Phase II	6/26/2018	X	X							
CFSB-211	845928.33	1543463.99	Phase II	6/26/2018	X	X							
CFSB-212	846364.01	1542993.54	Phase II	6/26/2018	X	X							
CFSB-213	842037.86	1544671.83	Phase II	6/22/2018	X	X							
CFSB-214	843395.38	1544940.65	Phase II	6/22/2018	X	X							
CFSB-215	838227.49	1544215.74	Phase II	6/21/2018	X	X							
CFSB-216	839914.76	1544655.35	Phase II	6/21/2018	X	X							
CFSB-217	840007.58	1544949.45	Phase II	6/21/2018	X	X							
CFSB-218	840386.16	1545793.99	Phase II	6/21/2018	X	X							
CFSB-219	843605.42	1547087.27	Phase II	6/16/2018	X	X							
CFSB-220	842769.51	1547189.98	Phase II	6/22/2018	X	X							
CFSB-221	842761.78	1546701.86	Phase II	5/7/2018	X								
CFSB-221A	842747.78	1546701.86	Phase II	6/28/2018	X		X (2.5-3.5)						
CFSB-222	842702.64	1545941.44	Phase II	5/7/2018	X	X							
CFSB-223	844222.47	1545071.82	Phase II	5/7/2018	X	X							
CFSB-224	844063.58	1545178.82	Phase II	5/7/2018	X	X							
CFSB-225	843734.63	1545138.89	Phase II	5/7/2018	X	X							
CFSB-226	843759.80	1545230.90	Phase II	5/7/2018	X	X							
CFSB-227	843806.67	1545297.74	Phase II	5/7/2018	X	X							
CFSB-228	843483.34	1545460.80	Phase II	5/7/2018	X	X							
CFSB-229	843691.22	1545359.39	Phase II	5/7/2018	X	X							
CFSB-230	843474.21	1545508.68	Phase II	5/7/2018	X	X							
CFSB-231	842386.83	1543193.54	Phase II	4/28/2018	X	X							
CFSB-232	842182.06	1542941.83	Phase II	4/28/2018	X	X							

**Table 1. Summary of Soil Samples Collected During Phase I SC, SSPA, and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Sample Location	Easting (X)	Northing (Y)	Phase	Date Completed	Surface (0 - 0.5 ft bls)	Shallow (0.5 - 2 ft bls)	Intermediate (6 - 8 ft bls)	Intermediate (10 - 12 ft bls)	Deep (15 - 17 ft bls)	Deep (20 - 22 ft bls)	Above Water Table (Interval Varies)	In Screened Interval (Interval Varies)	Notes
CFSB-235	842498.53	1542714.34	Phase II	4/28/2018	X	X							
CFSB-234	844288.57	1542438.74	Phase II	4/28/2018	X	X							
CFSB-235	844701.88	1542765.66	Phase II	4/28/2018	X	X							
CFSB-236	844684.16	1543149.37	Phase II	4/28/2018	X	X							
CFSB-237	837530.50	1544002.61	Phase II	6/21/2018	X	X							
CFSB-238	837549.51	1542856.19	Phase II	9/27/2018	X	X							
CFSB-238	837549.51	1542856.19	Phase II	9/25/2018	X	X							
CFSB-238a	837549.51	1542856.19	Phase II	9/25/2018	X	X	X (3.5-4)						
CFSB-238	837549.51	1542856.19	Phase II	9/27/2018	X	X							
CFSB-239	838440.57	1542869.78	Phase II	9/27/2018	X	X							
CFSB-239	838440.57	1542869.78	Phase II	9/27/2018	X	X							
CFSB-240	844845.33	1543227.15	Phase II	5/10/2018	X	X		X					
CFSB-241	842036.52	1545997.06	Phase II	5/5/2018	X	X		X					
CFSB-242	840594.59	1542111.58	Phase II	5/10/2018	X	X		X					
CFSB-243	845470.00	1542205.33	Phase II	5/10/2018	X	X		X					
CFSB-244	840525.56	1543691.44	Phase II	5/9/2018	X	X		X					
CFSB-245	840529.03	1544476.16	Phase II	5/8/2018	X	X		X					
CFSB-246	841334.59	1544480.58	Phase II	5/8/2018	X	X		X					
CFSB-247	841338.06	1543896.30	Phase II	5/9/2018	X	X		X					
CFSB-248	840859.49	1546634.44	Phase II	5/1/2018	X	X		X					
CFSB-249	841226.95	1547944.91	Phase II	5/1/2018	X	X		X					
CFSB-250	841516.20	1548026.20	Phase II	5/1/2018	X	X		X					
CFSB-251	841216.53	1547309.50	Phase II	5/1/2018	X	X		X					
CFSB-252	842178.34	1547639.36	Phase II	5/1/2018	X	X		X					
CFSB-253	842268.62	1548618.52	Phase II	5/1/2018	X	X		X					
CFSB-254	842518.62	1548940.75	Phase II	4/30/2018	X	X		X					
CFSB-255	842538.33	1549708.86	Phase II	4/30/2018	X	X		X					
CFSB-256	842185.75	1549310.99	Phase II	4/30/2018	X	X		X					
CFSB-257	842570.22	1548792.27	Phase II	4/30/2018	X	X		X					
CFSB-258	842921.49	1548047.83	Phase II	4/30/2018	X	X		X					
CFSB-259	843143.92	1547619.72	Phase II	4/30/2018	X	X		X					
CFSB-260	841781.28	1545888.41	Phase II	5/5/2018	X	X		X					
CFSB-261	842933.16	1546126.37	Phase II	5/2/2018	X	X		X					
CFSB-262	842978.97	1546625.23	Phase II	5/2/2018	X	X	X	X					
CFSB-263	843039.65	1545599.37	Phase II	5/2/2018	X	X		X					
CFSB-264	843967.24	1545929.89	Phase II	5/3/2018	X	X		X					
CFSB-265	844446.00	1545239.76	Phase II	5/3/2018	X	X	X	X					
CFSB-266	844872.87	1543673.86	Phase II	5/10/2018	X	X		X					
CFSB-267	845367.30	1541798.97	Phase II	5/10/2018	X	X		X					
CFSB-268	846730.03	1541739.26	Phase II	5/10/2018	X	X		X					
CFSB-269	847095.74	1541663.14	Phase II	5/9/2018	X	X		X					
CFSB-270	842982.46	1546210.44	Phase II	5/2/2018	X	X	X	X					
CFSB-271	843036.42	1546110.71	Phase II	5/2/2018	X	X		X					
CFSB-272	842048.80	1545280.08	Phase II	5/4/2018	X	X	X	X		X			
CFSB-272	842048.80	1545280.08	Phase II	6/28/2018	X	X							
CFSB-273	842937.13	1545142.48	Phase II	5/4/2018	X	X	X	X		X			
CFSB-273	842937.13	1545142.48	Phase II	6/22/2018	X	X							
CFSB-274	843072.53	1544490.82	Phase II	5/11/2018	X	X	X	X		X			
CFSB-274	843072.53	1544490.82	Phase II	9/28/2018	X	X							
CFSB-275	843056.38	1544695.18	Phase II	5/11/2018	X	X	X	X		X			
CFSB-275	843056.38	1544695.18	Phase II	9/28/2018	X	X							
CFSB-276	843171.01	1544836.92	Phase II	5/11/2018	X	X	X	X		X			
CFSB-276	843171.01	1544836.92	Phase II	9/28/2018	X	X							
CFSB-277	843636.12	1545120.47	Phase II	5/3/2018	X	X	X	X		X			
CFSB-278	843642.73	1544460.00	Phase II	5/11/2018	X	X	X	X		X			
CFSB-278	843642.73	1544460.00	Phase II	9/28/2018	X	X							
CFSB-279	841421.58	1545419.67	Phase II	5/8/2018	X	X	X	X					
CFSB-279	841421.58	1545419.67	Phase II	5/19/2018						X			
CFSB-279	841421.58	1545419.67	Phase II	6/22/2018	X	X							
CFSB-280	841083.23	1545409.38	Phase II	5/8/2018	X	X	X						
CFSB-280	841083.23	1545499.38	Phase II	5/19/2018				X		X			
CFSB-280	841083.23	1545499.38	Phase II	6/22/2018	X	X							
CFSB-281	843118.60	1545116.30	Phase II	5/4/2018	X	X	X	X		X			
CFSB-281	843118.60	1545116.30	Phase II	6/22/2018	X	X							
CFSB-282	845667.42	1544148.40	Phase II	6/16/2018	X								
CFSB-283	844875.26	1545127.69	Phase II	6/16/2018	X								
CFSB-284	843818.14	1546671.67	Phase II	6/16/2018	X								
CFSB-285	844399.88	1543754.85	Phase II	5/11/2018			X (12-14)	X (17-19)		X (22-24)			
CFSB-287	843433.45	1544293.29	Phase II	5/18/2018			X (17-19)	X (20-22)		X (22-24)			
CFSB-288	842416.80	1544815.21	Phase II	6/28/2018	X	X	X (8-10)	X (17-19)		X (30-32)	X (45-47)		
CFSB-288	842416.80	1544815.21	Phase II	9/27/2018	X	X							
CFSB-289	844169.31	1544888.34	Phase II	6/28/2018	X	X							
CFSB-289	844169.31	1544888.34	Phase II	9/27/2018	X	X							
CFSB-290	843774.93	1545013.70	Phase II	6/28/2018	X	X							
CFSB-290	843774.93	1545013.70	Phase II	9/27/2018	X	X							
CFSB-291	843436.18	1545251.37	Phase II	6/22/2018	X	X							
CFSB-292	845896.13	1545461.66	Phase II	6/22/2018	X	X							
CFSB-293	844633.81	1542401.21	Phase II	9/27/2018	X	X							
CFSB-294	845038.46	1543079.48	Phase II	9/27/2018	X	X							

**Table 2. Summary of Surface Water Samples Collected During Phase I SC, SSPA, and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Sample Location	Surface Water Feature	Easting (X)	Northing (Y)	Date Completed Phase I Round 1 (June and September 2016)	Date Completed Phase I Round 2 (December 2016)
CFBSWP-001	Background Cedar Creek	837900.33	1568977.64	NA	NA
CFBSWP-002	Background Cedar Creek	837914.39	1568728.14	NA	NA
CFBSWP-003	Background Cedar Creek	837199.42	1567714.99	NA	NA
CFBSWP-004	Background Cedar Creek	837160.27	1567516.26	NA	NA
CFBSWP-005	Background Cedar Creek	836771.10	1565706.60	NA	NA
CFBSWP-006	Background Cedar Creek	836485.46	1562550.88	NA	NA
CFBSWP-007	Background Cedar Creek	836674.91	1562940.08	NA	NA
CFBSWP-008	Background Cedar Creek	836693.23	1565124.42	NA	NA
CFBSWP-009	Background Cedar Creek	836119.52	1561081.31	NA	NA
CFBSWP-010	Background Cedar Creek	836194.11	1559647.27	NA	NA
CFBSWP-011	Background Flathead River	848894.13	1540910.75	NA	NA
CFBSWP-012	Background Flathead River	849088.99	1540906.02	NA	NA
CFBSWP-013	Background Flathead River	851253.95	1541450.19	NA	NA
CFBSWP-014	Background Flathead River	851303.56	1541475.00	NA	NA
CFBSWP-015	Background Flathead River	852904.66	1541934.06	NA	NA
CFBSWP-016	Background Flathead River	852799.48	1541632.60	NA	NA
CFBSWP-017	Background Flathead River	852014.98	1541297.74	NA	NA
CFBSWP-018	Background Flathead River	851223.90	1540843.06	NA	NA
CFBSWP-019	Background Flathead River	850789.67	1540593.90	NA	NA
CFBSWP-020	Background Flathead River	849590.54	1540522.51	NA	NA
CFSWP-001	Flathead River	837515.45	1541519.03	09/16/2016	12/2/2016
CFSWP-002	Flathead River	839247.99	1542221.11	09/16/2016	12/2/2016
CFSWP-003	Backwater Seep Area	841222.96	1542580.89	09/09/2016	12/1/2016
CFSWP-004	Backwater Seep Area	841519.71	1542511.20	09/09/2016	12/1/2016
CFSWP-005	Backwater Seep Area	841750.19	1542466.20	09/09/2016	12/1/2016
CFSWP-006	Flathead River	842669.31	1541366.40	09/09/2016	12/1/2016
CFSWP-007	Flathead River	844295.37	1541448.21	09/16/2016	12/2/2016
CFSWP-008	Flathead River	846341.05	1541371.29	09/16/2016	12/2/2016
CFSWP-009	Cedar Creek Reservoir Overflow	847178.77	1541832.83	06/07/2016	DRY

**Table 2. Summary of Surface Water Samples Collected During Phase I SC, SSPA, and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Sample Location	Surface Water Feature	Easting (X)	Northing (Y)	Date Completed Phase I Round 1 (June and September 2016)	Date Completed Phase I Round 2 (December 2016)
CFSWP-010	Cedar Creek Reservoir Overflow	845470.80	1544890.45	06/07/2016	DRY
CFSWP-011	Cedar Creek Reservoir Overflow	844378.72	1545872.98	06/07/2016	DRY
CFSWP-012	Cedar Creek Reservoir Overflow	843804.14	1546685.67	06/07/2016	DRY
CFSWP-013	Cedar Creek Reservoir Overflow	842704.52	1549158.48	06/07/2016	11/30/2016
CFSWP-014	Cedar Creek	841853.84	1549436.43	08/29/2016	11/30/2016
CFSWP-014	Cedar Creek	841853.84	1549436.43	NA	NA
CFSWP-015	Cedar Creek	839775.37	1547339.70	08/29/2016	11/30/2016
CFSWP-015	Cedar Creek	839775.37	1547339.70	NA	12/20/2016
CFSWP-016	Cedar Creek	838518.65	1544961.51	08/29/2016	11/30/2016
CFSWP-017	Flathead River	847583.57	1541140.57	09/16/2016	12/2/2016
CFSWP-018	South Percolation Ponds	843337.27	1542057.38	06/06/2016	12/1/2016
CFSWP-019	South Percolation Ponds	843616.88	1542012.07	06/06/2016	12/1/2016
CFSWP-020	South Percolation Ponds	845138.85	1541609.45	06/06/2016	12/1/2016
CFSWP-021	Northern SW Feature	842086.08	1546939.68	06/06/2016	11/30/2016
CFSWP-022	Northern SW Feature	841593.68	1546664.65	06/06/2016	DRY
CFSWP-023	North-West Percolation Pond	841199.23	1545395.55	DRY	DRY
CFSWP-024	North-East Percolation Pond	843147.08	1545075.44	DRY	DRY
CFSWP-025	Cedar Creek	840154.83	1547870.91	NA	12/20/2016
CFSWP-026	Backwater Seep Area	840627.05	1542639.37	NA	NA
CFSWP-027	Backwater Seep Area	840831.27	1542631.94	NA	NA
CFSWP-028	Backwater Seep Area	841011.21	1542609.15	NA	NA
CFSWP-029	Riparian Sampling Area	841891.73	1542394.59	NA	NA
CFSWP-030	Riparian Sampling Area	842183.39	1542302.92	NA	NA
CFSWP-031	Riparian Sampling Area	842377.81	1542125.30	NA	NA
CFSWP-032	Riparian Sampling Area	842786.75	1542024.22	NA	NA
CFSWP-033	Riparian Sampling Area	842581.55	1541919.51	NA	NA
CFSWP-034	Flathead River	838755.33	1542204.72	NA	NA
CFSWP-035	Flathead River	840221.32	1542585.34	NA	NA
CFSWP-036	Flathead River	841701.78	1541632.78	NA	NA

**Table 2. Summary of Surface Water Samples Collected During Phase I SC, SSPA, and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Sample Location	Surface Water Feature	Easting (X)	Northing (Y)	Date Completed Phase I Round 1 (June and September 2016)	Date Completed Phase I Round 2 (December 2016)
CFSWP-037	Flathead River	843692.96	1541455.91	NA	NA
CFSWP-038	Flathead River	844949.72	1541344.47	NA	NA
CFSWP-039	Cedar Creek Reservoir Overflow	846744.41	1542995.37	NA	NA
CFSWP-040	Cedar Creek Reservoir Overflow	845674.24	1544142.76	NA	NA
CFSWP-041	Cedar Creek Reservoir Overflow	844861.26	1545141.69	NA	NA
CFSWP-042	Cedar Creek Reservoir Overflow	842881.10	1548465.12	NA	NA
CFSWP-043	Cedar Creek Reservoir Overflow	842409.79	1549842.37	NA	NA
CFSWP-044	Cedar Creek	839826.05	1547513.38	NA	NA
CFSWP-044	Cedar Creek	839826.05	1547513.38	NA	NA
CFSWP-045	Cedar Creek	839713.94	1547188.30	NA	NA
CFSWP-045	Cedar Creek	839713.94	1547188.30	NA	NA
CFSWP-046	Northern SW Feature	842336.44	1547529.18	NA	NA
CFSWP-047	Northern SW Feature	842323.05	1547241.46	NA	NA
CFSWP-048	Northern SW Feature	841850.52	1546666.80	NA	NA
CFSWP-049	Northern SW Feature	841435.75	1546766.66	NA	NA
CFSWP-050	Northern SW Feature	842099.72	1546604.16	NA	NA
CFSWP-051	Northern SW Feature	841918.61	1546487.05	NA	NA
CFSWP-052	Northern SW Feature	841678.10	1546497.55	NA	NA
CFSWP-053	Northern SW Feature	841510.97	1546428.84	NA	NA
CFSWP-054	North-West Percolation Pond	841171.93	1545617.41	NA	NA
CFSWP-055	North-West Percolation Pond	841399.03	1545537.11	NA	NA
CFSWP-056	North-East Percolation Pond	842938.59	1545032.59	NA	NA
CFSWP-057	North-East Percolation Pond	842988.94	1545166.59	NA	NA
CFSWP-058	South Percolation Ponds	844786.32	1541684.00	NA	NA
CFSWP-059	South Percolation Ponds	844509.45	1541772.20	NA	NA
CFSWP-060	South Percolation Ponds	844219.81	1541855.86	NA	NA

**Table 2. Summary of Surface Water Samples Collected During Phase I SC, SSPA, and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Sample Location	Surface Water Feature	Date Completed Phase I Round 3 (March and April 2017)	Date Completed Phase I Round 4 (June 2017)	Date Completed South Pond Assessment (October 2017)	Date Completed Phase II Round 1 (June 2018)
CFBWP-001	Background Cedar Creek	NA	NA	NA	6/13/2018
CFBWP-002	Background Cedar Creek	NA	NA	NA	6/13/2018
CFBWP-003	Background Cedar Creek	NA	NA	NA	6/13/2018
CFBWP-004	Background Cedar Creek	NA	NA	NA	6/13/2018
CFBWP-005	Background Cedar Creek	NA	NA	NA	6/13/2018
CFBWP-006	Background Cedar Creek	NA	NA	NA	6/12/2018
CFBWP-007	Background Cedar Creek	NA	NA	NA	6/12/2018
CFBWP-008	Background Cedar Creek	NA	NA	NA	6/13/2018
CFBWP-009	Background Cedar Creek	NA	NA	NA	6/12/2018
CFBWP-010	Background Cedar Creek	NA	NA	NA	6/12/2018
CFBWP-011	Background Flathead River	NA	NA	NA	6/7/2018
CFBWP-012	Background Flathead River	NA	NA	NA	6/7/2018
CFBWP-013	Background Flathead River	NA	NA	NA	6/8/2018
CFBWP-014	Background Flathead River	NA	NA	NA	6/8/2018
CFBWP-015	Background Flathead River	NA	NA	NA	6/8/2018
CFBWP-016	Background Flathead River	NA	NA	NA	6/7/2018
CFBWP-017	Background Flathead River	NA	NA	NA	6/7/2018
CFBWP-018	Background Flathead River	NA	NA	NA	6/7/2018
CFBWP-019	Background Flathead River	NA	NA	NA	6/7/2018
CFBWP-020	Background Flathead River	NA	NA	NA	6/7/2018
CFSWP-001	Flathead River	4/4/2017	6/14/2017	NA	6/7/2018
CFSWP-002	Flathead River	4/4/2017	6/14/2017	NA	6/7/2018
CFSWP-003	Backwater Seep Area	3/16/2017	6/14/2017	10/31/2017	6/6/2018
CFSWP-004	Backwater Seep Area	3/16/2017	6/14/2017	10/31/2017	6/6/2018
CFSWP-005	Backwater Seep Area	3/16/2017	6/14/2017	11/1/2017	6/6/2018
CFSWP-006	Flathead River	3/16/2017	6/14/2017	NA	6/6/2018
CFSWP-007	Flathead River	3/16/2017	6/14/2017	NA	6/7/2018
CFSWP-008	Flathead River	4/4/2017	6/14/2017	NA	6/7/2018
CFSWP-009	Cedar Creek Reservoir Overflow	4/3/2017	6/12/2017	NA	6/14/2018

**Table 2. Summary of Surface Water Samples Collected During Phase I SC, SSPA, and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Sample Location	Surface Water Feature	Date Completed Phase I Round 3 (March and April 2017)	Date Completed Phase I Round 4 (June 2017)	Date Completed South Pond Assessment (October 2017)	Date Completed Phase II Round 1 (June 2018)
CFSWP-010	Cedar Creek Reservoir Overflow	3/15/2017	6/12/2017	NA	6/14/2018
CFSWP-011	Cedar Creek Reservoir Overflow	4/3/2017	6/12/2017	NA	6/14/2018
CFSWP-012	Cedar Creek Reservoir Overflow	4/3/2017	6/12/2017	NA	6/14/2018
CFSWP-013	Cedar Creek Reservoir Overflow	3/15/2017	6/12/2017	NA	6/14/2018
CFSWP-014	Cedar Creek	3/13/2017	6/13/2017	NA	6/11/2018
CFSWP-014	Cedar Creek	NA	NA	NA	NA
CFSWP-015	Cedar Creek	3/13/2017	6/13/2017	NA	6/11/2018
CFSWP-015	Cedar Creek	NA	NA	NA	NA
CFSWP-016	Cedar Creek	3/13/2017	6/12/2017	NA	6/12/2018
CFSWP-017	Flathead River	4/4/2017	6/14/2017	NA	6/7/2018
CFSWP-018	South Percolation Ponds	4/3/2017	6/15/2017	DRY	6/21/2018
CFSWP-019	South Percolation Ponds	4/3/2017	6/15/2017	11/7/2017	6/21/2018
CFSWP-020	South Percolation Ponds	3/16/2017	6/15/2017	11/7/2017	6/21/2018
CFSWP-021	Northern SW Feature	3/15/2017	6/15/2017	NA	6/19/2018
CFSWP-022	Northern SW Feature	4/3/2017	DRY	NA	6/20/2018
CFSWP-023	North-West Percolation Pond	4/3/2017	DRY	NA	DRY
CFSWP-024	North-East Percolation Pond	DRY	6/15/2017	NA	DRY
CFSWP-025	Cedar Creek	3/13/2017	6/13/2017	NA	6/12/2018
CFSWP-026	Backwater Seep Area	NA	NA	10/31/2017	6/7/2018
CFSWP-027	Backwater Seep Area	NA	NA	10/31/2017	6/6/2018
CFSWP-028	Backwater Seep Area	NA	NA	10/31/2017	6/6/2018
CFSWP-029	Riparian Sampling Area	NA	NA	11/1/2017	6/22/2018
CFSWP-030	Riparian Sampling Area	NA	NA	11/3/2017	6/22/2018
CFSWP-031	Riparian Sampling Area	NA	NA	11/3/2017	6/22/2018
CFSWP-032	Riparian Sampling Area	NA	NA	11/3/2017	6/22/2018
CFSWP-033	Riparian Sampling Area	NA	NA	11/3/2017	6/22/2018
CFSWP-034	Flathead River	NA	NA	NA	6/7/2018
CFSWP-035	Flathead River	NA	NA	NA	6/7/2018
CFSWP-036	Flathead River	NA	NA	NA	6/6/2018

**Table 2. Summary of Surface Water Samples Collected During Phase I SC, SSPA, and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Sample Location	Surface Water Feature	Date Completed Phase I Round 3 (March and April 2017)	Date Completed Phase I Round 4 (June 2017)	Date Completed South Pond Assessment (October 2017)	Date Completed Phase II Round 1 (June 2018)
CFSWP-037	Flathead River	NA	NA	NA	6/6/2018
CFSWP-038	Flathead River	NA	NA	NA	6/7/2018
CFSWP-039	Cedar Creek Reservoir Overflow	NA	NA	NA	6/15/2018
CFSWP-040	Cedar Creek Reservoir Overflow	NA	NA	NA	6/15/2018
CFSWP-041	Cedar Creek Reservoir Overflow	NA	NA	NA	6/14/2018
CFSWP-042	Cedar Creek Reservoir Overflow	NA	NA	NA	6/14/2018
CFSWP-043	Cedar Creek Reservoir Overflow	NA	NA	NA	6/14/2018
CFSWP-044	Cedar Creek	NA	NA	NA	6/11/2018
CFSWP-044	Cedar Creek	NA	NA	NA	NA
CFSWP-045	Cedar Creek	NA	NA	NA	6/11/2018
CFSWP-045	Cedar Creek	NA	NA	NA	NA
CFSWP-046	Northern SW Feature	NA	NA	NA	6/19/2018
CFSWP-047	Northern SW Feature	NA	NA	NA	6/19/2018
CFSWP-048	Northern SW Feature	NA	NA	NA	6/20/2018
CFSWP-049	Northern SW Feature	NA	NA	NA	6/20/2018
CFSWP-050	Northern SW Feature	NA	NA	NA	6/21/2018
CFSWP-051	Northern SW Feature	NA	NA	NA	6/21/2018
CFSWP-052	Northern SW Feature	NA	NA	NA	6/18/2018
CFSWP-053	Northern SW Feature	NA	NA	NA	6/18/2018
CFSWP-054	North-West Percolation Pond	NA	NA	NA	DRY
CFSWP-055	North-West Percolation Pond	NA	NA	NA	DRY
CFSWP-056	North-East Percolation Pond	NA	NA	NA	DRY
CFSWP-057	North-East Percolation Pond	NA	NA	NA	DRY
CFSWP-058	South Percolation Ponds	NA	NA	NA	6/21/2018
CFSWP-059	South Percolation Ponds	NA	NA	NA	6/22/2018
CFSWP-060	South Percolation Ponds	NA	NA	NA	6/22/2018

**Table 2. Summary of Surface Water Samples Collected During Phase I SC, SSPA, and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Sample Location	Surface Water Feature	Date Completed Phase II Round 2 (October 2018)
CFBWP-001	Background Cedar Creek	10/15/2018
CFBWP-002	Background Cedar Creek	10/15/2018
CFBWP-003	Background Cedar Creek	10/15/2018
CFBWP-004	Background Cedar Creek	10/12/2018
CFBWP-005	Background Cedar Creek	10/15/2018
CFBWP-006	Background Cedar Creek	10/12/2018
CFBWP-007	Background Cedar Creek	10/12/2018
CFBWP-008	Background Cedar Creek	10/15/2018
CFBWP-009	Background Cedar Creek	10/12/2018
CFBWP-010	Background Cedar Creek	10/12/2018
CFBWP-011	Background Flathead River	10/2/2018
CFBWP-012	Background Flathead River	10/2/2018
CFBWP-013	Background Flathead River	10/2/2018
CFBWP-014	Background Flathead River	10/2/2018
CFBWP-015	Background Flathead River	10/2/2018
CFBWP-016	Background Flathead River	10/2/2018
CFBWP-017	Background Flathead River	10/2/2018
CFBWP-018	Background Flathead River	10/2/2018
CFBWP-019	Background Flathead River	10/2/2018
CFBWP-020	Background Flathead River	10/2/2018
CFSWP-001	Flathead River	10/5/2018
CFSWP-002	Flathead River	10/5/2018
CFSWP-003	Backwater Seep Area	10/4/2018
CFSWP-004	Backwater Seep Area	10/4/2018
CFSWP-005	Backwater Seep Area	10/18/2018
CFSWP-006	Flathead River	10/4/2018
CFSWP-007	Flathead River	10/3/2018
CFSWP-008	Flathead River	10/3/2018
CFSWP-009	Cedar Creek Reservoir Overflow	DRY

**Table 2. Summary of Surface Water Samples Collected During Phase I SC, SSPA, and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Sample Location	Surface Water Feature	Date Completed Phase II Round 2 (October 2018)
CFSWP-010	Cedar Creek Reservoir Overflow	DRY
CFSWP-011	Cedar Creek Reservoir Overflow	DRY
CFSWP-012	Cedar Creek Reservoir Overflow	DRY
CFSWP-013	Cedar Creek Reservoir Overflow	DRY
CFSWP-014	Cedar Creek	10/10/2018
CFSWP-014	Cedar Creek	10/16/2018
CFSWP-015	Cedar Creek	10/9/2018
CFSWP-015	Cedar Creek	10/16/2018
CFSWP-016	Cedar Creek	10/9/2018
CFSWP-017	Flathead River	10/3/2018
CFSWP-018	South Percolation Ponds	10/17/2018
CFSWP-019	South Percolation Ponds	10/16/2018
CFSWP-020	South Percolation Ponds	10/11/2018
CFSWP-021	Northern SW Feature	DRY
CFSWP-022	Northern SW Feature	DRY
CFSWP-023	North-West Percolation Pond	DRY
CFSWP-024	North-East Percolation Pond	DRY
CFSWP-025	Cedar Creek	10/10/2018
CFSWP-026	Backwater Seep Area	10/5/2018
CFSWP-027	Backwater Seep Area	10/5/2018
CFSWP-028	Backwater Seep Area	10/4/2018
CFSWP-029	Riparian Sampling Area	10/18/2018
CFSWP-030	Riparian Sampling Area	10/18/2018
CFSWP-031	Riparian Sampling Area	10/18/2018
CFSWP-032	Riparian Sampling Area	10/17/2018
CFSWP-033	Riparian Sampling Area	10/17/2018
CFSWP-034	Flathead River	10/5/2018
CFSWP-035	Flathead River	10/5/2018
CFSWP-036	Flathead River	10/4/2018

**Table 2. Summary of Surface Water Samples Collected During Phase I SC, SSPA, and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Sample Location	Surface Water Feature	Date Completed Phase II Round 2 (October 2018)
CFSWP-037	Flathead River	10/3/2018
CFSWP-038	Flathead River	10/3/2018
CFSWP-039	Cedar Creek Reservoir Overflow	10/11/2018
CFSWP-040	Cedar Creek Reservoir Overflow	DRY
CFSWP-041	Cedar Creek Reservoir Overflow	DRY
CFSWP-042	Cedar Creek Reservoir Overflow	DRY
CFSWP-043	Cedar Creek Reservoir Overflow	DRY
CFSWP-044	Cedar Creek	10/10/2018
CFSWP-044	Cedar Creek	10/16/2018
CFSWP-045	Cedar Creek	10/9/2018
CFSWP-045	Cedar Creek	10/16/2018
CFSWP-046	Northern SW Feature	DRY
CFSWP-047	Northern SW Feature	DRY
CFSWP-048	Northern SW Feature	DRY
CFSWP-049	Northern SW Feature	DRY
CFSWP-050	Northern SW Feature	DRY
CFSWP-051	Northern SW Feature	DRY
CFSWP-052	Northern SW Feature	DRY
CFSWP-053	Northern SW Feature	DRY
CFSWP-054	North-West Percolation Pond	DRY
CFSWP-055	North-West Percolation Pond	DRY
CFSWP-056	North-East Percolation Pond	DRY
CFSWP-057	North-East Percolation Pond	DRY
CFSWP-058	South Percolation Ponds	10/11/2018
CFSWP-059	South Percolation Ponds	10/11/2018
CFSWP-060	South Percolation Ponds	10/16/2018

**Table 3. Summary of Sediment Samples Collected During Phase I SC, SSPA, and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Proposed Location ID	Field Sample ID	Sample Type	Surface Water Feature	Easting (X)	Northing (Y)	Date Completed Phase I (September 2016)	Date Completed South Pond Assessment (October 2017)	Date Completed Phase II (June and October 2018)
CFBSWP-001	CFBSPD-001	Background Sediment	Background Cedar Creek	837900.33	1568977.64	NA	NA	10/15/2018
CFBSWP-002	CFBSPD-002	Background Sediment	Background Cedar Creek	837914.39	1568728.14	NA	NA	10/15/2018
CFBSWP-003	CFBSPD-003	Background Sediment	Background Cedar Creek	837199.42	1567714.99	NA	NA	10/15/2018
CFBSWP-004	CFBSPD-004	Background Sediment	Background Cedar Creek	837160.27	1567516.26	NA	NA	10/12/2018
CFBSWP-005	CFBSPD-005	Background Sediment	Background Cedar Creek	836771.10	1565706.60	NA	NA	10/15/2018
CFBSWP-006	CFBSPD-006	Background Sediment	Background Cedar Creek	836485.46	1562550.88	NA	NA	10/12/2018
CFBSWP-007	CFBSPD-007	Background Sediment	Background Cedar Creek	836674.91	1562940.08	NA	NA	10/12/2018
CFBSWP-008	CFBSPD-008	Background Sediment	Background Cedar Creek	836693.23	1565124.42	NA	NA	10/15/2018
CFBSWP-009	CFBSPD-009	Background Sediment	Background Cedar Creek	836119.52	1561081.31	NA	NA	10/12/2018
CFBSWP-010	CFBSPD-010	Background Sediment	Background Cedar Creek	836194.11	1559647.27	NA	NA	10/12/2018
CFBSWP-011	CFBSPD-011	Background Sediment	Background Flathead River	848894.13	1540910.75	NA	NA	10/2/2018
CFBSWP-012	CFBSPD-012	Background Sediment	Background Flathead River	849088.99	1540906.02	NA	NA	10/2/2018
CFBSWP-013	CFBSPD-013	Background Sediment	Background Flathead River	851253.95	1541450.19	NA	NA	10/2/2018
CFBSWP-014	CFBSPD-014	Background Sediment	Background Flathead River	851303.56	1541475.00	NA	NA	10/2/2018
CFBSWP-015	CFBSPD-015	Background Sediment	Background Flathead River	852904.66	1541934.06	NA	NA	10/2/2018
CFBSWP-016	CFBSPD-016	Background Sediment	Background Flathead River	852799.48	1541632.60	NA	NA	10/2/2018
CFBSWP-017	CFBSPD-017	Background Sediment	Background Flathead River	852014.98	1541297.74	NA	NA	10/2/2018
CFBSWP-018	CFBSPD-018	Background Sediment	Background Flathead River	851223.90	1540843.06	NA	NA	10/2/2018
CFBSWP-019	CFBSPD-019	Background Sediment	Background Flathead River	850789.67	1540593.90	NA	NA	10/2/2018
CFBSWP-020	CFBSPD-020	Background Sediment	Background Flathead River	849590.54	1540522.51	NA	NA	10/2/2018
CFSWP-001	CFSDP-001	Sediment	Flathead River	837515.45	1541519.03	NA	NA	10/5/2018
CFSWP-002	CFSDP-002	Sediment	Flathead River	839247.99	1542221.11	NA	NA	10/5/2018
CFSWP-003	CFSDP-003	Sediment	Backwater Seep Area	841222.96	1542580.89	9/9/2016	10/31/2017	10/4/2018
CFSWP-004	CFSDP-004	Sediment	Backwater Seep Area	841519.71	1542511.20	9/9/2016	10/31/2017	10/4/2018
CFSWP-005	CFSDP-005	Sediment	Backwater Seep Area	841750.19	1542466.20	9/9/2016	11/1/2017	10/18/2018
CFSWP-006	CFSDP-006	Sediment	Flathead River	842669.31	1541366.40	9/9/2016	NA	10/4/2018
CFSWP-007	CFSDP-007	Sediment	Flathead River	844295.37	1541448.21	NA	NA	10/3/2018
CFSWP-008	CFSDP-008	Sediment	Flathead River	846341.05	1541371.29	NA	NA	10/3/2018
CFSWP-014	CFSDP-014	Sediment	Cedar Creek	841853.84	1549436.43	8/29/2016	NA	10/10/2018
CFSWP-015	CFSDP-015	Sediment	Cedar Creek	839775.37	1547339.70	8/29/2016	NA	10/9/2018
CFSWP-016	CFSDP-016	Sediment	Cedar Creek	838518.65	1544961.51	8/29/2016	NA	10/9/2018
CFSWP-017	CFSDP-017	Sediment	Flathead River	847583.57	1541140.57	NA	NA	10/3/2018
CFSWP-018	CFSDP-018	Sediment	South Percolation Ponds	843337.27	1542057.38	9/7/2016	11/7/2017	10/17/2018
CFSWP-019	CFSDP-019	Sediment	South Percolation Ponds	843616.88	1542012.07	9/7/2016	11/7/2017	10/16/2018
CFSWP-020	CFSDP-020	Sediment	South Percolation Ponds	845138.85	1541609.45	9/7/2016	11/7/2017	10/11/2018
CFSWP-021	CFSDP-021	Sediment	Northern Surface Water Feature	842086.08	1546939.68	NA	NA	6/19/2018
CFSWP-022	CFSDP-022	Sediment	Northern Surface Water Feature	841593.68	1546664.65	NA	NA	6/20/2018
CFSWP-023	CFSDP-023	Sediment	North-West Percolation Pond	841199.23	1545395.55	9/7/2016	NA	NA
CFSWP-024	CFSDP-024	Sediment	North-East Percolation Pond	843147.08	1545075.44	9/7/2016	NA	NA
CFSWP-025	CFSDP-025	Sediment	Cedar Creek	840154.83	1547870.91	NA	NA	10/10/2018
CFSWP-026	CFSDP-026	Sediment	Backwater Seep Area	840627.05	1542639.37	NA	10/31/2017	10/5/2018
CFSWP-027	CFSDP-027	Sediment	Backwater Seep Area	840831.27	1542631.94	NA	10/31/2017	10/5/2018
CFSWP-028	CFSDP-028	Sediment	Backwater Seep Area	841011.21	1542609.15	NA	10/31/2017	10/4/2018
CFSWP-029	CFSDP-029	Sediment	Riparian Sampling Area	841891.73	1542394.59	NA	11/1/2017	10/18/2018
CFSWP-030	CFSDP-030	Sediment	Riparian Sampling Area	842183.39	1542302.92	NA	11/3/2017	10/18/2018
CFSWP-031	CFSDP-031	Sediment	Riparian Sampling Area	842377.81	1542125.30	NA	11/3/2017	10/18/2018
CFSWP-032	CFSDP-032	Sediment	Riparian Sampling Area	842786.75	1542024.22	NA	11/3/2017	10/17/2018
CFSWP-033	CFSDP-033	Sediment	Riparian Sampling Area	842581.55	1541919.51	NA	11/3/2017	10/17/2018
CFSWP-034	CFSDP-034	Sediment	Flathead River	838755.33	1542204.72	NA	NA	10/5/2018
CFSWP-035	CFSDP-035	Sediment	Flathead River	840221.32	1542585.34	NA	NA	10/5/2018
CFSWP-036	CFSDP-036	Sediment	Flathead River	841701.78	1541632.78	NA	NA	10/4/2018
CFSWP-037	CFSDP-037	Sediment	Flathead River	843692.96	1541455.91	NA	NA	10/3/2018
CFSWP-038	CFSDP-038	Sediment	Flathead River	844949.72	1541344.47	NA	NA	10/3/2018
CFSWP-044	CFSDP-044	Sediment	Cedar Creek	839826.05	1547513.38	NA	NA	10/10/2018
CFSWP-045	CFSDP-045	Sediment	Cedar Creek	839713.94	1547188.30	NA	NA	10/9/2018
CFSWP-046	CFSDP-046	Sediment	Northern Surface Water Feature	842336.44	1547529.18	NA	NA	6/19/2018
CFSWP-047	CFSDP-047	Sediment	Northern Surface Water Feature	842323.05	1547241.46	NA	NA	6/19/2018
CFSWP-048	CFSDP-048	Sediment	Northern Surface Water Feature	841850.52	1546666.80	NA	NA	6/20/2018
CFSWP-049	CFSDP-049	Sediment	Northern Surface Water Feature	841435.75	1546766.66	NA	NA	6/20/2018
CFSWP-050	CFSDP-050	Sediment	Northern Surface Water Feature	842099.72	1546604.16	NA	NA	6/21/2018
CFSWP-051	CFSDP-051	Sediment	Northern Surface Water Feature	841918.61	1546487.05	NA	NA	6/21/2018
CFSWP-052	CFSDP-052	Sediment	Northern Surface Water Feature	841678.10	1546497.55	NA	NA	6/18/2018
CFSWP-053	CFSDP-053	Sediment	Northern Surface Water Feature	841510.97	1546428.84	NA	NA	6/18/2018
CFSWP-058	CFSDP-058	Sediment	South Percolation Ponds	844786.32	1541684.00	NA	NA	10/11/2018
CFSWP-059	CFSDP-059	Sediment	South Percolation Ponds	844509.45	1541772.20	NA	NA	10/11/2018
CFSWP-060	CFSDP-060	Sediment	South Percolation Ponds	844219.81	1541855.86	NA	NA	10/16/2018
CFSB-149	CFSB-149	Sediment	South Percolation Ponds	844812.32	1541682.00	NA	11/7/2017	NA
CFSB-150	CFSB-150	Sediment	South Percolation Ponds	844535.45	1541770.20	NA	11/7/2017	NA

Table 4. Monitoring Well Construction Data - Screened Intervals and Survey Data
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Location	Previous Well ID	Location Type	Unit	Closest Site Feature	Date Surveyed	Surveyor	Northing (Y)	Easting (X)	Top of Casing Elevation (ft-amsl)
CFMW-001	W2-CFMW1	Existing Monitoring Well	Upper Unit	Industrial Landfill	8/1/2016	Sands	1549228.859	842170.366	3173.783
CFMW-002	--	Phase I Monitoring Well	Upper Unit	Drum Storage Area	7/6/2016	Sands	1546021.158	843027.354	3145.580
CFMW-003	--	Phase I Monitoring Well	Upper Unit	Industrial Landfill	7/6/2016	Sands	1547594.617	841640.301	3144.950
CFMW-003a	--	Phase I Monitoring Well	Below Upper Unit	Industrial Landfill	7/6/2016	Sands	1547603.170	841647.493	3145.570
CFMW-007	TW3	Existing Monitoring Well	Upper Unit	West Landfill	8/1/2016	Sands	1546426.597	843029.760	3149.199
CFMW-008	TW9	Existing Monitoring Well	Upper Unit	Sanitary Landfill	7/6/2016	Sands	1546564.756	844032.614	3192.970
CFMW-008a	--	Phase I Monitoring Well	Upper Unit	Sanitary Landfill	7/6/2016	Sands	1546575.278	844043.577	3196.440
CFMW-010	--	Phase I Monitoring Well	Upper Unit	Drum Storage Area	7/6/2016	Sands	1546115.479	842986.314	3147.060
CFMW-011	--	Phase I Monitoring Well	Upper Unit	Drum Storage Area	7/6/2016	Sands	1545989.982	842462.741	3103.410
CFMW-011a	--	Phase I Monitoring Well	Below Upper Unit	Drum Storage Area	7/6/2016	Sands	1545990.300	842455.026	3103.650
CFMW-012	W11-TW17	Existing Monitoring Well	Upper Unit	Wet Scrubber Sludge Pond	7/6/2016	Sands	1545999.738	843116.466	3142.480
CFMW-012a	--	Phase I Monitoring Well	Below Upper Unit	Wet Scrubber Sludge Pond	7/6/2016	Sands	1545978.652	843111.473	3142.760
CFMW-014	W3-TW20	Existing Monitoring Well	Upper Unit	Drum Storage Area	8/1/2016	Sands	1545822.378	842858.322	3142.310
CFMW-015	W4-TW21	Existing Monitoring Well	Upper Unit	Wet Scrubber Sludge Pond	8/1/2016	Sands	1545790.290	843070.037	3140.650
CFMW-016	--	Phase I Monitoring Well	Upper Unit	Center Landfill	7/6/2016	Sands	1545847.943	843955.534	3166.590
CFMW-016a	--	Phase I Monitoring Well	Upper Unit	Center Landfill	7/6/2016	Sands	1545856.544	843955.402	3167.110
CFMW-017	TW14	Existing Monitoring Well	Upper Unit	Center Landfill	8/1/2016	Sands	1545913.137	844140.867	3210.569
CFMW-018	--	Phase I Monitoring Well	Upper Unit	East Landfill	7/6/2016	Sands	1545750.745	844586.938	3212.810
CFMW-019	W5-TW15	Existing Monitoring Well	Upper Unit	Wet Scrubber Sludge Pond	8/1/2016	Sands	1545555.121	843277.960	3137.810
CFMW-019a	--	Phase I Monitoring Well	Below Upper Unit	Wet Scrubber Sludge Pond	7/6/2016	Sands	1545565.436	843291.647	3138.980
CFMW-020	TW8	Existing Monitoring Well	Upper Unit	Wet Scrubber Sludge Pond	8/1/2016	Sands	1545748.365	844071.614	3168.737
CFMW-021	W6-TW18	Existing Monitoring Well	Upper Unit	Wet Scrubber Sludge Pond	8/1/2016	Sands	1545558.392	843505.246	3138.155
CFMW-022	--	Phase I Monitoring Well	Upper Unit	East Landfill	7/6/2016	Sands	1545314.578	843942.176	3137.320
CFMW-023	TW10	Existing Monitoring Well	Upper Unit	South Leachate Pond	8/1/2016	Sands	1545521.210	844694.956	3209.982
CFMW-025	TW23	Existing Monitoring Well	Upper Unit	North-West Percolation Pond	8/1/2016	Sands	1545240.341	840912.165	3103.541
CFMW-025a	--	Phase I Monitoring Well	Below Upper Unit	North-West Percolation Pond	8/1/2016	Sands	1545217.964	840914.892	3104.198
CFMW-025b	W10-TW22	Existing Monitoring Well	Upper Unit	North-West Percolation Pond	7/6/2016	Sands	1545233.747	840916.756	3103.660
CFMW-026	--	Phase I Monitoring Well	Upper Unit	North-West Percolation Pond	7/6/2016	Sands	1545199.463	841222.779	3104.260
CFMW-027	--	Phase I Monitoring Well	Upper Unit	Overflow Ditch	7/6/2016	Sands	1545251.431	842166.064	3097.110
CFMW-028	--	Phase I Monitoring Well	Upper Unit	North-East Percolation Pond	8/1/2016	Sands	1544970.966	843041.414	3108.699
CFMW-028a	--	Phase I Monitoring Well	Upper Unit	North-East Percolation Pond	8/1/2016	Sands	1544970.077	843049.717	3108.660
CFMW-029	--	Phase I Monitoring Well	Upper Unit	North-East Percolation Pond	7/6/2016	Sands	1545108.045	843463.411	3133.040
CFMW-031	W0-CFMW2	Existing Monitoring Well	Upper Unit	North-East Percolation Pond	8/1/2016	Sands	1544867.601	842797.671	3109.490
CFMW-032	--	Phase I Monitoring Well	Upper Unit	Raw Materials Loading/ Unloading	8/29/2016	Sands	1544745.320	843964.007	3116.578
CFMW-032a	--	Phase I Monitoring Well	Below Upper Unit	Raw Materials Loading/ Unloading	8/29/2016	Sands	1544744.536	843973.334	3116.805
CFMW-033	--	Phase I Monitoring Well	Upper Unit	Paste Plant	7/6/2016	Sands	1544545.111	842408.017	3110.640

Table 4. Monitoring Well Construction Data - Screened Intervals and Survey Data
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Location	Previous Well ID	Location Type	Unit	Closest Site Feature	Date Surveyed	Surveyor	Northing (Y)	Easting (X)	Top of Casing Elevation (ft-amsl)
CFMW-034	--	Phase I Monitoring Well	Upper Unit	Fueling Area	7/6/2016	Sands	1544513.493	843342.204	3109.990
CFMW-035	--	Phase I Monitoring Well	Upper Unit	Main Plant Area	7/6/2016	Sands	1544499.012	844447.319	3109.920
CFMW-036	W1-PW7	Existing Former Production Well	Production Well	South Percolation Ponds	EPA Report	EPA Report	1541629.329	843914.647	3021.600
CFMW-037	--	Phase I Monitoring Well	Upper Unit	Main Plant Area	7/6/2016	Sands	1543140.324	844473.946	3113.640
CFMW-038	--	Phase I Monitoring Well	Upper Unit	Rectifier Yards	7/6/2016	Sands	1543075.138	843981.359	3113.770
CFMW-040	--	Phase I Monitoring Well	Upper Unit	Rectifier Yards	7/6/2016	Sands	1543076.822	842863.264	3113.720
CFMW-042	--	Phase I Monitoring Well	Upper Unit	Main Plant Area	7/6/2016	Sands	1543285.825	842383.655	3110.340
CFMW-043	--	Phase I Monitoring Well	Upper Unit	West Percolation Pond	7/6/2016	Sands	1544078.364	842157.850	3109.910
CFMW-044	W8-TW2	Existing Monitoring Well	Upper Unit	West Percolation Pond	8/1/2016	Sands	1543941.726	841700.388	3108.093
CFMW-044a	--	Phase I Monitoring Well	Upper Unit	West Percolation Pond	8/1/2016	Sands	1543941.659	841685.038	3108.716
CFMW-044b	TW1	Existing Monitoring Well	Below Upper Unit	Main Plant Area	8/1/2016	Sands	1543937.612	841699.554	3107.979
CFMW-045	--	Phase I Monitoring Well	Upper Unit	Rectifier Yards	8/29/2016	Sands	1542768.892	842543.665	3113.750
CFMW-045a	--	Phase I Monitoring Well	Upper Unit	Rectifier Yards	8/29/2016	Sands	1542768.562	842554.018	3113.934
CFMW-047	--	Phase I Monitoring Well	Upper Unit	Rectifier Yards	7/6/2016	Sands	1542470.126	844332.708	3117.180
CFMW-048	PW3	Existing Former Production Well	Production Well	Rectifier yards	EPA Report	EPA Report	1542485.180	844497.403	3106.850
CFMW-049	W7-TW19	Existing Monitoring Well	Upper Unit	Rectifier yards	8/1/2016	Sands	1542470.637	844793.481	3122.693
CFMW-049a	--	Phase I Monitoring Well	Upper Unit	Rectifier Yards	8/29/2016	Sands	1542484.164	844793.737	3122.691
CFMW-050	--	Phase I Monitoring Well	Upper Unit	Main Plant Area	7/6/2016	Sands	1542299.178	844928.802	3123.120
CFMW-051	W9-PW5	Existing Former Production Well	Production Well	South Percolation Ponds	EPA Report	EPA Report	1542149.083	845500.048	3123.250
CFMW-052	PW4	Existing Former Production Well	Production Well	South Percolation Ponds	EPA Report	EPA Report	1542121.449	846201.695	3139.470
CFMW-053	TW16	Existing Monitoring Well	Upper Unit	Rod Mill	8/1/2016	Sands	1542974.491	841601.392	3111.227
CFMW-053a	--	Phase I Monitoring Well	Below Upper Unit	Rod Mill	8/29/2016	Sands	1542988.456	841600.660	3112.061
CFMW-054	--	Phase I Monitoring Well	Upper Unit	Rod Mill	7/6/2016	Sands	1542966.021	841003.141	3112.670
CFMW-056	TW11	Existing Monitoring Well	Below Upper Unit	Aluminum City	8/1/2016	Sands	1544572.964	839789.319	3101.349
CFMW-056a	--	Phase I Monitoring Well	Below Upper Unit	Aluminum City	8/1/2016	Sands	1544587.443	839786.440	3101.079
CFMW-056b	--	Phase I Monitoring Well	Upper Unit	Aluminum City	8/1/2016	Sands	1544590.852	839778.849	3101.199
CFMW-057	TW12	Existing Monitoring Well	Below Upper Unit	Aluminum City	8/1/2016	Sands	1543626.421	837706.038	3094.937
CFMW-057a	--	Phase I Monitoring Well	Below Upper Unit	Aluminum City	8/29/2016	Sands	1543635.868	837689.701	3094.774
CFMW-057b	--	Phase II Monitoring Well	Upper Unit	Aluminum City	5/22/2018	Sands	1543667.532	837625.006	3094.242
CFMW-059	--	Phase I Monitoring Well	Upper Unit	Aluminum City	8/1/2016	Sands	1542120.760	837611.730	3119.421
CFMW-059a	--	Phase I Monitoring Well	Below Upper Unit	Aluminum City	8/1/2016	Sands	1542123.943	837619.424	3119.178
CFMW-061	--	Phase I Monitoring Well	Upper Unit	South Percolation Ponds	8/1/2016	Sands	1541698.045	843728.230	3027.378
CFMW-062	PW6	Existing Former Production Well	Production Well	South Percolation Ponds	EPA Report	EPA Report	1541841.609	843927.216	3021.600
CFMW-064	--	Phase I Monitoring Well	Upper Unit	South Percolation Ponds	8/29/2016	Sands	1541612.776	844718.875	3029.141
CFMW-065	--	Phase II Monitoring Well	Upper Unit	Western Undeveloped Area	5/22/2018	Sands	1546255.406	840320.1463	3106.2737
CFMW-066	--	Phase II Monitoring Well	Upper Unit	Industrial Landfill	5/22/2018	Sands	1548012.807	842286.8283	3162.4797

Table 4. Monitoring Well Construction Data - Screened Intervals and Survey Data
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Location	Previous Well ID	Location Type	Unit	Closest Site Feature	Date Surveyed	Surveyor	Northing (Y)	Easting (X)	Top of Casing Elevation (ft-amsl)
CFMW-067	--	Phase II Monitoring Well	Upper Unit	Industrial Landfill	5/22/2018	Sands	1548411.563	841767.2023	3166.9387
CFMW-068	--	Phase II Monitoring Well	Upper Unit	Western Undeveloped Area	5/22/2018	Sands	1542803.976	839346.5183	3120.0207
CFMW-069	--	Phase II Monitoring Well	Upper Unit	Western Undeveloped Area	5/22/2018	Sands	1543845.835	839211.6323	3101.6087
CFMW-070	--	Phase II Monitoring Well	Upper Unit	Main Plant Area	5/22/2018	Sands	1544758.39	843606.7063	3111.4047
CFMW-071	--	Phase II Monitoring Well	Upper Unit	Western Undeveloped Area	5/22/2018	Sands	1542961.841	840253.1463	3123.0857
Flathead Staff				Flathead River	8/1/2016	Sands	1541453.873	843980.286	3014.719

Table 4. Monitoring Well Construction Data - Screened Intervals and Survey Data
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Well Pad/ Ground Elevation (ft-amsl)	Well Depth (ft-bls)	Well Screen Top Depth (ft-bls)	Well Screen Top Elevation (ft-amsl)	Well Screen Bottom Depth (ft-bls)	Well Screen Bottom Elevation (ft-amsl)	Well Construction Source
3170.907	152.5	132.5	3038.407	152.5	3018.407	EPA Report/Old Well Log
3142.750	80	70	3072.75	80	3062.75	CFAC Phase I
3142.320	54	44	3098.32	54	3088.32	CFAC Phase I
3143.010	200	190	2953.01	200	2943.01	CFAC Phase I
3147.958	160	91	3056.958	102	3045.958	EPA Report/Old Well Log
3191.769	38.5	No Screen	No Screen	Open Bottom	Open Bottom	EPA Report/Old Well Log
3194.690	98	88	3106.69	98	3096.69	CFAC Phase I
3144.690	86	76	3068.69	86	3058.69	CFAC Phase I
3100.980	50	40	3060.98	50	3050.98	CFAC Phase I
3100.770	166	156	2944.77	166	2934.77	CFAC Phase I
3140.472	90	70	3070.472	85	3055.472	EPA Report/Old Well Log
3140.290	210	200	2940.29	210	2930.29	CFAC Phase I
3139.968	92	72	3067.968	87	3052.968	EPA Report/Old Well Log
3138.933	94	72	3066.933	87	3051.933	EPA Report/Old Well Log
3163.840	95	85	3078.84	95	3068.84	CFAC Phase I
3164.290	126	121	3043.29	126	3038.29	CFAC Phase I
3207.893	141	137	3070.893	141	3066.893	EPA Report/Old Well Log
3210.040	122	112	3098.04	122	3088.04	CFAC Phase I
3136.232	96	78	3058.232	88	3048.232	EPA Report/Old Well Log
3136.510	220	210	2926.51	220	2916.51	CFAC Phase I
3166.624	130	113	3053.624	118	3048.624	EPA Report/Old Well Log
3136.090	90	70	3066.09	85	3051.09	EPA Report/Old Well Log
3134.390	80	70	3064.39	80	3054.39	CFAC Phase I
3208.638	144.5	137.5	3071.138	143.25	3065.388	EPA Report
3101.160	24.5	9.5	3091.66	24.5	3076.66	EPA Report/Old Well Log
3101.489	95	85	3016.489	95	3006.489	CFAC Phase I
3101.599	60	45	3056.599	60	3041.599	EPA Report/Old Well Log
3101.580	45	35	3066.58	45	3056.58	CFAC Phase I
3094.380	45	35	3059.38	45	3049.38	CFAC Phase I
3105.991	60	50	3055.991	60	3045.991	CFAC Phase I
3105.916	120	110	2995.916	120	2985.916	CFAC Phase I
3130.520	76	66	3064.52	76	3054.52	CFAC Phase I
3107.820	50	35	3072.82	50	3057.82	EPA Report/Old Well Log
3114.020	55	45	3069.02	55	3059.02	CFAC Phase I
3114.095	205	195	2919.095	205	2909.095	CFAC Phase I
3107.970	60	50	3057.97	60	3047.97	CFAC Phase I

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Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Well Pad/ Ground Elevation (ft-amsl)	Well Depth (ft-bls)	Well Screen Top Depth (ft-bls)	Well Screen Top Elevation (ft-amsl)	Well Screen Bottom Depth (ft-bls)	Well Screen Bottom Elevation (ft-amsl)	Well Construction Source
3107.450	60	50	3057.45	60	3047.45	CFAC Phase I
3107.120	70	60	3047.12	70	3037.12	CFAC Phase I
3030.000	61.6	53.6	2968.00	61.60	2960.00	EPA Report
3110.870	100	90	3020.87	100	3010.87	CFAC Phase I
3110.880	105	95	3015.88	105	3005.88	CFAC Phase I
3111.050	90	80	3031.05	90	3021.05	CFAC Phase I
3107.520	60	50	3057.52	60	3047.52	CFAC Phase I
3106.970	60	50	3056.97	60	3046.97	CFAC Phase I
3105.883	53	No Screen	No Screen	Open Bottom	Open Bottom	EPA Report/Old Well Log
3106.109	110	100	3006.109	110	2996.109	CFAC Phase I
3105.262	>200	No Screen	No Screen	Open Bottom	Open Bottom	EPA Report/Old Well Log
3111.261	96	86	3025.261	96	3015.261	CFAC Phase I
3111.284	160	150	2961.284	160	2951.284	CFAC Phase I
3114.480	120	110	3004.48	120	2994.48	CFAC Phase I
3120.000	119.89	109.89	2996.960	119.89	2986.960	EPA Report
3120.165	113	100	3020.165	111	3009.165	EPA Report/Old Well Log
3120.493	148.5	138.5	2981.993	148.5	2971.993	CFAC Phase I
3120.240	120	110	3010.24	120	3000.24	CFAC Phase I
3136.000	162.07	137.9	2985.350	162.07	2961.180	EPA Report/Old Well Log
3152.000	174.98	154.19	2985.280	174.98	2964.490	Old Well Log
3109.649	77	47	3062.649	77	3032.649	EPA Report/Old Well Log
3109.666	160	150	2959.666	160	2949.666	CFAC Phase I
3109.920	85	75	3034.92	85	3024.92	CFAC Phase I
3098.851	181.08	No Screen	No Screen	Open Bottom	Open Bottom	EPA Report/Old Well Log
3098.671	135	125	2973.671	135	2963.671	CFAC Phase I
3098.599	50	40	3058.599	50	3048.599	CFAC Phase I
3092.563	185.75	Unknown	Unknown	Unknown	Unknown	EPA Report
3092.778	138	128	2964.778	138	2954.778	CFAC Phase I
3091.975	40	30	3061.9747	40	3051.9747	CFAC Phase II
3117.387	90	80	3037.387	90	3027.387	CFAC Phase I
3117.047	168	158	2959.047	168	2949.047	CFAC Phase I
3024.323	23	13	3011.323	23	3001.323	CFAC Phase I
3031.000	70.2	62.2	2959.400	70.2	2951.400	Old Well Log
3026.002	30	20	3006.002	30	2996.002	CFAC Phase I
3104.18	37	27	3077.18	37	3067.18	CFAC Phase II
3160.26	35	25	3135.26	35	3125.26	CFAC Phase II

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Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Well Pad/ Ground Elevation (ft-amsl)	Well Depth (ft-bls)	Well Screen Top Depth (ft-bls)	Well Screen Top Elevation (ft-amsl)	Well Screen Bottom Depth (ft-bls)	Well Screen Bottom Elevation (ft-amsl)	Well Construction Source
3164.91	35	25	3139.91	35	3129.91	CFAC Phase II
3118.13	85	75	3043.13	85	3033.13	CFAC Phase II
3099.62	55	45	3054.62	55	3044.62	CFAC Phase II
3109.22	60	50	3059.22	60	3049.22	CFAC Phase II
3121.04	105	95	3026.04	105	3016.04	CFAC Phase II
1.600	NA	NA	NA	NA	NA	CFAC Phase I

**Table 5. Groundwater and Flathead River Elevation Data Measured During Phase I and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Location ID	Existing or Phase 1 Well	Unit	Easting (X)	Northing (Y)	August 30, 2016 DTW (ft-btoc)	August 30, 2016 DTB (ft-btoc)	August 30, 2016 Groundwater Elevation (ft-amsl)	November 29, 2016 DTW (ft-btoc)	November 29, 2016 DTB (ft-btoc)	November 29, 2016 Groundwater Elevation (ft-amsl)	March 14/15, 2017 DTW (ft-btoc)	March 14/15, 2017 DTB (ft-btoc)	March 14/15, 2017 Groundwater Elevation (ft-amsl)	June 16, 2017 DTW (ft-btoc)	June 16, 2017 DTB (ft-btoc)
CFMW-001	Existing Monitoring Well	Upper Unit	842170.37	1549228.86	98.53	155.2	3075.253	98.34	153.37	3075.443	98.37	153.18	3075.41	96.18	153
CFMW-002	Phase I Monitoring Well	Upper Unit	843027.35	1546021.16	80.3	82.65	3065.28	81.57	82.46	3064.01	DRY	82.49	DRY	68.25	82.48
CFMW-003	Phase I Monitoring Well	Upper Unit	841640.30	1547594.62	23.47	54.42	3121.48	22.12	54.45	3122.83	21.6	54.18	3123.35	18.85	54.18
CFMW-003a	Phase I Monitoring Well	Below Upper Unit	841647.49	1547603.17	151.4	203.21	2994.17	149.34	203.21	2996.23	148.21	203.15	2997.36	143.68	203.02
CFMW-007	Existing Monitoring Well	Upper Unit	843029.76	1546426.60	81.35	159.7	3067.849	76.2	159.14	3072.999	77.93	159.2	3071.27	52.95	159.3
CFMW-008	Existing Monitoring Well	Upper Unit	844032.61	1546564.76	93.6	189.21	3099.37	76.18	187.81	3116.79	66.06	187.37	3126.91	29.85	187.52
CFMW-008a	Phase I Monitoring Well	Upper Unit	844043.58	1546575.28	65.03	95.14	3131.41	64.01	95.4	3132.43	63.42	95.01	3133.02	63.2	99.36
CFMW-010	Phase I Monitoring Well	Upper Unit	842986.31	1546115.48	81.68	86.7	3065.38	82.8	86.4	3064.26	85.1	86.31	3061.96	68.1	86.85
CFMW-011	Phase I Monitoring Well	Upper Unit	842462.74	1545989.98	38.42	52.9	3064.99	40.02	52.88	3063.39	43.23	52.76	3060.18	28.41	52.79
CFMW-011a	Phase I Monitoring Well	Below Upper Unit	842455.03	1545990.30	100.55	171.12	3003.1	99.87	168.58	3003.78	98.7	168.98	3004.95	92.05	169.31
CFMW-012	Existing Monitoring Well	Upper Unit	843116.47	1545999.74	75.7	81.84	3066.78	77.06	81.89	3065.42	80.31	81.95	3062.17	65.5	81.91
CFMW-012a	Phase I Monitoring Well	Below Upper Unit	843111.47	1545978.65	145.34	213.4	2997.42	143.71	213.4	2999.05	142.65	213.37	3000.11	136.74	213.41
CFMW-014	Existing Monitoring Well	Upper Unit	842858.32	1545822.38	77.43	93.43	3064.88	78.97	93.41	3063.34	82.13	93.45	3060.18	67.18	93.4
CFMW-015	Existing Monitoring Well	Upper Unit	843070.04	1545790.29	75.57	94.56	3065.08	76.64	94.54	3064.01	79.68	94.64	3060.97	65.17	93.4
CFMW-016	Phase I Monitoring Well	Upper Unit	843955.53	1545847.94	97.7	98.82	3068.89	93.29	97.83	3073.3	93.93	97.83	3072.66	71.86	97.83
CFMW-016a	Phase I Monitoring Well	Upper Unit	843955.40	1545856.54	100.33	128.36	3066.78	93.79	128.35	3073.32	94.44	128.38	3072.67	72.49	128.38
CFMW-017	Existing Monitoring Well	Upper Unit	844140.87	1545913.14	DRY	140.88	DRY	137.02	140.92	3073.549	137.65	140.91	3072.92	116.13	140.95
CFMW-018	Phase I Monitoring Well	Upper Unit	844586.94	1545750.75	DRY	126.74	DRY	DRY	127.54	DRY	126.81	127.14	3086.00	120.07	126.83
CFMW-019	Existing Monitoring Well	Upper Unit	843277.96	1545555.12	73.38	96.5	3064.43	75.11	96.49	3062.7	77.94	96.43	3059.87	64.56	96.46
CFMW-019a	Phase I Monitoring Well	Below Upper Unit	843291.65	1545565.44	141.5	223.2	2997.48	139.91	223.25	2999.07	138.87	223.07	3000.11	132.27	223.01
CFMW-020	Existing Monitoring Well	Upper Unit	844071.61	1545748.37	102.05	132.63	3066.687	95.7	132.42	3073.037	96.38	136	3072.36	74.97	133.9
CFMW-021	Existing Monitoring Well	Upper Unit	843505.25	1545558.39	73.72	89.56	3064.435	75.38	89.59	3062.775	78.11	89.72	3060.05	64.9	89.88
CFMW-022	Phase I Monitoring Well	Upper Unit	843942.18	1545314.58	72.58	83.26	3064.74	73.16	83.22	3064.16	75.26	84	3062.06	61.62	83.3
CFMW-023	Existing Monitoring Well	Upper Unit	844694.96	1545521.21	125.4	142.96	3084.582	117.51	143.23	3092.472	117.92	143.02	3092.06	116.31	143.12
CFMW-025	Existing Monitoring Well	Upper Unit	840912.17	1545240.34	DRY	26.8	DRY	26.45	26.78	3077.091	24.44	25.16	3079.10	26.6	27.15
CFMW-025a	Phase I Monitoring Well	Below Upper Unit	840914.89	1545217.96	48.55	98.42	3055.648	56.68	98.43	3047.518	55.67	98.31	3048.53	39.59	98.28
CFMW-025b	Existing Monitoring Well	Upper Unit	840916.76	1545233.75	34.82	64.85	3068.84	33.93	64.55	3069.73	34.16	64.46	3069.50	29.9	64.15
CFMW-026	Phase I Monitoring Well	Upper Unit	841222.78	1545199.46	40.2	47.44	3064.06	42.42	47.43	3061.84	44.27	47.43	3059.99	32.55	47.41
CFMW-027	Phase I Monitoring Well	Upper Unit	842166.06	1545251.43	32.86	48.6	3064.25	34.77	48.59	3062.34	37.6	48.65	3059.51	24.69	48.6
CFMW-028	Phase I Monitoring Well	Upper Unit	843041.30	1544970.94	44.46	62.4	3064.239	46.39	62.39	3062.309	49.18	62.35	3059.52	36.32	62.39
CFMW-028a	Phase I Monitoring Well	Upper Unit	843049.72	1544970.08	44.31	122.62	3064.35	46.26	122.63	3062.4	48.98	122.37	3059.68	36.1	122.31
CFMW-029	Phase I Monitoring Well	Upper Unit	843463.41	1545108.04	68.6	73.12	3064.44	70.23	78.13	3062.81	72.93	78.3	3060.11	59.61	78.16
CFMW-031	Existing Monitoring Well	Upper Unit	842797.67	1544867.60	45.61	52.3	3063.88	47.81	52.29	3061.68	50.45	52.32	3059.04	38.44	52.3
CFMW-032	Phase I Monitoring Well	Upper Unit	843964.01	1544745.32	51.99	57.7	3064.588	54.1	57.68	3062.478	56.97	57.63	3059.61	43.07	57.61
CFMW-032a	Phase I Monitoring Well	Below Upper Unit	843973.33	1544744.54	112.32	206.53	3003.585	112.13	206.43	3004.675	111.8	206.65	3005.01	104.29	206.5
CFMW-033	Phase I Monitoring Well	Upper Unit	842408.02	1544545.11	46.88	63.59	3063.76	49.21	63.58	3061.43	51.85	63.61	3058.79	40.14	63.62
CFMW-034	Phase I Monitoring Well	Upper Unit	843342.20	1544513.49	48.23	62.48	3061.76	53.66	62.48	3056.33	57.3	62.49	3052.69	39.55	62.44
CFMW-035	Phase I Monitoring Well	Upper Unit	844447.32	1544499.01	46.56	70.6	3063.36	48.01	70.53	3061.91	50.64	70.55	3059.28	37.06	70.42
CFMW-036	Existing Former Production Well	Production Well	843889.77	1541576.63	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
CFMW-037	Phase I Monitoring Well	Upper Unit	844473.95	1543140.32	78.48	103.27	3035.16	85.8	103.25	3027.84	90.02	103.2	3023.62	61.95	103.21
CFMW-038	Phase I Monitoring Well	Upper Unit	843981.36	1543075.14	86.82	107.14	3026.95	89.51	106.71	3024.26	92.05	106.78	3021.72	82.47	106.76
CFMW-040	Phase I Monitoring Well	Upper Unit	842863.26	1543076.82	77.17	92.77	3036.55	81.71	92.88	3032.01	85.19	92.83	3028.53	68.91	92.76
CFMW-042	Phase I Monitoring Well	Upper Unit	842383.65	1543285.83	57.94	63.02	3052.4	DRY	63.03	DRY	DRY	63.05	DRY	46.77	62.99
CFMW-043	Phase I Monitoring Well	Upper Unit	842157.85	1544078.36	47.99	62.01	3061.92	52.39	62	3057.52	55.7	62.96	3054.21	43.02	62.01
CFMW-044	Existing Monitoring Well	Upper Unit	841700.39	1543941.73	48.07	54.16	3060.023	51.68	54.21	3056.413	DRY	54.12	DRY	41.7	54.15
CFMW-044a	Phase I Monitoring Well	Upper Unit	841685.04	1543941.66	52.32	112.97	3056.396	55.84	223.95	3052.876	58.85	112.88	3049.87	45.85	112.94
CFMW-044b	Existing Monitoring Well	Below Upper Unit	841699.55	1543937.61	63.95	241.01	3044.029	56.6	241.09	3051.379	68.17	241.68	3039.81	56.78	241.5
CFMW-045	Phase I Monitoring Well	Upper Unit	842543.66	1542768.89	83.78	100.08	3029.97	88.55	99.16	3025.2	91.42	99.3	3022.33	74.55	99.08
CFMW-045a	Phase I Monitoring Well	Upper Unit	842554.02	1542768.56	89.56	161.28	3024.374	91.05	161.27	3022.884	93.2	153.18	3020.73	82.6	161.29
CFMW-047	Phase I Monitoring Well	Upper Unit	844332.71	1542470.13	99.75	122.93	3017.43	99.46	122.95	3017.72	101.15	123.18	3016.03	94.22	123.13
CFMW-048	Existing Former Production Well	Production Well	844490.02	1542506.85	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
CFMW-049	Existing Monitoring Well	Upper Unit	844793.48	1542470.64	104.9	141.01	3017.793	103.25	113.99	3019.443	104.5	113.97	3018.19	92.98	114.01
CFMW-049a	Phase I Monitoring Well	Upper Unit	844793.74	1542484.16	105	151.1	3017.691	103.18	151.1	3019.511	104.35	151.07	3018.34	92.64	151.13
CFMW-050	Phase I Monitoring Well	Upper Unit	844928.80	1542299.18	105.78	123.37	3017.34	103.96	123.37	3019.16	105.13	123.35	3017.99	95.93	123.39
CFMW-051	Existing Former Production Well	Production Well	845527.06	1542146.47	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
CFMW-052	Existing Former Production Well	Production Well	846185.60	1542118.72	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
CFMW-053	Existing Monitoring Well	Upper Unit	841601.39	1542974.49	58.78	76.24	3052.447	72.65	78.24	3038.577	76.09	78.5	3035.14	47.57	76.18
CFMW-053a	Phase I Monitoring Well	Below Upper Unit	841600.66	1542988.46	88.3	162.5	3023.761	90.09	162.48	3021.971	91.65	162.45	3020.41	83.5	162.55
CFMW-054	Phase I Monitoring Well	Upper Unit	841003.14	1542966.02	73.77	87.55	3038.9	77.56	87.47	3035.11	81.35	87.4	3031.32	71.66	87.39
CFMW-056	Existing Monitoring Well	Below Upper Unit	839789.32	1544572.96	86.56	180.58	3014.789	85.43	180.61	3015.919	83.85	180.69	3017.50	75.06	180.06
CFMW-056a	Phase I Monitoring Well	Below Upper Unit	839786.44	1544587.44	79.96	137.4	3021.119	77.37	137.41	3022.379	77.35	137.33	3023.73	68.71	137.52
CFMW-056b	Phase I Monitoring Well	Upper Unit	839778.85	1544590.85	33.7	52.65	3067.499	35.27	52.62	3065.929	35.24	52.62	3065.96	27.38	52.6
CFMW-057	Existing Monitoring Well	Below Upper Unit	837706.04	1543626.42	83.81	184.4	3011.127	82.29	183.89	3012.647	80.51	183.8	3014.43	71.5	172.7
CFMW-057a	Phase I Monitoring Well	Below Upper Unit	837685.97	1543631.67	78.55	140.35	3016.224	77.28	140.36	3017.494	75.82	141.37	3018.95	66.52	140.41
CFMW-057b	Phase II Monitoring Well	Upper Unit	837625.01	1543667.53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CFMW-059	Phase I Monitoring Well	Below Upper Unit	837811.73	1542120.76	70.42	92.7	3049.001	70.82	92.71	3048.601	69.01	92.71	3050.41	62.99	92.66
CFMW-059a	Phase I Monitoring Well	Upper Unit	837631.49	1542130.69	73.05	162.98	3046.128	71.42	163.86	3047.758	68.9	163.85	3050.28	63.33	163.98
CFMW-061	Existing Former Production Well	Production Well	843728.23	1541698.05	13.82	28.04	3013.558	12.35	26.5	3015.028	12.54	26.05	3014.84	8.51	28.02
CFMW-062	Phase I Monitoring Well	Upper Unit	843895.11	1541546.04	NM	NM	NM	NM	NM						

**Table 5. Groundwater and Flathead River Elevation Data Measured During Phase I and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Location ID	Existing or Phase 1 Well	Unit	Easting (X)	Northing (Y)	August 30, 2016 DTW (ft-btoc)	August 30, 2016 DTB (ft-btoc)	August 30, 2016 Groundwater Elevation (ft-amsl)	November 29, 2016 DTW (ft-btoc)	November 29, 2016 DTB (ft-btoc)	November 29, 2016 Groundwater Elevation (ft-amsl)	March 14/15, 2017 DTW (ft-btoc)	March 14/15, 2017 DTB (ft-btoc)	March 14/15, 2017 Groundwater Elevation (ft-amsl)	June 16, 2017 DTW (ft-btoc)	June 16, 2017 DTB (ft-btoc)
CFMW-065	Phase II Monitoring Well	Upper Unit	840306.44	1546253.84	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CFMW-066	Phase II Monitoring Well	Upper Unit	842325.39	1548008.72	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CFMW-067	Phase II Monitoring Well	Upper Unit	841766.67	1548412.29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CFMW-068	Phase II Monitoring Well	Upper Unit	839377.38	1542808.89	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CFMW-069	Phase II Monitoring Well	Upper Unit	839190.13	1543836.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CFMW-070	Phase II Monitoring Well	Upper Unit	843602.54	1544760.63	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CFMW-071	Phase II Monitoring Well	Upper Unit	840266.87	1542936.88	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Flathead Staff			844025.00	1541460.00	1.12	NA	3014.239	2.65	NA	3015.769	2.55	NA	3015.67	0.5	NA

**Table 5. Groundwater and Flathead River Elevation Data Measured During Phase I and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Location ID	June 16, 2017 Groundwater Elevation (ft-amsl)	June 4/5, 2018 DTW (ft-btbc)	June 4/5, 2018 DTB (ft-btbc)	June 4/5, 2018 DTP (ft-btbc)	June 4/5, 2018 Product Elevation (ft-amsl)	June 4/5, 2018 Groundwater Elevation (ft-amsl)	October 1/2, 2018 DTW (ft-btbc)	October 1/2, 2018 DTB (ft-btbc)	October 1/2, 2018 DTP (ft-btbc)	October 1/2, 2018 Product Elevation (ft-amsl)	October 1/2, 2018 Groundwater Elevation (ft-amsl)
CFMW-001	3077.60	96.53	153.0	NA	NA	3077.253	97.89	152.9	NA	NA	3075.893
CFMW-002	3077.33	60.95	82.41	NA	NA	3084.63	82.46	82.52	NA	NA	3063.12
CFMW-003	3126.10	19.31	53	NA	NA	3125.64	23.36	53.39	NA	NA	3121.59
CFMW-003a	3001.89	145	203.2	NA	NA	3000.57	148.71	202.46	NA	NA	2996.86
CFMW-007	3096.25	35.52	159.2	NA	NA	3113.679	84.04	158.48	NA	NA	3065.159
CFMW-008	3163.12	53.39	191	NA	NA	3139.58	55.34	192.02	NA	NA	3137.63
CFMW-008a	3133.24	61.64	96.28	NA	NA	3134.8	65.28	94.26	NA	NA	3131.16
CFMW-010	3078.96	60.13	87.57	NA	NA	3086.93	83.87	86.83	NA	NA	3063.19
CFMW-011	3075.00	22.32	52.72	NA	NA	3081.09	40.57	52.18	NA	NA	3062.84
CFMW-011a	3011.60	92.85	171.52	NA	NA	3010.8	98.81	167.9	NA	NA	3004.84
CFMW-012	3076.98	58.55	87.76	NA	NA	3083.93	78.85	81.23	NA	NA	3063.63
CFMW-012a	3006.02	137.84	213.79	NA	NA	3004.92	143.26	212.62	NA	NA	2999.5
CFMW-014	3075.13	61.04	93.43	NA	NA	3081.27	79.54	92.91	NA	NA	3062.77
CFMW-015	3075.48	59.16	94.57	NA	NA	3081.49	77.65	93.93	NA	NA	3063
CFMW-016	3094.73	57.2	95.18	NA	NA	3109.39	DRY	98.03	NA	NA	DRY
CFMW-016a	3094.62	57.87	128.2	NA	NA	3109.24	103.16	128.41	NA	NA	3063.95
CFMW-017	3094.44	100.83	138.74	NA	NA	3109.739	DRY	140.27	NA	NA	Dry
CFMW-018	3092.74	109.21	129.12	NA	NA	3103.6	126.54	126.03	NA	NA	3086.27
CFMW-019	3073.25	60.02	96.29	NA	NA	3077.79	75.47	95.76	NA	NA	3062.34
CFMW-019a	3006.71	134	222.88	NA	NA	3004.98	139.43	222.65	NA	NA	2999.55
CFMW-020	3093.77	60.55	128.98	NA	NA	3108.187	104.73	131.89	NA	NA	3064.007
CFMW-021	3073.26	60.19	89.75	NA	NA	3077.965	75.7	89.08	NA	NA	3062.455
CFMW-022	3075.70	55.47	73.57	NA	NA	3081.85	74.64	82.63	NA	NA	3062.68
CFMW-023	3093.67	108.7	142.17	NA	NA	3101.282	130.28	142.35	NA	NA	3079.702
CFMW-025	3076.89	26.38	26.99	NA	NA	3077.109	26.85	27.09	NA	NA	3076.691
CFMW-025a	3064.61	37.01	98.09	NA	NA	3067.188	54.76	97.44	NA	NA	3049.438
CFMW-025b	3073.76	26.7	64.04	NA	NA	3076.96	35.78	60.85	NA	NA	3067.88
CFMW-026	3071.71	29.77	47.54	NA	NA	3074.49	41.93	46.72	NA	NA	3062.33
CFMW-027	3072.42	20.98	48.43	NA	NA	3076.13	34.9	48.57	NA	NA	3062.21
CFMW-028	3072.38	32.54	62.29	NA	NA	3076.159	46.5	61.7	NA	NA	3062.199
CFMW-028a	3072.56	32.09	123.38	NA	NA	3076.57	46.41	122.97	NA	NA	3062.25
CFMW-029	3073.43	54.91	77.58	NA	NA	3078.13	70.61	77	NA	NA	3062.43
CFMW-031	3071.05	29.67	52.51	NA	NA	3079.82	47.58	52.33	NA	NA	3061.91
CFMW-032	3073.51	38.31	57.58	NA	NA	3078.268	53.96	57.61	NA	NA	3062.618
CFMW-032a	3012.52	95.52	209.1	NA	NA	3021.285	106	206.62	NA	NA	3010.805
CFMW-033	3070.50	37.78	63.54	NA	NA	3072.86	48.76	63.44	NA	NA	3061.88
CFMW-034	3070.44	37.34	62.38	NA	NA	3072.65	50.74	62.34	NA	NA	3059.25
CFMW-035	3072.86	31.94	70.25	NA	NA	3077.98	48.33	70.18	NA	NA	3061.59
CFMW-036	NM	16.71	59.9	15.79	3017.13	3017.13	20.58	59.884	20.24	2947.42	3013.26
CFMW-037	3051.69	79.51	104.98	NA	NA	3034.13	82.32	102.42	NA	NA	3031.32
CFMW-038	3031.30	86.64	106.6	NA	NA	3027.13	87.79	106.05	NA	NA	3025.98
CFMW-040	3044.81	72.38	92.73	NA	NA	3041.34	78.97	93.12	NA	NA	3034.75
CFMW-042	3063.57	44.44	62.9	NA	NA	3065.9	60.87	62.92	NA	NA	3049.47
CFMW-043	3066.89	41.55	61.9	NA	NA	3068.36	50.23	61.99	NA	NA	3059.68
CFMW-044	3066.39	40.16	54.1	NA	NA	3067.933	49.71	54.19	NA	NA	3058.383
CFMW-044a	3062.87	44.79	172.3	NA	NA	3063.926	53.95	113.52	NA	NA	3054.766
CFMW-044b	3051.20	55.94	240.5	NA	NA	3052.039	65.44	240.62	NA	NA	3042.539
CFMW-045	3039.20	76.44	98.97	NA	NA	3037.31	86.49	99.02	NA	NA	3027.26
CFMW-045a	3031.33	83.88	155.36	NA	NA	3030.054	89.96	158.22	NA	NA	3023.974
CFMW-047	3022.96	94.5	123	NA	NA	3022.68	100.18	122.39	NA	NA	3017
CFMW-048	NM	83.23	126.25	NA	NA	3034.88	100.48	125.83	NA	NA	3017.63
CFMW-049	3029.71	85.92	113.92	NA	NA	3036.773	105.12	113.34	NA	NA	3017.573
CFMW-049a	3030.05	85.28	151	NA	NA	3037.411	104.23	155.26	NA	NA	3018.461
CFMW-050	3027.19	89.8	123.29	NA	NA	3033.32	105.8	122.75	NA	NA	3017.32
CFMW-051	NM	105.28	163.8	NA	NA	2929.26	117.04	168.31	NA	NA	2917.5
CFMW-052	NM	123.82	180	NA	NA	2927.5	133.79	179.78	NA	NA	2917.53
CFMW-053	3063.43	46	71.97	NA	NA	3064.997	65.73	75.57	NA	NA	3045.497
CFMW-053a	3028.56	82.25	162.4	NA	NA	3029.811	89.08	162.41	NA	NA	3022.981
CFMW-054	3041.01	72.33	87.43	NA	NA	3040.34	75.41	87.3	NA	NA	3037.26
CFMW-056	3026.29	76.84	179.9	NA	NA	3024.509	82.23	180.21	NA	NA	3019.119
CFMW-056a	3032.37	69.98	138.08	NA	NA	3031.099	75.66	136.63	NA	NA	3025.519
CFMW-056b	3073.82	26.16	52.55	NA	NA	3075.039	33.42	51.89	NA	NA	3067.779
CFMW-057	3023.44	73.9	180.1	NA	NA	3021.037	78.93	181.1	NA	NA	3016.007
CFMW-057a	3028.25	68.81	140.35	NA	NA	3025.964	73.16	139.67	NA	NA	3021.614
CFMW-057b	NA	17.42	42.28	NA	NA	3076.8217	24.06	42.29	NA	NA	3070.1817
CFMW-059	3056.43	64.1	92.55	NA	NA	3055.321	68.61	92.01	NA	NA	3050.811
CFMW-059a	3055.85	65.05	166.54	NA	NA	3054.128	69.41	168.14	NA	NA	3049.768
CFMW-061	3018.87	8.29	25.95	NA	NA	3019.088	13.76	25.43	NA	NA	3013.618
CFMW-062	NM	17.21	78.3	15.77	3016.65	3016.65	20.5	79.36	20.22	2938.9	3013.36

**Table 5. Groundwater and Flathead River Elevation Data Measured During Phase I and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Location ID	June 16, 2017 Groundwater Elevation (ft-amsl)	June 4/5, 2018 DTW (ft-btoc)	June 4/5, 2018 DTB (ft-btoc)	June 4/5, 2018 DTP (ft-btoc)	June 4/5, 2018 Product Elevation (ft-amsl)	June 4/5, 2018 Groundwater Elevation (ft-amsl)	October 1/2, 2018 DTW (ft-btoc)	October 1/2, 2018 DTB (ft-btoc)	October 1/2, 2018 DTP (ft-btoc)	October 1/2, 2018 Product Elevation (ft-amsl)	October 1/2, 2018 Groundwater Elevation (ft-amsl)
CFMW-065	NA	22.81	39.53	NA	NA	3083.4637	29.17	39.6	NA	NA	3077.1037
CFMW-066	NA	23.26	37.58	NA	NA	3139.2197	29.63	37.63	NA	NA	3132.8497
CFMW-067	NA	26.86	37.7	NA	NA	3140.0787	30.6	36.78	NA	NA	3136.3387
CFMW-068	NA	70.03	87.07	NA	NA	3049.9907	68.02	86.51	NA	NA	3052.0007
CFMW-069	NA	30.73	58.1	NA	NA	3070.8787	35.11	58.02	NA	NA	3066.4987
CFMW-070	NA	33.24	62.6	NA	NA	3078.1647	48.79	62.45	NA	NA	3062.6147
CFMW-071	NA	84.6	107.51	NA	NA	3038.4857	82.5	106.96	NA	NA	3040.5857
Flathead Staff	3019.08	NM	NA	NA	NA	NM	NM	NA	NA	NA	NM

Table 6. Summary of Groundwater Samples Collected During Phase I and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Location	Location Type	Unit	Easting (X)	Northing (Y)	Date Completed Phase I Round 1 (September 2016)	Date Completed Phase I Round 2 (December 2016)
CFMW-001	Existing Monitoring Well	Upper Unit	842170.37	1549228.86	9/20/2016	12/12/2017
CFMW-002	Phase I Monitoring Well	Upper Unit	843027.35	1546021.16	9/12/2016	Insufficient Water to sample
CFMW-003	Phase I Monitoring Well	Upper Unit	841640.30	1547594.62	9/14/2016	12/9/2016
CFMW-003a	Phase I Monitoring Well	Below Upper Unit	841647.49	1547603.17	9/20/2016	12/12/2016
CFMW-007	Existing Monitoring Well	Upper Unit	843029.76	1546426.60	9/21/2016	12/12/2016
CFMW-008	Existing Monitoring Well	Upper Unit	844032.61	1546564.76	9/21/2016	12/16/2016
CFMW-008a	Phase I Monitoring Well	Upper Unit	844043.58	1546575.28	9/15/2016	12/16/2016
CFMW-010	Phase I Monitoring Well	Upper Unit	842986.31	1546115.48	9/12/2016	12/15/2016
CFMW-011	Phase I Monitoring Well	Upper Unit	842462.74	1545989.98	9/13/2016	12/8/2016
CFMW-011a	Phase I Monitoring Well	Below Upper Unit	842455.03	1545990.30	9/20/2016	12/14/2016
CFMW-012	Existing Monitoring Well	Upper Unit	843116.47	1545999.74	9/12/2016	12/14/2016
CFMW-012a	Phase I Monitoring Well	Below Upper Unit	843111.47	1545978.65	9/15/2016	12/13/2016
CFMW-014	Existing Monitoring Well	Upper Unit	842858.32	1545822.38	9/12/2016	12/15/2016
CFMW-015	Existing Monitoring Well	Upper Unit	843070.04	1545790.29	9/12/2016	12/15/2016
CFMW-016	Phase I Monitoring Well	Upper Unit	843955.53	1545847.94	Insufficient Water to sample	Insufficient Water to sample
CFMW-016a	Phase I Monitoring Well	Upper Unit	843955.40	1545856.54	9/21/2016	12/14/2016
CFMW-017	Existing Monitoring Well	Upper Unit	844140.87	1545913.14	Insufficient Water to sample	Insufficient Water to sample
CFMW-018	Phase I Monitoring Well	Upper Unit	844586.94	1545750.75	Insufficient Water to sample	Insufficient Water to sample
CFMW-019	Existing Monitoring Well	Upper Unit	843277.96	1545555.12	9/12/2016	12/15/2016
CFMW-019a	Phase I Monitoring Well	Below Upper Unit	843291.65	1545565.44	9/20/2016	12/14/2016
CFMW-020	Existing Monitoring Well	Upper Unit	844071.61	1545748.37	9/20/2016	12/13/2016
CFMW-021	Existing Monitoring Well	Upper Unit	843505.25	1545558.39	9/12/2016	12/14/2016
CFMW-022	Phase I Monitoring Well	Upper Unit	843942.18	1545314.58	9/13/2016	12/9/2016
CFMW-023	Existing Monitoring Well	Upper Unit	844694.96	1545521.21	9/21/2016	12/19/2016
CFMW-025	Existing Monitoring Well	Upper Unit	840912.17	1545240.34	Insufficient Water to sample	Insufficient Water to sample
CFMW-025a	Phase I Monitoring Well	Below Upper Unit	840914.89	1545217.96	9/13/2016	12/5/2016
CFMW-025b	Existing Monitoring Well	Upper Unit	840916.76	1545233.75	9/13/2016	12/7/2016
CFMW-026	Phase I Monitoring Well	Upper Unit	841222.78	1545199.46	9/13/2016	12/5/2016
CFMW-027	Phase I Monitoring Well	Upper Unit	842166.06	1545251.43	9/13/2016	12/14/2016
CFMW-028	Phase I Monitoring Well	Upper Unit	843041.30	1544970.94	9/13/2016	12/5/2016
CFMW-028a	Phase I Monitoring Well	Upper Unit	843049.72	1544970.08	9/20/2016	12/9/2016
CFMW-029	Phase I Monitoring Well	Upper Unit	843463.41	1545108.04	9/13/2016	12/14/2016
CFMW-031	Existing Monitoring Well	Upper Unit	842797.67	1544867.60	9/15/2016	12/9/2016
CFMW-032	Phase I Monitoring Well	Upper Unit	843964.01	1544745.32	9/15/2016	12/13/2016

Table 6. Summary of Groundwater Samples Collected During Phase I and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Location	Location Type	Unit	Easting (X)	Northing (Y)	Date Completed Phase I Round 1 (September 2016)	Date Completed Phase I Round 2 (December 2016)
CFMW-032a	Phase I Monitoring Well	Below Upper Unit	843973.33	1544744.54	9/16/2016	12/16/2016
CFMW-033	Phase I Monitoring Well	Upper Unit	842408.02	1544545.11	9/15/2016	12/6/2016
CFMW-034	Phase I Monitoring Well	Upper Unit	843342.20	1544513.49	9/14/2016	12/13/2016
CFMW-035	Phase I Monitoring Well	Upper Unit	844447.32	1544499.01	9/13/2016	12/13/2016
CFMW-036	Existing Former Production Well	Production Well	843889.77	1541576.63	Not sampled	Not sampled
CFMW-037	Phase I Monitoring Well	Upper Unit	844473.95	1543140.32	9/16/2016	12/8/2016
CFMW-038	Phase I Monitoring Well	Upper Unit	843981.36	1543075.14	9/14/2016	12/9/2016
CFMW-040	Phase I Monitoring Well	Upper Unit	842863.26	1543076.82	9/14/2016	12/13/2016
CFMW-042	Phase I Monitoring Well	Upper Unit	842383.65	1543285.83	9/14/2016	Insufficient Water to sample
CFMW-043	Phase I Monitoring Well	Upper Unit	842157.85	1544078.36	9/13/2016	12/14/2016
CFMW-044	Existing Monitoring Well	Upper Unit	841700.39	1543941.73	9/15/2016	12/9/2016
CFMW-044a	Phase I Monitoring Well	Upper Unit	841685.04	1543941.66	9/19/2016	12/19/2016
CFMW-044b	Existing Monitoring Well	Below Upper Unit	841699.55	1543937.61	9/19/2016	12/19/2016
CFMW-045	Phase I Monitoring Well	Upper Unit	842543.66	1542768.89	9/15/2016	12/14/2016
CFMW-045a	Phase I Monitoring Well	Upper Unit	842554.02	1542768.56	9/19/2016	12/9/2016
CFMW-047	Phase I Monitoring Well	Upper Unit	844332.71	1542470.13	9/14/2016	12/15/2016
CFMW-048	Existing Former Production Well	Production Well	844490.02	1542506.85	Not sampled	Not sampled
CFMW-049	Existing Monitoring Well	Upper Unit	844793.48	1542470.64	9/21/2016	12/15/2016
CFMW-049a	Phase I Monitoring Well	Upper Unit	844793.74	1542484.16	9/16/2016	12/15/2016
CFMW-050	Phase I Monitoring Well	Upper Unit	844928.80	1542299.18	9/19/2016	12/15/2016
CFMW-051	Existing Former Production Well	Production Well	845527.06	1542146.47	Not sampled	Not sampled
CFMW-052	Existing Former Production Well	Production Well	846185.60	1542118.72	Not sampled	Not sampled
CFMW-053	Existing Monitoring Well	Upper Unit	841601.39	1542974.49	9/14/2016	12/12/2016
CFMW-053a	Phase I Monitoring Well	Below Upper Unit	841600.66	1542988.46	9/19/2016	12/19/2016
CFMW-054	Phase I Monitoring Well	Upper Unit	841003.14	1542966.02	9/14/2016	12/12/2016
CFMW-056	Existing Monitoring Well	Below Upper Unit	839789.32	1544572.96	9/20/2016	12/13/2016
CFMW-056a	Phase I Monitoring Well	Below Upper Unit	839786.44	1544587.44	9/20/2016	12/6/2016
CFMW-056b	Phase I Monitoring Well	Upper Unit	839778.85	1544590.85	9/13/2016	12/12/2016
CFMW-057	Existing Monitoring Well	Below Upper Unit	837706.04	1543626.42	9/19/2016	12/5/2016
CFMW-057a	Phase I Monitoring Well	Below Upper Unit	837685.97	1543631.67	9/19/2016	12/16/2016
CFMW-057b	Phase II Monitoring Well	Upper Unit	837625.01	1543667.53	Not installed	Not installed
CFMW-059	Phase I Monitoring Well	Upper Unit	837611.73	1542120.76	9/15/2016	12/12/2016
CFMW-059a	Phase I Monitoring Well	Below Upper Unit	837631.49	1542130.69	9/19/2016	12/16/2016
CFMW-061	Phase I Monitoring Well	Upper Unit	843728.23	1541698.05	9/15/2016	12/7/2016

**Table 6. Summary of Groundwater Samples Collected During Phase I and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Sample Location	Location Type	Unit	Easting (X)	Northing (Y)	Date Completed Phase I Round 1 (September 2016)	Date Completed Phase I Round 2 (December 2016)
CFMW-062	Existing Former Production Well	Production Well	843895.11	1541546.04	Not sampled	Not sampled
CFMW-064	Phase I Monitoring Well	Upper Unit	844717.84	1541616.87	9/15/2016	12/7/2016
CFMW-065	Phase II Monitoring Well	Upper Unit	840306.44	1546253.84	Not installed	Not installed
CFMW-066	Phase II Monitoring Well	Upper Unit	842325.39	1548008.72	Not installed	Not installed
CFMW-067	Phase II Monitoring Well	Upper Unit	841766.67	1548412.29	Not installed	Not installed
CFMW-068	Phase II Monitoring Well	Upper Unit	839377.38	1542808.89	Not installed	Not installed
CFMW-069	Phase II Monitoring Well	Upper Unit	839190.13	1543836.37	Not installed	Not installed
CFMW-070	Phase II Monitoring Well	Upper Unit	843602.54	1544760.63	Not installed	Not installed
CFMW-071	Phase II Monitoring Well	Upper Unit	840266.87	1542936.88	Not installed	Not installed

**Table 6. Summary of Groundwater Samples Collected During Phase I and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Sample Location	Location Type	Unit	Date Completed Phase I Round 3 (March 2017)	Date Completed Phase I Round 4 (June 2017)	Date Completed Phase II Round 1 (June 2018)
CFMW-001	Existing Monitoring Well	Upper Unit	3/20/2017	6/19/2017	6/12/2018
CFMW-002	Phase I Monitoring Well	Upper Unit	3/24/2017	6/27/2017	6/11/2018
CFMW-003	Phase I Monitoring Well	Upper Unit	3/22/2017	6/27/2017	6/13/2018
CFMW-003a	Phase I Monitoring Well	Below Upper Unit	3/20/2017	6/19/2017	6/15/2018
CFMW-007	Existing Monitoring Well	Upper Unit	3/28/2017	6/19/2017	6/11/2018
CFMW-008	Existing Monitoring Well	Upper Unit	3/28/2017	6/20/2017	6/14/2018
CFMW-008a	Phase I Monitoring Well	Upper Unit	3/28/2017	6/28/2017	6/18/2018
CFMW-010	Phase I Monitoring Well	Upper Unit	3/24/2017	6/27/2017	6/11/2018
CFMW-011	Phase I Monitoring Well	Upper Unit	3/27/2017	6/28/2017	6/7/2018
CFMW-011a	Phase I Monitoring Well	Below Upper Unit	3/21/2017	6/29/2017	6/14/2018
CFMW-012	Existing Monitoring Well	Upper Unit	3/22/2017	6/23/2017	6/8/2018
CFMW-012a	Phase I Monitoring Well	Below Upper Unit	3/20/2017	6/20/2017	6/11/2018
CFMW-014	Existing Monitoring Well	Upper Unit	3/29/2017	6/27/2017	6/11/2018
CFMW-015	Existing Monitoring Well	Upper Unit	3/29/2017	6/27/2017	6/11/2018
CFMW-016	Phase I Monitoring Well	Upper Unit	3/28/2017	6/29/2017	6/15/2018
CFMW-016a	Phase I Monitoring Well	Upper Unit	3/27/2017	6/26/2017	6/12/2018
CFMW-017	Existing Monitoring Well	Upper Unit	3/28/2017	6/26/2017	6/6/2018
CFMW-018	Phase I Monitoring Well	Upper Unit	3/28/2017	6/20/2017	6/18/2018
CFMW-019	Existing Monitoring Well	Upper Unit	3/29/2017	6/29/2017	6/14/2018
CFMW-019a	Phase I Monitoring Well	Below Upper Unit	3/27/2017	6/26/2017	6/19/2018
CFMW-020	Existing Monitoring Well	Upper Unit	3/21/2017	6/26/2017	6/8/2018
CFMW-021	Existing Monitoring Well	Upper Unit	3/29/2017	6/26/2017	6/7/2018
CFMW-022	Phase I Monitoring Well	Upper Unit	3/28/2017	6/26/2017	6/7/2018
CFMW-023	Existing Monitoring Well	Upper Unit	3/21/2017	6/27/2017	6/6/2018
CFMW-025	Existing Monitoring Well	Upper Unit	Insufficient Water to sample	Insufficient Water to sample	Insufficient water to sample
CFMW-025a	Phase I Monitoring Well	Below Upper Unit	3/24/2017	6/22/2017	6/7/2018
CFMW-025b	Existing Monitoring Well	Upper Unit	3/20/2017	6/22/2017	6/6/2018
CFMW-026	Phase I Monitoring Well	Upper Unit	3/20/2017	6/22/2017	6/6/2018
CFMW-027	Phase I Monitoring Well	Upper Unit	3/27/2017	6/26/2017	6/13/2018
CFMW-028	Phase I Monitoring Well	Upper Unit	3/20/2017	6/26/2017	6/14/2018
CFMW-028a	Phase I Monitoring Well	Upper Unit	3/21/2017	6/27/2017	6/7/2018
CFMW-029	Phase I Monitoring Well	Upper Unit	3/24/2017	6/26/2017	6/8/2018
CFMW-031	Existing Monitoring Well	Upper Unit	3/21/2017	6/21/2017	6/15/2018
CFMW-032	Phase I Monitoring Well	Upper Unit	3/27/2017	6/20/2017	6/15/2018

Table 6. Summary of Groundwater Samples Collected During Phase I and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT

Sample Location	Location Type	Unit	Date Completed Phase I Round 3 (March 2017)	Date Completed Phase I Round 4 (June 2017)	Date Completed Phase II Round 1 (June 2018)
CFMW-032a	Phase I Monitoring Well	Below Upper Unit	3/29/2017	6/27/2017	6/14/2018
CFMW-033	Phase I Monitoring Well	Upper Unit	3/21/2017	6/19/2017	6/15/2018
CFMW-034	Phase I Monitoring Well	Upper Unit	3/21/2017	6/19/2017	6/15/2018
CFMW-035	Phase I Monitoring Well	Upper Unit	3/21/2017	6/20/2017	6/15/2018
CFMW-036	Existing Former Production Well	Production Well	Not sampled	Not sampled	6/25/2018
CFMW-037	Phase I Monitoring Well	Upper Unit	3/23/2017	6/20/2017	6/18/2018
CFMW-038	Phase I Monitoring Well	Upper Unit	3/24/2017	6/27/2017	6/8/2018
CFMW-040	Phase I Monitoring Well	Upper Unit	3/30/2017	6/20/2017	6/8/2018
CFMW-042	Phase I Monitoring Well	Upper Unit	Insufficient Water to sample	6/20/2017	6/12/2018
CFMW-043	Phase I Monitoring Well	Upper Unit	3/20/2017	6/21/2017	6/11/2018
CFMW-044	Existing Monitoring Well	Upper Unit	3/28/2017	6/21/2017	6/11/2018
CFMW-044a	Phase I Monitoring Well	Upper Unit	3/21/2017	6/23/2017	6/7/2018
CFMW-044b	Existing Monitoring Well	Below Upper Unit	3/24/2017	6/23/2017	6/14/2018
CFMW-045	Phase I Monitoring Well	Upper Unit	3/23/2017	6/28/2017	6/18/2018
CFMW-045a	Phase I Monitoring Well	Upper Unit	3/24/2017	6/23/2017	6/13/2018
CFMW-047	Phase I Monitoring Well	Upper Unit	3/23/2017	6/21/2017	6/8/2018
CFMW-048	Existing Former Production Well	Production Well	Not sampled	Not sampled	6/20/2018
CFMW-049	Existing Monitoring Well	Upper Unit	3/23/2017	6/21/2017	6/7/2018
CFMW-049a	Phase I Monitoring Well	Upper Unit	3/23/2017	6/21/2017	6/13/2018
CFMW-050	Phase I Monitoring Well	Upper Unit	3/23/2017	6/21/2017	6/8/2018
CFMW-051	Existing Former Production Well	Production Well	Not sampled	Not sampled	6/20/2018
CFMW-052	Existing Former Production Well	Production Well	Not sampled	Not sampled	6/21/2018
CFMW-053	Existing Monitoring Well	Upper Unit	Insufficient Water to sample	6/28/2017	6/18/2018
CFMW-053a	Phase I Monitoring Well	Below Upper Unit	3/27/2017	6/28/2017	6/13/2018
CFMW-054	Phase I Monitoring Well	Upper Unit	3/22/2017	6/21/2017	6/18/2018
CFMW-056	Existing Monitoring Well	Below Upper Unit	3/22/2017	6/22/2017	6/12/2018
CFMW-056a	Phase I Monitoring Well	Below Upper Unit	3/30/2017	6/22/2017	6/12/2018
CFMW-056b	Phase I Monitoring Well	Upper Unit	3/21/2017	6/22/2017	6/14/2018
CFMW-057	Existing Monitoring Well	Below Upper Unit	3/29/2017	6/28/2017	6/18/2018
CFMW-057a	Phase I Monitoring Well	Below Upper Unit	3/22/2017	6/28/2017	6/18/2018
CFMW-057b	Phase II Monitoring Well	Upper Unit	Not installed	Not installed	6/12/2018
CFMW-059	Phase I Monitoring Well	Upper Unit	3/23/2017	6/21/2017	6/12/2018
CFMW-059a	Phase I Monitoring Well	Below Upper Unit	3/29/2017	6/28/2017	6/13/2018
CFMW-061	Phase I Monitoring Well	Upper Unit	3/23/2017	6/23/2017	6/20/2018

**Table 6. Summary of Groundwater Samples Collected During Phase I and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Sample Location	Location Type	Unit	Date Completed Phase I Round 3 (March 2017)	Date Completed Phase I Round 4 (June 2017)	Date Completed Phase II Round 1 (June 2018)
CFMW-062	Existing Former Production Well	Production Well	Not sampled	Not sampled	6/26/2018
CFMW-064	Phase I Monitoring Well	Upper Unit	3/23/2017	6/23/2017	6/20/2018
CFMW-065	Phase II Monitoring Well	Upper Unit	Not installed	Not installed	6/14/2018
CFMW-066	Phase II Monitoring Well	Upper Unit	Not installed	Not installed	6/13/2018
CFMW-067	Phase II Monitoring Well	Upper Unit	Not installed	Not installed	6/13/2018
CFMW-068	Phase II Monitoring Well	Upper Unit	Not installed	Not installed	6/12/2018
CFMW-069	Phase II Monitoring Well	Upper Unit	Not installed	Not installed	6/14/2018
CFMW-070	Phase II Monitoring Well	Upper Unit	Not installed	Not installed	6/18/2018
CFMW-071	Phase II Monitoring Well	Upper Unit	Not installed	Not installed	6/12/2018

**Table 6. Summary of Groundwater Samples Collected During Phase I and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Sample Location	Location Type	Unit	Date Completed Phase II Round 2 (October 2018)
CFMW-001	Existing Monitoring Well	Upper Unit	10/10/2018
CFMW-002	Phase I Monitoring Well	Upper Unit	Insufficient water to sample
CFMW-003	Phase I Monitoring Well	Upper Unit	10/10/2018
CFMW-003a	Phase I Monitoring Well	Below Upper Unit	10/23/2018
CFMW-007	Existing Monitoring Well	Upper Unit	10/5/2018
CFMW-008	Existing Monitoring Well	Upper Unit	10/8/2018
CFMW-008a	Phase I Monitoring Well	Upper Unit	10/17/2018
CFMW-010	Phase I Monitoring Well	Upper Unit	10/3/2018
CFMW-011	Phase I Monitoring Well	Upper Unit	10/11/2018
CFMW-011a	Phase I Monitoring Well	Below Upper Unit	10/8/2018
CFMW-012	Existing Monitoring Well	Upper Unit	10/3/2018
CFMW-012a	Phase I Monitoring Well	Below Upper Unit	10/23/2018
CFMW-014	Existing Monitoring Well	Upper Unit	10/11/2018
CFMW-015	Existing Monitoring Well	Upper Unit	10/11/2018
CFMW-016	Phase I Monitoring Well	Upper Unit	Insufficient water to sample
CFMW-016a	Phase I Monitoring Well	Upper Unit	10/5/2018
CFMW-017	Existing Monitoring Well	Upper Unit	Insufficient water to sample
CFMW-018	Phase I Monitoring Well	Upper Unit	Insufficient water to sample
CFMW-019	Existing Monitoring Well	Upper Unit	10/15/2018
CFMW-019a	Phase I Monitoring Well	Below Upper Unit	10/23/2018
CFMW-020	Existing Monitoring Well	Upper Unit	10/4/2018
CFMW-021	Existing Monitoring Well	Upper Unit	10/15/2018
CFMW-022	Phase I Monitoring Well	Upper Unit	10/4/2018
CFMW-023	Existing Monitoring Well	Upper Unit	10/17/2018
CFMW-025	Existing Monitoring Well	Upper Unit	Insufficient water to sample
CFMW-025a	Phase I Monitoring Well	Below Upper Unit	10/10/2018
CFMW-025b	Existing Monitoring Well	Upper Unit	10/10/2018
CFMW-026	Phase I Monitoring Well	Upper Unit	10/17/2018
CFMW-027	Phase I Monitoring Well	Upper Unit	10/11/2018
CFMW-028	Phase I Monitoring Well	Upper Unit	10/17/2018
CFMW-028a	Phase I Monitoring Well	Upper Unit	10/8/2018
CFMW-029	Phase I Monitoring Well	Upper Unit	10/4/2018
CFMW-031	Existing Monitoring Well	Upper Unit	10/5/2018
CFMW-032	Phase I Monitoring Well	Upper Unit	10/4/2018

**Table 6. Summary of Groundwater Samples Collected During Phase I and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Sample Location	Location Type	Unit	Date Completed Phase II Round 2 (October 2018)
CFMW-032a	Phase I Monitoring Well	Below Upper Unit	10/4/2018
CFMW-033	Phase I Monitoring Well	Upper Unit	10/16/2018
CFMW-034	Phase I Monitoring Well	Upper Unit	10/12/2018
CFMW-035	Phase I Monitoring Well	Upper Unit	10/12/2018
CFMW-036	Existing Former Production Well	Production Well	10/18/2018
CFMW-037	Phase I Monitoring Well	Upper Unit	10/12/2018
CFMW-038	Phase I Monitoring Well	Upper Unit	10/9/2018
CFMW-040	Phase I Monitoring Well	Upper Unit	10/8/2018
CFMW-042	Phase I Monitoring Well	Upper Unit	10/4/2018
CFMW-043	Phase I Monitoring Well	Upper Unit	10/11/2018
CFMW-044	Existing Monitoring Well	Upper Unit	10/3/2018
CFMW-044a	Phase I Monitoring Well	Upper Unit	10/16/2018
CFMW-044b	Existing Monitoring Well	Below Upper Unit	10/11/2018
CFMW-045	Phase I Monitoring Well	Upper Unit	10/8/2018
CFMW-045a	Phase I Monitoring Well	Upper Unit	10/16/2018
CFMW-047	Phase I Monitoring Well	Upper Unit	10/4/2018
CFMW-048	Existing Former Production Well	Production Well	10/15/2018
CFMW-049	Existing Monitoring Well	Upper Unit	10/3/2018
CFMW-049a	Phase I Monitoring Well	Upper Unit	10/3/2018
CFMW-050	Phase I Monitoring Well	Upper Unit	10/12/2018
CFMW-051	Existing Former Production Well	Production Well	10/12/2018
CFMW-052	Existing Former Production Well	Production Well	10/15/2018
CFMW-053	Existing Monitoring Well	Upper Unit	10/17/2018
CFMW-053a	Phase I Monitoring Well	Below Upper Unit	10/11/2018
CFMW-054	Phase I Monitoring Well	Upper Unit	10/5/2018
CFMW-056	Existing Monitoring Well	Below Upper Unit	10/9/2018
CFMW-056a	Phase I Monitoring Well	Below Upper Unit	10/9/2018
CFMW-056b	Phase I Monitoring Well	Upper Unit	10/16/2018
CFMW-057	Existing Monitoring Well	Below Upper Unit	10/10/2018
CFMW-057a	Phase I Monitoring Well	Below Upper Unit	10/10/2018
CFMW-057b	Phase II Monitoring Well	Upper Unit	10/16/2018
CFMW-059	Phase I Monitoring Well	Upper Unit	10/9/2018
CFMW-059a	Phase I Monitoring Well	Below Upper Unit	10/15/2018
CFMW-061	Phase I Monitoring Well	Upper Unit	10/8/2018

**Table 6. Summary of Groundwater Samples Collected During Phase I and Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia Falls, MT**

Sample Location	Location Type	Unit	Date Completed Phase II Round 2 (October 2018)
CFMW-062	Existing Former Production Well	Production Well	10/18/2018
CFMW-064	Phase I Monitoring Well	Upper Unit	10/8/2018
CFMW-065	Phase II Monitoring Well	Upper Unit	10/15/2018
CFMW-066	Phase II Monitoring Well	Upper Unit	10/15/2018
CFMW-067	Phase II Monitoring Well	Upper Unit	10/5/2018
CFMW-068	Phase II Monitoring Well	Upper Unit	10/9/2018
CFMW-069	Phase II Monitoring Well	Upper Unit	10/16/2018
CFMW-070	Phase II Monitoring Well	Upper Unit	10/5/2018
CFMW-071	Phase II Monitoring Well	Upper Unit	10/9/2018

**Table 7. Summary of Sediment Porewater Samples Collected During Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia
Falls, MT**

Sample Location	Surface Water Feature	Easting (X)	Northing (Y)
CFPWP-001	Flathead River	837505.45	1541509.03
CFPWP-002	Flathead River	839237.99	1542211.11
CFPWP-003	Backwater Seep Area	841212.96	1542570.89
CFPWP-004	Backwater Seep Area	841509.71	1542501.20
CFPWP-005	Backwater Seep Area	841740.19	1542456.20
CFPWP-006	Flathead River	842659.31	1541356.40
CFPWP-007	Flathead River	844285.37	1541438.21
CFPWP-008	Flathead River	846331.05	1541361.29
CFPWP-014	Cedar Creek	841843.84	1549426.43
CFPWP-015	Cedar Creek	839765.37	1547329.70
CFPWP-016	Cedar Creek	838508.65	1544951.51
CFPWP-017	Flathead River	847573.57	1541130.57
CFPWP-018	South Percolation Ponds	843327.27	1542047.38
CFPWP-019	South Percolation Ponds	843606.88	1542002.07
CFPWP-020	South Percolation Ponds	845128.85	1541599.45
CFPWP-021	Northern SW Feature	842076.08	1546929.68
CFPWP-022	Northern SW Feature	841583.68	1546654.65
CFPWP-023	North-West Percolation Pond	841201.03	1545415.29
CFPWP-024	North-East Percolation Pond	843132.84	1545061.13
CFPWP-025	Cedar Creek	840144.83	1547860.91
CFPWP-026	Backwater Seep Area	840617.05	1542629.37
CFPWP-027	Backwater Seep Area	840821.27	1542621.94
CFPWP-028	Backwater Seep Area	841001.21	1542599.15
CFPWP-029	Riparian Sampling Area	841881.73	1542384.59
CFPWP-030	Riparian Sampling Area	842173.39	1542292.92
CFPWP-031	Riparian Sampling Area	842367.81	1542115.30
CFPWP-032	Riparian Sampling Area	842776.75	1542014.22
CFPWP-033	Riparian Sampling Area	842571.55	1541909.51
CFPWP-034	Flathead River	838745.33	1542194.72
CFPWP-035	Flathead River	840211.32	1542575.34
CFPWP-044	Cedar Creek	839816.05	1547503.38
CFPWP-045	Cedar Creek	839703.94	1547178.30
CFPWP-046	Northern SW Feature	842326.44	1547519.18
CFPWP-047	Northern SW Feature	842313.05	1547231.46
CFPWP-048	Northern SW Feature	841840.52	1546656.80
CFPWP-049	Northern SW Feature	841425.75	1546756.66
CFPWP-050	Northern SW Feature	842089.72	1546594.16
CFPWP-051	Northern SW Feature	841908.61	1546477.05
CFPWP-052	Northern SW Feature	841668.10	1546487.55
CFPWP-053	Northern SW Feature	841500.97	1546418.84
CFPWP-054	North-West Percolation Pond	841157.93	1545603.41
CFPWP-055	North-West Percolation Pond	841387.03	1545525.11
CFPWP-056	North-East Percolation Pond	842924.59	1545018.59
CFPWP-057	North-East Percolation Pond	842976.94	1545154.59

**Table 7. Summary of Sediment Porewater Samples Collected During Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia
Falls, MT**

CFPWP-058	South Percolation Ponds	844776.32	1541670.00
CFPWP-059	South Percolation Ponds	844499.45	1541762.20
CFPWP-060	South Percolation Ponds	844209.81	1541845.86
CFPWP-036	Flathead River	841691.78	1541622.78
CFPWP-037	Flathead River	843682.96	1541445.91
CFPWP-038	Flathead River	844939.72	1541334.47

**Table 7. Summary of Sediment Porewater Samples Collected During Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia
Falls, MT**

Sample Location	Date Completed Phase II Rounds 1 and 2 (June and October 2018)
CFPWP-001	10/5/2018
CFPWP-002	10/5/2018
CFPWP-003	10/4/2018
CFPWP-004	10/4/2018
CFPWP-005	10/18/2018
CFPWP-006	10/4/2018
CFPWP-007	10/3/2018
CFPWP-008	10/3/2018
CFPWP-014	10/10/2018
CFPWP-015	10/9/2018
CFPWP-016	10/9/2018
CFPWP-017	10/3/2018
CFPWP-018	10/17/2018
CFPWP-019	10/16/2018
CFPWP-020	10/11/2018
CFPWP-021	6/19/2018
CFPWP-022	6/20/2018
CFPWP-023	DRY
CFPWP-024	DRY
CFPWP-025	10/10/2018
CFPWP-026	10/5/2018
CFPWP-027	10/5/2018
CFPWP-028	10/4/2018
CFPWP-029	10/18/2018
CFPWP-030	10/18/2018
CFPWP-031	10/18/2018
CFPWP-032	10/17/2018
CFPWP-033	10/17/2018
CFPWP-034	10/5/2018
CFPWP-035	10/5/2018
CFPWP-044	10/10/2018
CFPWP-045	10/9/2018
CFPWP-046	6/19/2018
CFPWP-047	6/19/2018
CFPWP-048	6/20/2018
CFPWP-049	6/20/2018
CFPWP-050	6/21/2018
CFPWP-051	6/21/2018
CFPWP-052	6/18/2018
CFPWP-053	6/18/2018
CFPWP-054	DRY
CFPWP-055	DRY
CFPWP-056	DRY
CFPWP-057	DRY

**Table 7. Summary of Sediment Porewater Samples Collected During Phase II SC
Columbia Falls Aluminum Company, LLC, Phase II Site Characterization, 2000 Aluminum Drive, Columbia
Falls, MT**

CFPWP-058	10/11/2018
CFPWP-059	10/11/2018
CFPWP-060	10/16/2018
CFPWP-036	10/4/2018
CFPWP-037	10/3/2018
CFPWP-038	10/3/2018

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MONTANA
MISSOULA DIVISION

FILED

JAN 3 1979

UNITED STATES OF AMERICA,
Plaintiff,

v.

ATLANTIC-RICHFIELD COMPANY
and THE ANACONDA COMPANY,
Defendants.

JOHN E. PEDERSON, CLERK
By *Thomas H. Linn*
Deputy Clerk

Civil Action No. 78-80-M

8

AMENDED COMPLAINT

1. The Attorney General of the United States, at the request of and on behalf of Robert Bergland, Secretary of the Department of Agriculture, and Cecil D. Andrus, Secretary of the Department of the Interior, brings this action for damages and injunctive relief for injury and death caused to trees, plants, and other vegetation and wildlife in the Flathead National Forest and Glacier National Park. Such damage has been caused by defendants' past and continuing fluoride emissions from its Anaconda Aluminum Company plant near Columbia Falls, Montana. Such trespass has irreparably injured the forest, natural resources, and wildlife of the National Park and National Forest areas.

2. This Court has jurisdiction pursuant to 28 U.S.C. 1345.

3. Plaintiff is the United States of America.

4. Defendant Anaconda Company (Anaconda) is a corporation incorporated under the laws of Delaware and owns and operates the Anaconda Aluminum plant in Columbia Falls, Montana. Defendant maintains offices and is doing business in Montana. In January 1977, Anaconda merged into the Atlantic-Richfield Company (ARCO), a corporation incorporated under the laws of Pennsylvania. Anaconda is now a wholly-owned subsidiary of Atlantic-Richfield. ARCO maintains offices and is doing business in Montana.

5. Plaintiff owns property, a National Park and National Forest more fully described in Exhibit A, in the immediate vicinity of defendants' Anaconda Aluminum Company plant.

6. Part of the property described in Exhibit A belongs to the Flathead National Forest which was established as a Forest Reserve on February 22, 1897, by a presidential proclamation, 29 Stat. 911, and became a National Forest pursuant to an act of Congress on March 4, 1907. 34 Stat. 1269.

7. Part of the property described in Exhibit A is Glacier National Park. Glacier National Park was dedicated and set apart as a public park on May 11, 1910, for the benefit and enjoyment of the people of the United States. 16 U.S.C. 161, et seq.

8. Since 1956, defendant Anaconda has engaged in smelting of aluminum at its Columbia Falls plant.

9. Defendants have in the past and continue at present willfully and wrongfully to emit phytotoxic gaseous and particulate fluoride air pollutants from the operations it conducts at the plant.

10. The fluoride pollutants emitted by defendants' plant are deposited on plaintiff's property in the Flathead National Forest and Glacier National Park.

11. Large numbers of trees and other vegetation in plaintiff's National Forest and National Park have died as a result of the absorption of fluorides from defendants' plant.

12. The absorption by the vegetation of fluoride emissions from defendants' plant has caused injury to the vegetation including but not limited to reduction in photosynthesis, retarded diameter growth, and foliar necrosis.

13. If the pollution continues, the fluoride concentration in the trees and vegetation will increase causing the death of more trees and vegetation and a reduction in the growth of others.

14. The many dead trees in plaintiff's Park and Forest have created a hazardous condition in that plaintiff's property is now extremely susceptible to forest fire.

15. The aesthetic and recreational value of plaintiff's National Park and National Forest has been significantly diminished by the presence of acres of trees and vegetation killed or injured by the fluoride emissions from defendants' plant.

16. The monetary value of plaintiff's National Park and National Forest has been severely diminished by the loss of timber caused by the death of trees from fluoride emissions from defendant's plant. Unless these emissions are eliminated or greatly reduced, the monetary value of plaintiff's property will continue to diminish.

17. As a result of the ingestion of vegetation containing high fluoride concentrations, the wildlife in the Park and Forest has suffered injuries including, but not limited to, skeletal fractures, tooth disintegration and severe fluorosis, all of which can ultimately lead to death.

18. Defendants' plant presently emits over 4,000 pounds of fluoride air pollutants per day. The present Montana State standard for the Anaconda plant is 864 pounds of gaseous and particulate fluoride per day.

19. Even at emission levels of 864 pounds per day, the vegetation in the Flathead National Forest and Glacier National Park will suffer damage from fluoride absorption.

20. Unless the present level of fluoride emissions from defendants' plant is abated and reduced to 200 pounds per day, both the Flathead National Forest and Glacier National Park will suffer further death and irreparable injury to trees, vegetation, and wildlife, depriving the people of the United States of the natural and recreational resources provided by this property.

WHEREFORE, plaintiff seeks the following relief:

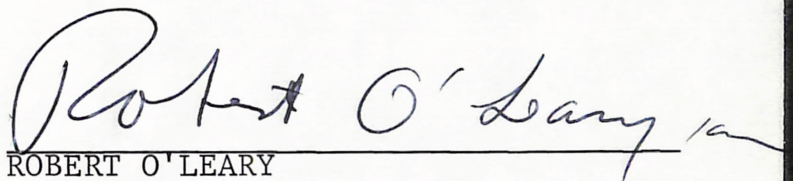
1. An order permanently enjoining defendants from emitting fluorides at levels which result in death or injury to trees, plants, other vegetation and wildlife in the Flathead National Forest and Glacier National Park;

2. Damages for the diminution in the value of its property resulting from loss of timber and other adverse effects caused by defendants' pollution, the amount to be determined at trial;

3. Treble damages for loss of timber, in accordance with Section 17-503 of the Revised Code of Montana (1947), the amount to be determined at trial;

4. Damages resulting from the necessity of eliminating the fire hazard on plaintiff's property, the amount to be determined at trial;

5. Such other relief as the Court may deem just and proper.



ROBERT O'LEARY
United States Attorney
Butte, Montana 59101



STEVEN A. HERMAN
(202) 633-2741
Room 2138

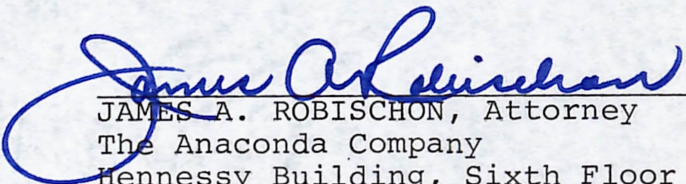
DAVID WATERS
(202) 633-4113
Room 2619

DAVID CANNON
(202) 633-2845
Room 2137

Attorneys
Land and Natural Resources Division
UNITED STATES DEPARTMENT OF JUSTICE
Benjamin Franklin Station
P. O. Box 7415
Washington, D. C. 20044

CERTIFICATE OF SERVICE

This will acknowledge receipt of a copy of the foregoing
Amended Complaint on this 2nd day of January, 1979.



JAMES A. ROBISCHON, Attorney
The Anaconda Company
Hennessy Building, Sixth Floor
Butte, Montana 59701
ATTORNEY FOR DEFENDANTS

SETTLEMENT AGREEMENT

THIS AGREEMENT, made and entered into this 30th day of June 1980, by and between The Anaconda Company, a Delaware corporation, hereinafter referred to as "Anaconda," and the United States of America, hereinafter referred to as "the United States,"

WITNESSETH:

WHEREAS, the United States, as owner of Flathead National Forest and Glacier National Park, commenced an action entitled U. S. v. Atlantic-Richfield Company and The Anaconda Company, now pending in the United States District Court for the District of Montana, Civil Action No. 78-80-M (the "Action") seeking injunctive relief and alleging damages to the United States and the said lands, as the result of emissions from Anaconda's aluminum reduction facility at Columbia Falls, Montana (the "plant"); and

WHEREAS, Anaconda has denied and continues to deny that it has caused or is causing any damage or injury to the United States or its lands, but desires to avoid the costs and other burdens of protracted litigation, to put past disputes and disagreements with the United States behind it, and to lay the foundation for a future relationship free of any potential for new disputes or disagreements; and

WHEREAS, pursuant to its Sumitomo emission reduction program commenced in 1976, Anaconda has achieved significant reductions in emissions from its plant since the filing of the above-referenced action; and

WHEREAS, plant emissions officially reported to the State of Montana show fluoride emissions for the first quarter of 1980 averaged less than the Montana emission standard of

864 lbs/day, which standard is more restrictive than the most stringent federal fluoride emission standard applicable to new aluminum reduction plants; and

WHEREAS, Anaconda is currently operating under a State of Montana order requiring the plant to be in compliance with State fluoride emission standards on and after July 1, 1980; and

WHEREAS, the United States and Anaconda have, upon the terms and conditions set forth herein, agreed upon a settlement of all claims alleged in the aforesaid action.

NOW, THEREFORE, in consideration of the terms, covenants and conditions hereinafter set forth to be kept and performed by the parties hereto, it is mutually agreed as follows:

1. The United States (by the Forest Service, United States Department of Agriculture) and Anaconda will in good faith, and with all reasonable speed, undertake to consummate a land exchange, in the form described hereinbelow, pursuant to the requirements and procedures of Public Law 86-509, or such other federal law as may be applicable.

a. In exchange for title to such portion of the "United States Exchange Lands" (defined below) as shall be finally designated pursuant to paragraph 1(e)(iii) hereinbelow, Anaconda will undertake to transfer to the United States such lands of equal value (hereinafter "the Equal Value Exchange Lands") as shall be designated by the Forest Service, USDA. For purposes of this Settlement Agreement the term "United States Exchange Lands" means the total of (i) the United States lands marked on Exhibit A (attached hereto), and (ii) any additional lands which the United States may designate as available for exchange with Anaconda pursuant to paragraph 1(e)(i), hereinbelow. The said designations

shall be made in the manner, and according to the schedule listed below.

b. It is further agreed that at the time of the completion of the equal value exchange, Anaconda will donate to the United States additional lands (hereinafter the "Anaconda Donation Lands") having a value determined according to the following scale:

<u>Final Exchange Appraisal Value of U. S. Exchange Lands</u>	<u>Exchange Appraisal Value of Anaconda Donation Lands</u>
\$0 - \$300,000	\$75,000
\$300,001 - \$1,299,999	*
\$1,300,000 and over	\$125,000

$$* \quad \$75,000 + \left[\frac{\text{Final exchange appraisal value of U.S. Exchange Lands} - \$300,000}{\$1,000,000} \times \$50,000 \right]$$

c. In addition to the foregoing, Anaconda agrees to deposit in a Cooperative fund \$20,000 to be drawn upon by the United States in completing the land exchange including the costs of the preparation of any environmental impact assessments or environmental impact statements. Any money remaining in this fund at completion of the exchange shall be refunded to Anaconda.

d. Anaconda represents and agrees that it will not undertake the construction of any improvements on that portion of the United States Exchange Lands lying on the west, southwest and southern slopes of Teakettle Mountain, except as it may desire in order to prevent trespasses to said land or to facilitate the planting of trees and/or other vegetation. Such representation and agreement shall be reflected in the documents of conveyance of the United States Exchange Lands in such a manner as to be binding on Anaconda and its successors

-- in interest in the affected lands. The parties may or may not agree to other terms and conditions relating to the preservation of the natural state of the area.

e. In the implementation of this Settlement Agreement, the United States and Anaconda hereby indicate their desire to accomplish the aforesaid land exchange in accordance with the following schedule:

i. Within 60 days of the execution of this Settlement Agreement, the parties shall mutually agree upon what land the United States will be willing to exchange and Anaconda might desire to acquire in addition to the lands shown on Exhibit A.

ii. The United States shall then complete the necessary land exchange appraisals of the land agreed upon. If the appraisals are conducted by Forest Service personnel, they shall be completed as soon as possible, but in no case later than six months from the execution of this Settlement Agreement. If the appraisals are conducted by personnel other than Forest Service personnel, the appraisals shall be completed as soon as is practicable, given statutory and regulatory constraints.

iii. Within 30 days of the completion of the appraisals specified in subparagraph 1(e)(ii) above, Anaconda shall designate such portions of the United States Exchange Lands as it desires to obtain by land exchange. If the lands identified by Anaconda pursuant to this subparagraph are less than the whole of the lands appraised by the United States and if therefore, the United States deems it necessary to conduct further appraisals, such appraisals shall be conducted as soon as practicable in accordance with the time schedules set out in subparagraph 1(e)(ii).

iv. Within 90 days after approval by the United States of the final appraisal report for the United States Exchange Lands designated by Anaconda, the United States shall identify those lands which it wishes to obtain in the exchange (including the Anaconda Donation Lands).

v. Thereafter - (1) Anaconda shall, with the full assistance and cooperation of the United States, proceed to obtain such interest in the lands designated by the United States as is necessary to effectuate the exchange; (2) both the United States and Anaconda shall cooperate in all additional steps necessary to effectuate the exchange as hereinabove described.

2. Although it is the intent and desire of the United States and Anaconda to accomplish the land exchange and donation described hereinabove, it is expressly agreed that at any time prior to the consummation of the land exchange and donation pursuant to paragraph 1, either the United States or Anaconda may elect to terminate the land exchange and donation process by giving written notice to the opposite party of such election. In the event of such an election by either party, Anaconda shall pay to the United States within 30 days the sum of \$75,000. If a termination is made, any amount remaining from the \$20,000 placed in a Cooperative fund by Anaconda for use by the United States to cover its land exchange costs shall be returned to Anaconda. It is expressly agreed and understood that compliance with the terms of this paragraph 2 shall be in lieu of the requirements and agreements of paragraph 1 hereinabove.

3. It is further agreed that this Settlement Agreement shall not give the United States any rights or causes of action for abatement of emissions against Anaconda, Atlantic-Richfield Company, their successors or assigns in interest, in

addition to any rights or causes of action which may exist independently of this Settlement Agreement. In particular, it is agreed that the United States shall not, by reason of this Settlement Agreement, acquire any right to seek enforcement of Montana and/or federal emission standards applicable to the Anaconda plant. However, the United States shall retain such rights, if any, as it may otherwise have to seek enforcement of Montana and/or federal Clean Air Act emission standards pursuant to State or federal law now in effect or hereinafter enacted.

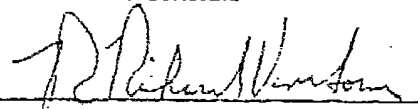
4. The United States hereby agrees for a period of two years from the date of this Settlement Agreement to protect, preserve and make available for inspection and copying by Anaconda upon reasonable notice (a) the exhibits to the deposition of Dr. Clinton E. Carlson taken in the above-referenced case and (b) the documents produced during the said deposition pursuant to the subpoena duces tecum filed in the same proceeding, all of which have been left in the custody of the Forest Service, United States Department of Agriculture.

5. The United States shall, at the time of the execution of this Settlement Agreement, deliver to Anaconda (a) a stipulation of dismissal with prejudice in the form annexed hereto as Exhibit B duly executed by counsel for the United States and an appropriate representative of the Forest Service, and (b) an executed General Release of Claims in the form annexed hereto as Exhibit C.

6. The parties further agree that no party shall be entitled to an award of costs or attorneys' fees as a result of the above-referenced litigation.

THE ANACONDA COMPANY

By


Vice President

THE UNITED STATES OF AMERICA

By Wendy M. John
R. M. Peterson
Sanford Sagalkin

By

WENDY M. JOHN
Attorney, United States Forest
Service

R. M. PETERSON
Chief, Forest Service, United
States Department of Agriculture

SANFORD SAGALKIN
Deputy Assistant Attorney General
Land and Natural Resources Division
Department of Justice

DATE _____

FROM: L.W. SMITH

TO:

_____ SNEDDON	_____ NOTE AND RETURN
_____ ECCLESTON	_____ FOR YOUR FILES
_____ LOCKHART	_____ RETURN WITH YOUR
_____ RHOADS	_____ COMMENTS
_____ RYAN	_____ FOR YOUR ATTENTION
_____	_____ SEE ME RE-ATTACHED
_____	_____ FOR YOUR APPROVAL

EXHIBIT A

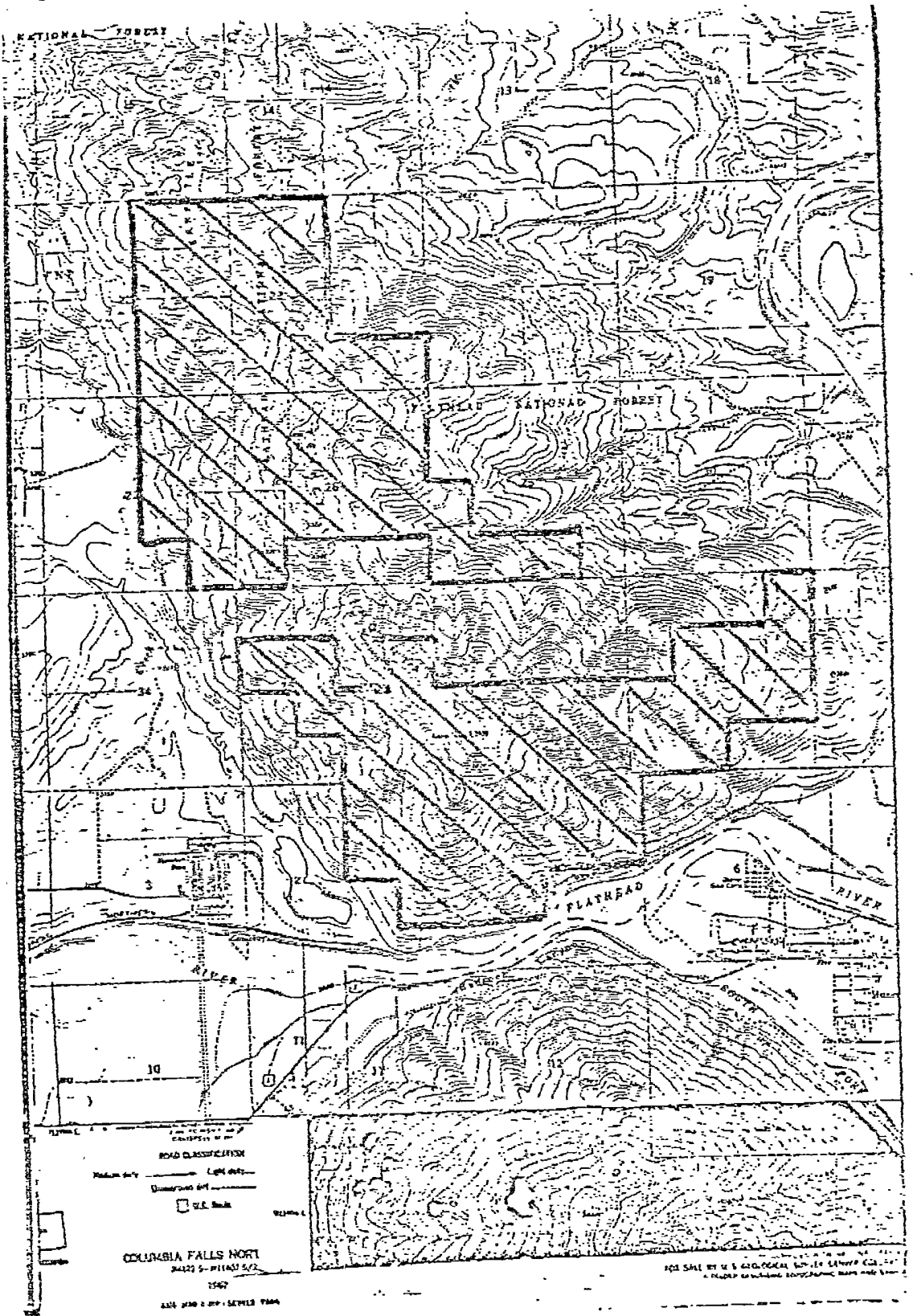


Exhibit A (cont.)

T. 30 N., R. 20 W., P.M.M.

sec. 1, N1/2 and N1/2SW1/4;
Sec. 2, NE1/4 and NE1/4SE1/4.

T. 31 N., R. 20 W., P.M.M.

sec. 22, lots 1, 2, 5, 7, 8, 9, 10, 11, 12;
sec. 23, W1/2, S1/2SE1/4;
sec. 25, W1/2SW1/4, SE1/4SW1/4, and SW1/4SE1/4;
sec. 26, N1/2, N1/2SW1/4, SW1/4SW1/4, and N1/2SE1/4;
sec. 27, NE1/4, N1/2SE1/4, and SE1/4SE1/4;
sec. 35, lot 4, S1/2NW1/4, NE1/4SW1/4, and SE1/4;
sec. 36, S1/2.

T. 31 N., R. 19 W., P.M.P.

sec. 31, SW1/4, NE1/4NE1/4, S1/2NE1/4, SE1/4NW1/4, N1/2SE1/4.

Containing 3279 acres (more or less)

Exhibit B

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MONTANA
MISSOULA DIVISION

UNITED STATES OF AMERICA, :

Plaintiff :

v. :

No. CV-78-80-M

ATLANTIC-RICHFIELD COMPANY :
and THE ANACONDA COMPANY, :

Defendants :

: : : : : : : : :

STIPULATION OF DISMISSAL WITH PREJUDICE

IT IS HEREBY STIPULATED AND AGREED, by and between
the undersigned, the attorneys of record for the parties
hereto, that the above-entitled action be, and the same is
hereby, dismissed with prejudice.

Attorneys for Defendants, Atlantic-
Richfield Company and The
Anaconda Company

Attorneys for Plaintiff, The
United States of America

THE UNITED STATES FOREST SERVICE

By _____

Exhibit C

GENERAL RELEASE OF CLAIMS.

In consideration of the execution by The Anaconda Company (hereinafter referred to as "Anaconda") of a certain agreement dated _____, 1980, entered into by and between said Anaconda and The United States of America (hereinafter referred to as "The United States"), and for other valuable consideration, the receipt and sufficiency whereof is hereby acknowledged, The United States by these presents does remise, release and forever discharge Anaconda and The Atlantic-Richfield Company, their officers, agents, employees, successors and assigns, none of whom admits any liability but all of whom expressly deny such liability, of all and from all manner of actions and causes of action, suits and causes of suit, nuisances, trespasses, damages, charges, expenses, debts, dues, sums of money, covenants, contracts, agreements, promises, claims and demands of any kind or nature which against Anaconda and/or The Atlantic-Richfield Company, their officers, agents, employees, successors and assigns, or any of them, said United States hereafter can, shall or may have by reason of emissions of the Anaconda Columbia Falls aluminum reduction plant at any time from the beginning of the world up to and including the day and date of these presents.

It is expressly understood and agreed that this release shall not release Anaconda from all agreements, covenants and stipulations agreed to be performed on or after the date hereof by Anaconda in that certain agreement with The United States dated _____, 1980, hereinbefore described.

IN WITNESS WHEREOF, _____

as _____, on behalf of The United States
has caused these presents to be executed this _____ day of
_____, 1980.

Washington)
) SS
District of Columbia)

On this _____ day of _____, 1980, personally
appeared before me, a notary public for said District of
Columbia, the within named _____,
in _____ capacity as _____, to me known to be
the identical person described in and who executed the fore-
going instrument, and acknowledged to me that _____ had the
capacity to execute the same on behalf of The United States
of America and executed the same freely and voluntarily for
the uses and purposes therein stated.

IN TESTIMONY WHEREOF, I have hereunto set my hand
and official seal the date first hereinabove written.

Notary Public

My Commission Expires: _____

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MONTANA
MISSOULA DIVISION

FILED

AUG 4 1980

LOU ALEKSICH, JR., CLERK
BY: *[Signature]*
DEPUTY CLERK

UNITED STATES OF AMERICA,

Plaintiff,

-vs-

No. CV-78-80-M

ATLANTIC RICHFIELD COMPANY
and THE ANACONDA COMPANY,

Defendants.

70

ORDER OF DISMISSAL WITH PREJUDICE

Pursuant to the Stipulation of Dismissal with Prejudice
among counsel for the parties to this action:

IT IS HEREBY ORDERED that this action be and the same is
hereby dismissed with prejudice, each party to pay its own costs
and attorneys' fees.

DATED this 14th day of August, 1980.

[Signature]
Russell E. Smith
United States District Judge

Atlantic Richfield Company

Nathan Block
Managing Counsel

501 Westlake Blvd.
Houston, TX 77079
Phone: (832) 619-4789
E-mail: Nathan.block@bp.com

July 22, 2025

SUBMITTED VIA EMAIL

Montana Natural Resource Damage Assessment Program
1720 9th Ave.
P.O. Box 20145
Helena, Montana 59620-1425
nrdp@mt.gov

**Re: Anaconda Aluminum Co. Columbia Falls Reduction Plant (Columbia Falls
Aluminum) Superfund Site
Comments of Atlantic Richfield Company on the Draft Natural Resource
Damage Assessment Plan**

Atlantic Richfield Company ("Atlantic Richfield") submits the enclosed comments on the May 2025 Draft Natural Resource Damage Assessment Plan for the Columbia Falls Aluminum Company Site.

Sincerely,

Nathan Block

Managing Counsel, Atlantic Richfield Company

ATTACHMENT A

Columbia Falls Aluminum Company Site Atlantic Richfield Company Comments on the May 2025 Draft Natural Resource Damage Assessment Plan (“NRDA Plan”)

On January 19, 2024, Atlantic Richfield received the Notice of Intent to Perform a Natural Resource Damage Assessment Pursuant to 43 C.F.R. § 11.32 and the Preassessment Screen issued by the State of Montana, the Confederated Salish and Kootenai Tribes, the U.S. Department of the Interior, and the U.S. Department of Agriculture (collectively, the “Trustees”) for the Columbia Falls Aluminum Company Site in Flathead County, Montana (“CFAC Site”). In its February 12, 2024, comments on those documents, Atlantic Richfield emphasized that proceeding with NRD assessment before implementation (or even selection) of the CERCLA remedy for the CFAC Site contradicted the Department of Interior’s regulations in 43 C.F.R. Part 11 (the “NRDA Rule”) because future response actions will substantially mitigate residual injuries to natural resources. Among other comments, Atlantic Richfield also pointed out that the Trustees had failed to properly determine damages excluded from CERCLA liability, as required by 43 C.F.R. § 11.24(b); and they appeared to be working towards claims to recover damages for natural resources over which trusteeship is lacking. Columbia Falls Aluminum Company (“CFAC”) also submitted detailed comments making many of the same points. These deficiencies remain following the U.S. Environmental Protection Agency’s (“EPA”) issuance of the Record of Decision (“ROD”) in January 2025. Unfortunately, the Trustees have decided to proceed with NRD assessment and the development of the draft NRDA Plan over Atlantic Richfield’s and CFAC’s objections. The Trustees appear poised to undertake an expansive NRD assessment—one that will contravene CERCLA and the NRDA Rule in several ways and will likely generate unusable data. Much of the resulting assessment costs will accordingly be unrecoverable.

In addition to its previous comments on the Preassessment Screen, which are incorporated herein by reference, Atlantic Richfield offers these comments specific to the NRDA Plan.

Comment 1: NRD assessment is premature. The Trustees should defer further assessment work at least until the mitigating effects of the EPA-selected remedial action on residual natural resource injury can be more accurately determined.

- a) The NRDA Rule requires that NRD assessment be cost-effective, appropriate, and necessary. *See* 43 C.F.R. §§ 11.11, 11.13. Trustees can only recover for residual injuries, if any, that remain following implementation of CERCLA response actions. *See* 43 C.F.R. §11.15(a)(1) (“Damages as determined in accordance with this part and calculated based on injuries occurring from the onset of the release through the recovery period, *less any mitigation of those injuries by response actions taken or anticipated . . .*”) (emphasis added). Damages cannot be recovered for injuries that will be mitigated through remedy implementation.
- b) As with the Preassessment Screen, the NRDA Plan ignores CERCLA’s prohibition against damages recovery for injuries that will be mitigated by remedy implementation.

c) As selected by EPA, the CFAC Site remedy will be comprehensive, leaving little if any residual injury to natural resources. The ROD states that “[t]he Selected Remedy uses a remedial strategy that emphasizes sitewide consolidation and encapsulation of contaminant sources to eliminate exposure pathways, reduce[s] the transfer of contaminants of concerns (COCs) to groundwater underlying the site, and bring[s] concentrations in seeps near the Flathead River into compliance with standards for ecological receptors.” ROD at i. EPA selected the remedial action because it addresses impacts to soil, groundwater, surface water, human health, aquatic receptors, and ecological receptors. Specifically, the remedial action objectives include:

- “Eliminate exceedances of Montana DEQ-7 groundwater standards;”
- “Eliminate unacceptable risk to aquatic receptors from direct contact with or ingestion of surface water or porewater;”
- “Eliminate unacceptable risk for terrestrial and transitional ecological receptors;”
- “Eliminate ingestion and direct contact;”
- “Reduce total cyanide, fluoride, and arsenic concentrations in groundwater in the upper hydrogeologic unit that exceed Montana DEQ-7 standards, prevent further degradation of groundwater;”
- “Prevent unacceptable risk to human receptors;”
- “Eliminate exceedances of Montana DEQ-7 aquatic life criteria;” and
- “Reduce metals . . . concentrations in River Area DU5 surface water and sediment porewater to the aquatic life criteria.”

ROD at 8-1 to 8-2.

Neither the Preassessment Screen nor the NRDA Plan clearly identifies what, if any, residual injury the Trustees believe will remain – and therefore warrant assessment – following remedy implementation. While the NRDA Plan states that the Trustees “will also consider the effects of remedial actions,” it does not explain how this will occur or why an NRD assessment is necessary now. This is a major planning flaw that will undermine the assessment process.

d) Assessment results collected before remedy implementation will have little value once the remedy is completed, again limiting or precluding recovery of the Trustees’ assessment costs.

Comment 2: The Trustees have failed to adequately identify and describe the natural resource services they believe have been affected and that therefore require assessment.

a) As noted in Atlantic Richfield’s comments on the Preassessment Screen, proper NRD assessment focuses as much on evaluating natural resource services as it does on injury determination. The NRDA Rule requires that the Trustees determine “the extent to which natural resource services have been reduced as a result of the injuries determined in the Injury Determination phase of the assessment.” See 43 C.F.R. § 11.71(a). The NRDA

Plan itself recognizes that “CERCLA NRDA regulations further describe services as the metric by which the benefits of natural resources may be quantified.” NRDA Plan at 22.

- b) Yet the Trustees have not adequately described the natural resource services supposedly affected at the CFAC Site. The NRDA Plan generically describes various categories of natural resource services, including drinking water services of groundwater resources; fishing, hunting, and recreational services of biological resources; cultural services of geologic resources; and habitat services of surface water resources. But the Trustees fail to identify how any of those services may have been reduced by releases of hazardous substances at the CFAC Site, or how such a determination will be made.
- c) The information from the CERCLA remedial investigation work discussed in the ROD confirms that many services generically described in the NRDA Plan have, in fact, not been affected. For example, the NRDA Plan indicates that surface water provides habitat for aquatic animals and plants, and the Flathead River “is the sole migration corridor and critical habitat for trout to move from Flathead Lake to tributaries in the North and middle Forks of the Flathead River.” NRDA Plan at 22. It further states that the Flathead River is a popular destination for fishing. *Id.* at 23. Yet “[t]he remedial investigation . . . developed for the site under EPA direction [] show[s] that site-related contaminants do not contribute unacceptable risk to fish in the Flathead River.” ROD at 5-20.
- d) The ROD and associated risk assessment also confirm that there has been no historical use of surface water or groundwater at the Site for drinking water – no drinking water wells exist within the contaminated plume boundary – and that offsite drinking water wells (in Aluminum City) have not been affected. If impacted groundwater has not historically been used as a drinking water source, there cannot have been a loss of drinking water services.
- e) And, as also explained in Atlantic Richfield’s prior comments, there has been little or no loss of recreational (public) use of habitat, since Site operations and their effects, at least since 1980, were confined primarily to private property.
- f) Nor have the Trustees attempted to quantify baseline natural resource services – those services provided before the commencement of industrial operations at the Site in 1955 – or explained with any specificity how a baseline determination will be made. CERCLA only allows the Trustees to recover damages, if any, “from the onset of the release through the recovery period.” See 43 C.F.R. § 11.15(a). The NRDA Plan acknowledges that baseline data are needed, but they “have not been identified to date.” NDRA Plan at 30. The mere suggestion that the Trustees “plan to use” data from reference/control areas, relevant literature, and/or site-specific studies (*id.* at 30-31), with no further explanation of how that information will be collected, analyzed, and otherwise used to identify baseline services existing 70 years ago is another serious flaw in the NRDA Plan.

Comment 3: Much of the area proposed for NRD assessment is private property, where the Trustees lack trusteeship over affected natural resources.

- a) The NRDA Plan identifies the “Assessment Area” as “anywhere that the contamination has come to be located from Site operations,” including 1,340 acres of the CFAC Site “as well as any areas surrounding, downstream, or downgradient of the Site that may have been contaminated by Site releases.” NRDA Plan at 1, 12. The Trustees presumably envision assessment work throughout all these vast areas.
- b) However, much of the land at the CFAC Site is privately owned. The Trustees have not distinguished public from private resources on the CFAC Site, as CERCLA and the NRDA Rule require.
- c) CERCLA does not permit the Trustees to recover damages for injuries to private property or resources for which they lack trusteeship. 42 U.S.C. § 9601(16) (defining “natural resources” as “land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such re-sources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States . . .”); *see also* 43 C.F.R. §§ 11.23(b), 11.25(e)(1), 11.31(a)(2). Atlantic Richfield objected to the Trustees’ overreach in its comments on the Preassessment Screen, but the Trustees continue to ignore this issue.
- d) Costs incurred in performing injury and damages determinations for natural resources and services located solely on private property (including soil, plants, and habitat) will not be recoverable.

Comment 4: The Trustees have failed to evaluate exclusions from NRD liability under CERCLA.

- a) CERCLA excludes certain natural resource damages from the scope of liability. Damages resulting from a “release of a hazardous substance . . . occur[ing] wholly before enactment of CERCLA,” are not recoverable (43 C.F.R. § 11.24(b)(1)(ii)), nor are damages resulting “from any other federally permitted release, as defined in section 101(10) of CERCLA.” 43 C.F.R. § 11.24(b)(1)(iv).
- b) In its earlier comments, Atlantic Richfield highlighted the importance of evaluating these exclusions at the Preassessment Screen stage because the NRDA Rule prevents NRD assessment from proceeding when potential injuries meet one or more criteria for excluded damages. 43 C.F.R. § 11.24(b)(2). The Trustees seem to still be ignoring this issue. As with the Preassessment Screen, the NRDA Plan fails to explain whether any of the alleged injuries fall within the excluded categories or how an evaluation of the exclusion criteria in 43 C.F.R. § 11.24(b)(1) will be made.
- c) At least some of the alleged injuries to groundwater and surface water clearly are subject to the exclusion for federally permitted releases in § 11.24(b)(1)(iv). For example, CFAC’s wastewater discharges were permitted under a Montana Groundwater Pollution Control System permit issued in 1984 and a Montana Pollutant Discharge Elimination System permit issued in 1993. *See* ROD at 2-2 to 2-6. The NRDA Plan acknowledges

that discharges occurred pursuant to these permits, but it fails to explain how injuries attributable to those discharges will be distinguished or how the Trustees' damages determination will account for this exclusion.

- d) Damages for certain alleged injuries from air emissions also will be subject to the exclusions for releases occurring wholly before the enactment of CERCLA (43 C.F.R § 11.24(b)(1)(ii)) and for federally permitted releases (43 C.F.R § 11.24(b)(1)(iv)); *see also Pakootas v. Teck Cominco Metals Ltd.*, 830 F.3d 975, 978 (9th Cir. 2016) (rejecting CERCLA liability for air emissions from a smelter). The NRDA Plan asserts that aerial pathways resulted in hazardous substance deposition and injuries to NRDs: "Aerial pathways through which hazardous substances were emitted via stack emissions . . . and subsequently deposited on surrounding habitats containing soil, surface water, and biological resources, as well as aerial emissions from resuspension of hazardous substances that were deposited on the ground." NRDA Plan at 25-26. These releases began in 1955, and Anaconda substantially or completely eliminated them before CERCLA's enactment in 1980, when it installed modernized emission control equipment at the plant. *See* ROD at 2-1. Despite these facts, the NRDA Plan does not distinguish excluded from non-excluded damages relating to air emissions.
- e) Again, assessment costs associated with the determination of damages excluded from liability under CERCLA will not be recoverable.
- f) Further, on June 30, 1980, Atlantic Richfield entered into a settlement agreement with the United States, which released and discharged Atlantic Richfield from all manner of actions, suits, damages, claims, and demands arising out of the past emissions from the aluminum reduction plant at the CFAC Site. A copy of the Settlement Agreement and General Release of Claims is enclosed with these Comments. Because the United States is barred from recovering damages arising from any pre-settlement emissions, the Trustees should avoid any future assessment of natural resource damages on National Forest lands at or adjacent to the CFAC Site, the costs of which also will not be recoverable.

CONCLUSION

The Trustees are proposing an NRD assessment that is premature, that disregards the mitigating effects of future remedial action, that ignores the importance of natural resource services, that appears to assume trusteeship for resources where it is lacking, and that fails to account for statutory liability exclusions. Proceeding with the assessment now and in accordance with the draft NRDA Plan will result in the collection of unusable data and unrecoverable assessment costs. The Trustees should defer further work on the assessment until the deficiencies identified in these comments and in Atlantic Richfield's prior comments on the Preassessment Screen have been rectified and only after the mitigating effects of the EPA-selected remedial action on any residual natural resource injury can be more accurately determined.

SETTLEMENT AGREEMENT

THIS AGREEMENT, made and entered into this 30th day of June 1980, by and between The Anaconda Company, a Delaware corporation, hereinafter referred to as "Anaconda," and the United States of America, hereinafter referred to as "the United States,"

WITNESSETH:

WHEREAS, the United States, as owner of Flathead National Forest and Glacier National Park, commenced an action entitled U. S. v. Atlantic-Richfield Company and The Anaconda Company, now pending in the United States District Court for the District of Montana, Civil Action No. 78-80-M (the "Action") seeking injunctive relief and alleging damages to the United States and the said lands, as the result of emissions from Anaconda's aluminum reduction facility at Columbia Falls, Montana (the "plant"); and

WHEREAS, Anaconda has denied and continues to deny that it has caused or is causing any damage or injury to the United States or its lands, but desires to avoid the costs and other burdens of protracted litigation, to put past disputes and disagreements with the United States behind it, and to lay the foundation for a future relationship free of any potential for new disputes or disagreements; and

WHEREAS, pursuant to its Sumitomo emission reduction program commenced in 1976, Anaconda has achieved significant reductions in emissions from its plant since the filing of the above-referenced action; and

WHEREAS, plant emissions officially reported to the State of Montana show fluoride emissions for the first quarter of 1980 averaged less than the Montana emission standard of

864 lbs/day, which standard is more restrictive than the most stringent federal fluoride emission standard applicable to new aluminum reduction plants; and

WHEREAS, Anaconda is currently operating under a State of Montana order requiring the plant to be in compliance with State fluoride emission standards on and after July 1, 1980; and

WHEREAS, the United States and Anaconda have, upon the terms and conditions set forth herein, agreed upon a settlement of all claims alleged in the aforesaid action.

NOW, THEREFORE, in consideration of the terms, covenants and conditions hereinafter set forth to be kept and performed by the parties hereto, it is mutually agreed as follows:

1. The United States (by the Forest Service, United States Department of Agriculture) and Anaconda will in good faith, and with all reasonable speed, undertake to consummate a land exchange, in the form described hereinbelow, pursuant to the requirements and procedures of Public Law 86-509, or such other federal law as may be applicable.

a. In exchange for title to such portion of the "United States Exchange Lands" (defined below) as shall be finally designated pursuant to paragraph 1(e)(iii) hereinbelow, Anaconda will undertake to transfer to the United States such lands of equal value (hereinafter "the Equal Value Exchange Lands") as shall be designated by the Forest Service, USDA. For purposes of this Settlement Agreement the term "United States Exchange Lands" means the total of (i) the United States lands marked on Exhibit A (attached hereto), and (ii) any additional lands which the United States may designate as available for exchange with Anaconda pursuant to paragraph 1(e)(i), hereinbelow. The said designations

shall be made in the manner, and according to the schedule listed below.

b. It is further agreed that at the time of the completion of the equal value exchange, Anaconda will donate to the United States additional lands (hereinafter the "Anaconda Donation Lands") having a value determined according to the following scale:

<u>Final Exchange Appraisal Value of U. S. Exchange Lands</u>	<u>Exchange Appraisal Value of Anaconda Donation Lands</u>
\$0 - \$300,000	\$75,000
\$300,001 - \$1,299,999	*
\$1,300,000 and over	\$125,000

$$* \quad \$75,000 + \left[\frac{\text{Final exchange appraisal value of U.S. Exchange Lands} - \$300,000}{\$1,000,000} \times \$50,000 \right]$$

c. In addition to the foregoing, Anaconda agrees to deposit in a Cooperative fund \$20,000 to be drawn upon by the United States in completing the land exchange including the costs of the preparation of any environmental impact assessments or environmental impact statements. Any money remaining in this fund at completion of the exchange shall be refunded to Anaconda.

d. Anaconda represents and agrees that it will not undertake the construction of any improvements on that portion of the United States Exchange Lands lying on the west, southwest and southern slopes of Teakettle Mountain, except as it may desire in order to prevent trespasses to said land or to facilitate the planting of trees and/or other vegetation. Such representation and agreement shall be reflected in the documents of conveyance of the United States Exchange Lands in such a manner as to be binding on Anaconda and its successors

-- in interest in the affected lands. The parties may or may not agree to other terms and conditions relating to the preservation of the natural state of the area.

a. In the implementation of this Settlement Agreement, the United States and Anaconda hereby indicate their desire to accomplish the aforesaid land exchange in accordance with the following schedule:

i. Within 60 days of the execution of this Settlement Agreement, the parties shall mutually agree upon what land the United States will be willing to exchange and Anaconda might desire to acquire in addition to the lands shown on Exhibit A.

ii. The United States shall then complete the necessary land exchange appraisals of the land agreed upon. If the appraisals are conducted by Forest Service personnel, they shall be completed as soon as possible, but in no case later than six months from the execution of this Settlement Agreement. If the appraisals are conducted by personnel other than Forest Service personnel, the appraisals shall be completed as soon as is practicable, given statutory and regulatory constraints.

iii. Within 30 days of the completion of the appraisals specified in subparagraph 1(e)(ii) above, Anaconda shall designate such portions of the United States Exchange Lands as it desires to obtain by land exchange. If the lands identified by Anaconda pursuant to this subparagraph are less than the whole of the lands appraised by the United States and if therefore, the United States deems it necessary to conduct further appraisals, such appraisals shall be conducted as soon as practicable in accordance with the time schedules set out in subparagraph 1(e)(ii).

iv. Within 90 days after approval by the United States of the final appraisal report for the United States Exchange Lands designated by Anaconda, the United States shall identify those lands which it wishes to obtain in the exchange (including the Anaconda Donation Lands).

v. Thereafter - (1) Anaconda shall, with the full assistance and cooperation of the United States, proceed to obtain such interest in the lands designated by the United States as is necessary to effectuate the exchange; (2) both the United States and Anaconda shall cooperate in all additional steps necessary to effectuate the exchange as hereinabove described.

2. Although it is the intent and desire of the United States and Anaconda to accomplish the land exchange and donation described hereinabove, it is expressly agreed that at any time prior to the consummation of the land exchange and donation pursuant to paragraph 1, either the United States or Anaconda may elect to terminate the land exchange and donation process by giving written notice to the opposite party of such election. In the event of such an election by either party, Anaconda shall pay to the United States within 30 days the sum of \$75,000. If a termination is made, any amount remaining from the \$20,000 placed in a Cooperative fund by Anaconda for use by the United States to cover its land exchange costs shall be returned to Anaconda. It is expressly agreed and understood that compliance with the terms of this paragraph 2 shall be in lieu of the requirements and agreements of paragraph 1 hereinabove.

3. It is further agreed that this Settlement Agreement shall not give the United States any rights or causes of action for abatement of emissions against Anaconda, Atlantic-Richfield Company, their successors or assigns in interest, in

addition to any rights or causes of action which may exist independently of this Settlement Agreement. In particular, it is agreed that the United States shall not, by reason of this Settlement Agreement, acquire any right to seek enforcement of Montana and/or federal emission standards applicable to the Anaconda plant. However, the United States shall retain such rights, if any, as it may otherwise have to seek enforcement of Montana and/or federal Clean Air Act emission standards pursuant to State or federal law now in effect or hereinafter enacted.

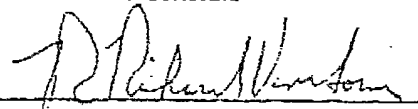
4. The United States hereby agrees for a period of two years from the date of this Settlement Agreement to protect, preserve and make available for inspection and copying by Anaconda upon reasonable notice (a) the exhibits to the deposition of Dr. Clinton E. Carlson taken in the above-referenced case and (b) the documents produced during the said deposition pursuant to the subpoena duces tecum filed in the same proceeding, all of which have been left in the custody of the Forest Service, United States Department of Agriculture.

5. The United States shall, at the time of the execution of this Settlement Agreement, deliver to Anaconda (a) a stipulation of dismissal with prejudice in the form annexed hereto as Exhibit B duly executed by counsel for the United States and an appropriate representative of the Forest Service, and (b) an executed General Release of Claims in the form annexed hereto as Exhibit C.

6. The parties further agree that no party shall be entitled to an award of costs or attorneys' fees as a result of the above-referenced litigation.

THE ANACONDA COMPANY

By


Vice President

THE UNITED STATES OF AMERICA

By Wendy M. John
R. M. Peterson
Sanford Sagalkin

By

WENDY M. JOHN
Attorney, United States Forest
Service

R. M. PETERSON
Chief, Forest Service, United
States Department of Agriculture

SANFORD SAGALKIN
Deputy Assistant Attorney General
Land and Natural Resources Division
Department of Justice

DATE _____

FROM: L.W. SMITH

TO:

_____ SNEDDON

_____ NOTE AND RETURN

_____ ECCLESTON

_____ FOR YOUR FILES

_____ LOCKHART

_____ RETURN WITH YOUR
COMMENTS

_____ RHOADS

_____ FOR YOUR ATTENTION

_____ RYAN

_____ SEE ME RE-ATTACHED

_____ FOR YOUR APPROVAL

EXHIBIT A

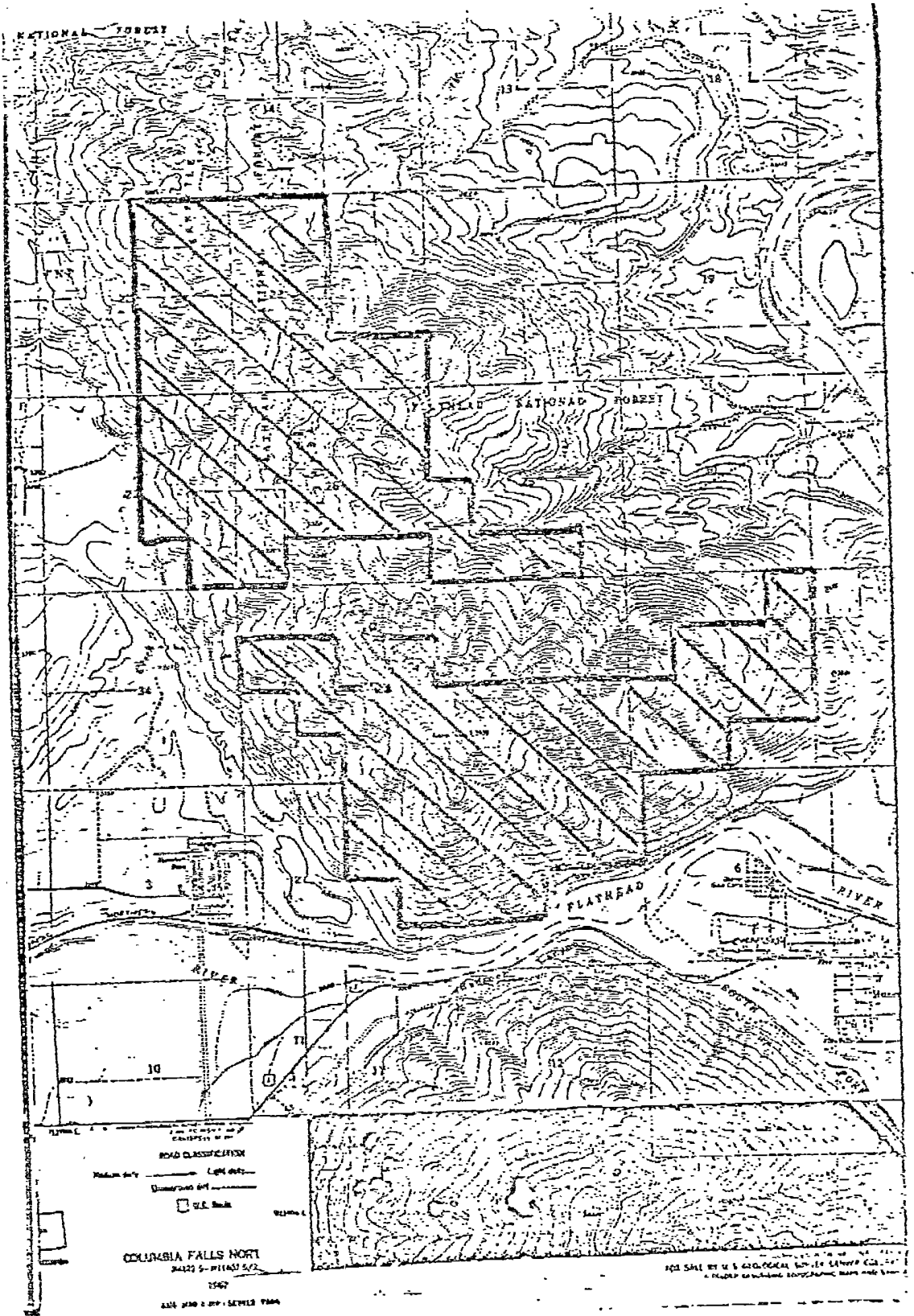


Exhibit A (cont.)

T. 30 N., R. 20 W., P.M.M.

sec. 1, N1/2 and N1/2SW1/4;
Sec. 2, NE1/4 and NE1/4SE1/4.

T. 31 N., R. 20 W., P.M.M.

sec. 22, lots 1, 2, 5, 7, 8, 9, 10, 11, 12;
sec. 23, W1/2, S1/2SE1/4;
sec. 25, W1/2SW1/4, SE1/4SW1/4, and SW1/4SE1/4;
sec. 26, N1/2, N1/2SW1/4, SW1/4SW1/4, and N1/2SE1/4;
sec. 27, NE1/4, N1/2SE1/4, and SE1/4SE1/4;
sec. 35, lot 4, S1/2NW1/4, NE1/4SW1/4, and SE1/4;
sec. 36, S1/2.

T. 31 N., R. 19 W., P.M.P.

sec. 31, SW1/4, NE1/4NE1/4, S1/2NE1/4, SE1/4NW1/4, N1/2SE1/4.

Containing 3279 acres (more or less)

Exhibit B

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MONTANA
MISSOULA DIVISION

UNITED STATES OF AMERICA, :

Plaintiff :

v. :

No. CV-78-80-M

ATLANTIC-RICHFIELD COMPANY :
and THE ANACONDA COMPANY, :

Defendants :

: : : : : : : : :

STIPULATION OF DISMISSAL WITH PREJUDICE

IT IS HEREBY STIPULATED AND AGREED, by and between
the undersigned, the attorneys of record for the parties
hereto, that the above-entitled action be, and the same is
hereby, dismissed with prejudice.

Attorneys for Defendants, Atlantic-
Richfield Company and The
Anaconda Company

Attorneys for Plaintiff, The
United States of America

THE UNITED STATES FOREST SERVICE

By _____

Exhibit C

GENERAL RELEASE OF CLAIMS.

In consideration of the execution by The Anaconda Company (hereinafter referred to as "Anaconda") of a certain agreement dated _____, 1980, entered into by and between said Anaconda and The United States of America (hereinafter referred to as "The United States"), and for other valuable consideration, the receipt and sufficiency whereof is hereby acknowledged, The United States by these presents does remise, release and forever discharge Anaconda and The Atlantic-Richfield Company, their officers, agents, employees, successors and assigns, none of whom admits any liability but all of whom expressly deny such liability, of all and from all manner of actions and causes of action, suits and causes of suit, nuisances, trespasses, damages, charges, expenses, debts, dues, sums of money, covenants, contracts, agreements, promises, claims and demands of any kind or nature which against Anaconda and/or The Atlantic-Richfield Company, their officers, agents, employees, successors and assigns, or any of them, said United States hereafter can, shall or may have by reason of emissions of the Anaconda Columbia Falls aluminum reduction plant at any time from the beginning of the world up to and including the day and date of these presents.

It is expressly understood and agreed that this release shall not release Anaconda from all agreements, covenants and stipulations agreed to be performed on or after the date hereof by Anaconda in that certain agreement with The United States dated _____, 1980, hereinbefore described.

IN WITNESS WHEREOF, _____

as _____, on behalf of The United States
has caused these presents to be executed this _____ day of
_____, 1980.

Washington)
) SS
District of Columbia)

On this _____ day of _____, 1980, personally
appeared before me, a notary public for said District of
Columbia, the within named _____,
in _____ capacity as _____, to me known to be
the identical person described in and who executed the fore-
going instrument, and acknowledged to me that _____ had the
capacity to execute the same on behalf of The United States
of America and executed the same freely and voluntarily for
the uses and purposes therein stated.

IN TESTIMONY WHEREOF, I have hereunto set my hand
and official seal the date first hereinabove written.

Notary Public

My Commission Expires: _____



July 23, 2025

To: State of Montana Natural Resource Damage Program

Re: Comment on the NRDP Draft Assessment Plan for the CFAC Superfund Site

Citizens for a Better Flathead (CBF) has advocated for a clean up plan that will reduce the toxic groundwater plume's harm in a shorter period of time, thus relieving citizens of the environmental and health burdens that will likely occur during and potentially after the clean up period. These burdens will likely be seriously exacerbated during the EPA's Alternative 4 (with selected modification) plan that is estimated to take between 35 and 60 years to reduce the toxic groundwater plume's harm.

CBF continues to believe that there is serious harm prevalent to residents of the area and future generations, especially in light of the recent news of a residential development adjacent to the site. There have been mixed answers concerning the future of this site, post clean-up initiation. Glencore representative, John Stroiazzo, noted at the community liaison meeting in March 2025, that the actual superfund site, which is some 2,200 acres, could eventually be turned into a recreational area, such as a park and would not be the property of the EPA in perpetuity. This deeply concerns us as it indicates EPA is not considering future generations of humans and wildlife in this plan. We have made these concerns known to the EPA and will continue to advocate for a better solution.

The assessment the Natural Resource Damage Program (NRDP) is conducting will hopefully help to fill these gaps in information and help to hold polluters accountable. We have created a comment, with pertinent questions, for NRDP to review as it finalizes the assessment draft and conducts the assessment. We understand that this is an initial assessment and that public comment may be made, outside of this draft's deadline, regularly. Please find our comments as related to the draft assessment plan below:

1.3.4 Remediation versus Natural Resource Damage Assessment and Restoration

The goal of the Natural Resource Damage Assessment (Draft) Plan (hereinafter, "Plan") is to "restore injured resources to their baseline conditions." (p.11). "Baseline" is defined as the

"condition or conditions that would have existed at the Assessment Area had the discharge of oil or release of substances under investigation not occurred (43 C.F.R. §11.14(e))." This baseline standard will target the "affected natural resources and the level of services that they would have provided in the absence of hazardous substance releases from the Site." (p.11). CBF's understanding of this goal is that the natural resource injuries are to be restored at the baseline, meaning 1981 and forward conditions, given CERCLA's restriction on pre-1981. However, it seems this baseline goal is limited to the data and goals provided in the EPA remedial clean up plan, which does not seem to align with the baseline mission. There are two themes of questions that stem from this content:

- (1) How will the injured resources be restored to their baseline conditions under the current plan set forth by the EPA, when Alternative 4 (with selected modification) seeks to reduce the harm of the groundwater plume, with a completion target of between 35 and 60 years? How will this be enforced and mitigated for up to the next six decades?
- (2) How will the PRPs, who did not participate in the resource damage assessment per p. 11, be held financially accountable for restoring resource injuries to their baseline state? It is understood that the PRPs will legally "settle" at some point with NRDP and outside of the EPA's consent decree. However, the PRPs have been largely unresponsive or unwilling to aid in the NRDP's portion of this Plan. While this is obviously no fault of the NRDP, it is a lingering question that CBF believes should be addressed in the Plan so that the community at large may understand the lack of action by the PRPs and how this will impact the Plan's progress.

1.7 Geographic and Temporal Scope of the Assessment

The geographic scope of this project "encompasses 1,340 acres of the CFAC site, as well as any areas surrounding, downstream, or downgradient of the Site that may have been contaminated by Site releases." (p.12) The CFAC site in its entirety is approximately 2,200 acres. There is a planned residential development to be placed immediately adjacent to the outer boundary of the 200 acre site that Glencore has retained ownership of.

- (1) Will these resource assessments account for any damages and hazards that may be relevant to future residents of the area?
- (2) How will this proposed, new residential area be included in the assessment, especially in regards to drinking water and the traveling groundwater plume?
- (3) How will NRDP and the Trustees' analysis consider long term drought and potential flooding events that may result in future harm from movement of toxins left in place?

Page 13 continues to say “[T]rustees reserve the right to expand or further constrain its geographic scope.” Please elaborate as to when this circumstance would arrive and if the public would have input on the restriction of the study. Furthermore, the “rate of recovery” is tied to the “best available information regarding the remedial and restoration activities, natural attenuate, and resource recoverability. If a resource is not expected to fully recover, the injuries will be considered permanent.” (p.13).

- (1) What qualifies the “best information available”? CBF has continuously insisted to EPA that the “slurry wall” method is not an effective, sustainable, long term solution to this issue. How will this information be included in the assessment process?
- (2) What will be the result of a “permanent” injury classification? How can the Columbia Falls community and State be compensated for this classification? How can the Trustees ensure that a permanent injury classification will still be treated to the best possible standard? And, how will public input and reports be included in this process?

CBF continues to be concerned about the safety of future generations of both humans and wildlife in the area. The downstream assessment should incorporate impacts to both current and prospective residents of the area. Furthermore, the draft notes that the Trustees “reserve the right to expand or further constrain its geographic scope.” (p.13). While the EPA and Glencore continue to contend that the toxins and pollutants from the site do not extend past the prescribed border, CBF believes that there has been inadequate soil and water testing conducted by EPA .

- (1) If the Plan is to align with the remediation plan published by EPA, how will the outlying site be evaluated properly to ensure that no toxins have been released in deeper levels of soil and will not spread if construction for residential purposes or otherwise begins? Our concern lies with the nature of construction and thus the disturbance of settled soils that may be holding contaminants. Furthermore, will the Trustees seek to limit the geographic scope for this area based on this contention?

Additionally, please define the “reasonable expected recovery of the injured natural resources and their services” in comparison to the baseline goal noted in pages prior. NRDP notes that a “time frame of injury will include determining when it [groundwater plume] began, how it may have changed over time, and when (or if) it will end.” (p.30). Please explain how this time frame may limit the recovery of damages from the existing and ongoing groundwater plume as the original contributions were pre-1981.

3.3 Geologic Resources Injury Determination

In the Notice of Intent issued to Atlantic Richfield Company and CFAC, page 3 notes:

“Soils, groundwater resources, surface water resources (including sediments), and biological resources have been exposed to, and adversely affected by, elevated concentrations of the hazardous or deleterious substances listed in the Preassessment Screen.”

This is reiterated in the draft Plan’s Executive Summary and Section 3.3 on page 27. However, it is still unclear how this data will be linked to the groundwater plume that has been mobile for a number of years. Again, we note the need to incorporate disturbance of soils in development activities and the impacts this may have on traveling contaminants.

4.1 Ecological Losses and 5.2 Ecological Damages Determination

The Trustees intend to use the Habitat Equivalency Analysis (HEA) in determining ecological losses, as evidenced in pages 28-29. However, CBF contends that the Resource Equivalency Analysis is a more sufficient means to assess the incredible losses of the area. For instance, there is known bull trout spawning habitat on the river. REA is used to “quantify lost ecosystem services when the injury is specific to a particular resource or biological species or species group, particularly when the nature of the injury lends itself to quantification in terms of units of the resource. We believe the REA method will better understand the future somatic loss of this species, and other aquatic life, than the proposed HEA. If a response is provided, please explain why the HEA is the better method to assess this species, in particular.

Because of the extensive damage review that was the outcome of Judge Malloy’s allocation of damage responsibility between Glencore and ARCO, we would like to know that NRDP and the Trustee’s review will include documents produced as part of that court hearing in your analysis of damages.

In addition to CBF’s comments on this draft Plan, we want to include reference to comments that arose at the public hearing.

1. Teakettle Mountains loss of trees due to Fluoride
2. High Fluoride levels in livestock pre- 1981
3. Ruis development of land directly adjacent to the CFAC site
4. Impact on residential water service from Columbia Falls City to the proposed development (please acknowledge the groundwater plume and potential disturbance of soil)

In particular, the Ruis land development and use of the 2,000 acres he now owns and plans to develop for residential use was not analyzed in the remedial investigation for residential use as required under CERCLA. While soil samples were collected, the analysis of those samples were not done for residential uses, which creates a significant gap in the data available for NRDP’s

justification for a permanent injury or irretrievable harm to future residential uses. Additionally, further development of city water service for the scale of residential development planned needs to be considered as the added drawdown of groundwater to service this residential development will likely result in this drawdown reaching closer to, or perhaps, intersecting with the existing plumes of groundwater pollution at the site. Finally, it is our understanding that no analysis of tissue samples for wildlife, both land-based and aquatic, have been done to document the potential long term harm.

We thank NRDP and the Trustees for their time and effort in seeking restoration of the CFAC site to baseline conditions and look forward to collaborating with the agency and Trustees in future efforts.

Respectfully submitted,
Cameron Dexter
Director of Policy and Planning
Citizens for a Better Flathead



P.O. Box 7539, Missoula, MT 59807 ph. 406.542.0539

July 23, 2025

CFAC Draft Assessment Plan Comments
Montana Natural Resource Damage Program
1720 9th Ave.
P.O. Box 201425
Helena, MT 59620-1425.
NRDP@mt.gov

Re: Comments on NRDP's Draft CFAC Site Assessment Plan.

Dear Natural Resource Trustees,

Thank you for the opportunity to comment on the CFAC Draft Assessment Plan prepared by the Montana Natural Resource Damage Program (NRDP). The Clark Fork Coalition (CFC) is a grassroots watershed group based in Missoula, Montana dedicated to protecting and restoring the Clark Fork Watershed – including the Flathead River Basin. For 40 years, the CFC has served as a watchdog for the Clark Fork Basin. In that vein, we are committed to ensuring a comprehensive and protective cleanup at the CFAC site as well as a full accounting of the natural resource injuries so that the public and the Trustees can be made whole.

As the Trustees are aware, many stakeholders and local citizens have significant concerns with the adequacy of the remedial investigation and ultimately EPA's chosen remedy at CFAC. The investigation confirmed that dangerous pollutants – including cyanide, arsenic, fluoride and heavy metals – are leaching into groundwater and are flowing downgradient and discharging into surface waters of the Flathead River and Cedar Creek. Rather than remove the sources of these pollutants, the EPA endorsed a remedy that would only remove a small portion of the contaminated materials, with the remainder "contained" on site and monitored to detect the continued movement through groundwater pathways.

The Site's Trustees have formulated a plan to use existing and newly collected data to fill information gaps and adequately characterize injuries to public-owned water resources and wildlife. The CFC supports NRDP's assessment plan and believes it will bring the public a better understanding of both historical and current impacts of Site contamination on the surrounding environment. The CFC offers the following specific comments on the Draft Assessment Plan description of Proposed Assessment Activities (Table 6).

Macroinvertebrate Toxicity/Biota Data Collection: The EPA has failed to adequately investigate how known pollutant discharges from CFAC may be impacting sensitive aquatic life, including on the breeding grounds and essential habitat for fish, nor have they looked closely at whether CFAC pollutants can bioaccumulate in fish tissue and negatively impact fish consumption. Therefore, CFC strongly supports NRDP's assessment activities related to macroinvertebrates and biota because this

additional sampling will provide scientifically credible data on biota and other receptors who may be exposed to toxic substances found in soil, as well as ground and surface waters adjacent to the Site.

Groundwater Data Collection: CFC fully supports the collection of additional groundwater data to better characterize the discharge rate from seeps, better understand current and potential future groundwater conditions and potentially identify preferential pathways for the movement of contaminants between groundwater and surface water.

Cultural Use Assessment Studies: As noted in previous correspondence between the CSKT and the EPA, the Tribes seek to ensure the cleanup plan for CFAC will adequately protect the Flathead River, the fish that depend on those waters, and the Tribes' treaty reserved fishing rights. To date, the EPA has failed to conduct bona fide consultation with the CSKT to address these concerns. Moreover, the EPA has not fully addressed the risks the site may pose that are unique to Tribal members as required by law and EPA guidance. While NRDP's Assessment cannot supplant the required consultation on the EPA's chosen remedy, the Assessment can and should hone in on the identification and quantification of the injuries and service losses for the general population and those specific to Tribal members, who possess unique rights to many of the resources injured by CFAC's historical activities.

In sum, CFC believes – and the law requires – that any historical or ongoing contamination of public resources that was created by the PRPs at CFAC must be addressed by the PRPs so that the public is made whole and Tribal rights are honored. As such, every effort must be made to characterize the Site's impacts to human health and the environment. NRDP's proposed assessment will go a long way toward increasing the rigor and credibility of the investigation and will help the public draw meaningful conclusions about the magnitude and extent of natural resource injury at the CFAC site.

Sincerely,

Brian Chaffin, PhD
Executive Director
Clark Fork Coalition
P.O. Box 7539
Missoula, MT 59807

Comment #10

To: Katherine Hausrath, Sydney Stewar and Jody Unruh

Don't use the EPA ROD for the superfund site to lead you astray. They have spun the facts about that property in ways that are misleading, and in many ways, missing factual information about the background of the site. They are doing it to you already by telling you the questions that were raised at the 6/10/25 meeting will be taken under advisement. They aren't going to do anything about the questions, just lip service.

Case in point, they claimed in the ROD that there were 8 dumps on site and all have caps with geotextile uppers and they have bottom bases of clay that are water impermeable. The truth is there are 9 separate waste dumps. Only 2 have a geotextile cap, and only one has a clay bottom. 8 of the 9 dumps then don't have any bottom and the water table moves up into the waste multiple times each year. In addition, they drilled no test wells into any of the dumps so they know nothing about what is buried in these dumps. They were told that there are 16 rectifier stations filled with Mercury filled glass ampules, each station is roughly 1600 cubic feet in size. The ninth dump, I told them where to look for it, contains 1.4 million pounds of highly fluorided alumina and pure crushed cryolite bath that is buried in the water table. This dump was never permitted by the State of Montana to my knowledge.

EPA allowed CFAC to get away with providing only 6 aerial photographs of the site over the 50 plus years of operation. There were 7,000 prints of the facility and over 200 arial photos that were taken in the years up to 2003 that were in the engineering office that I ran. You need to look harder for these photos if you want to pin down the damages the plants fluoride pollution did to the surrounding property. Start with CFAC and their lawyers, then go to the Interlake and Hungry Horse news and research their archives before going to the Mansfield Museum in Missoula to look for the photos, Mel Ruders widow donated to the museum after his death. A search of the satellite photos the USGS service has taken over the years or the agricultural and US Forest Service would have taken over the decades may also be helpful in cataloging the changes to the CFAC properties. If all of this fails I'll provide you with some of the pilots names that took the photographers up to take their shots. These photos along with the transcripts of the multiple lawsuits the company lost in the 60's and 70's will explain how the company went from 1500 acres to the 4000 acres the company owned in 1979. As you might assume They are air pollution settlements that seriously damaged surrounding private property, fruit orchards, vegetation, water resources, domestic livestock and the large herds of deer, elk, bear and all manner of smaller creatures. After all this site next to Teakettle mountain has been a major winter range for over a century.

These photos will really prove the size and volume of damage done on Teakettle mountain and the extent of air pollution and the measures that were required in Glacier National Park to quantify the affects of fluoride and sulfur on the trees and waters of this World Heritage Site. After all the plant ran at less than 1.64 pounds of fluoride per ton of aluminum produced that

was released thru the open air roofs as the standard of performance demanded by the State of Montana in the 1990's. These measurements were taken with state of the art air samplers permanently located in the plant roofs whereas in the 50's,60's, 70's and 80's there was a single moveable sampler in each line located on the potline floor next to the fresh air intake vents for the plant. There was no compensation for airflow leaving the plant and numbers in the late 60's that led to the pollution lawsuits were between 1,000 and 1,200 pounds of fluoride per ton of aluminum produced. This resulted,at a minimum' in over 5,000.000 pounds of fluoride dumped into the air shed around the facility every year.

Unfortunately, the State of Montana never made a standard for organic pollutants leaving the plant with the fluoride in the air. We burned 600,000 pounds of carbon every day. This carbon was between 23 and 35% coal tar pitch and 77 to 65% petroleum coke. Coal tar pitch is known to contain roughly 10,000 individual chemicals with many of them classified today as carcinogens. Petroleum coke is made by heating everything in a raw barrel of oil that is left over from the recovery of all the saleable liquids in the oil. It contains every chemical ,ie. sulfur, heavy metals etc., That were in the oil when it was pumped from the ground. When the aluminum plant burned these two components of the carbon we used they were all liberated into the atmosphere. They fell to the ground to contaminate the surface soil and infiltrated into the ground down to the water table in places. Look up benzo-a-pyrene to see just one of the chemicals found in coal tar pitch and its affect on human or animal health. Then look at the soil contamination charts you sent us. That chemical is all over the plant site including the land Ruiz bought as well as the conservation easement across the river. It is in the riparian area on the river island and is found at depth in many of the test wells that were sampled. This and many other ring based organic chemicals were released over 55 years of operation with no environmental limits and by extension no standards from the State. When the EPA got to the part of their plant studies(BERA) in public meetings they told us they would not look at the health effects these organic chemicals may have had on humans or other animals. They specifically stated they would not look at cancer rates in the north valley and they didn't. This one area should be studied as well as the prevalence of Alzheimers/dementia from the local population. The Flathead Valley has been billed as an environmentally clean area for at least the past 10 decades. Surely sufficient medical data exists that would highlite abnormal health consequences of past aluminum plant employees or even populations in the North Valley.

Other damages this plant operation has or will be a party too include:

Water ownership and use issues. The water was adjudicated to be under the control of the Flathead CSKT tribes. Were they not damaged by an agreement between the State and Anaconda Aluminum in the 1950's that let the aluminum company use billions of gallons of water that technically was not in their control and contaminate it before putting it into the Flathead river and the underground aquifers. The tribe should be owed compensation for water that was used and not paid for.

that was used and not paid for. PFAS (Poly fluoro Alkyl Substances) EPA didn't even look for this substance during their 8 year investigation. Not a word about it even today in 2025. In the last 5 years how many communities have gotten letters from them to evaluate their water wells and start enacting regulations to control these chemicals in their consumers homes. Any new technology or new wells being drilled because of their concerns. I think Kalispell and Columbia Falls have been drilling new wells and researching technical water filtering technologies in the past year because of PFAS. If there is ever a facility that would be a source of PFAS it is an aluminum plant. These chemicals are similar to the material that coats non-stick pans- Teflon. The aluminum plant operation uses molten fluoride bath in contact with a 50 ton pure carbon anode. We had roughly 3 anode effect per day on each of the 600 cells that lasted roughly 3 minutes each. While under anode effect conditions the process of breaking down alumina stops and the process produces fluorocarbon gases that coat the anode face. This extra electrical resistance caused by the gas(SOUNDS LIKE PFAS TO ME) drives extra energy consumption which is dissipated as heat too the cell. To break this bubble down we pushed green pine poles into 1000 degree centigrade cells or later 90 psi compressed air. They both massively stirred the cell to get liquid aluminum to short circuit the cell and break the gas bubble so the process of making aluminum restarted. This caused the cell to over-pressure and push these fluorocarbon gasses out of the cell and into the external atmosphere in and out of the plant. PFAS investigation of the plant surroundings is needed and costs to correct, if found, should be back charged to CFAC and British Petroleum when costs to the town of Columbia Falls and local residents for personal expenditures to clean the water entering their homes and businesses. Another large expense that should be picked up by CFAC is the cost coming to the homeowners of the Aluminum City area. We were told for at least the first 5 years of the EPA study that they were only going to clean the area for future industrial or commercial use. CFAC ultimately couldn't find anyone interested in locating on this property so with the help of the city of Columbia Falls started courting housing developers. The city will shortly be attempting to annex the aluminum city area because they now need a corridor to provide city water and sewer as well as increased property taxes to this area. We in Aluminum City do not want to pay for the cost of the developer or the city. They are damaging our personal financial health. This encroachment on the critical winter range in this area will adversely affect the animal population and the enjoyment of the local population that enjoy watching these animals survive the winters.

Another damage to the community is the 2021 ROD that was used to put the Flathead River back into its original 1955 stream bed that the plant blocked off to provide for sewer and plant cooling and surface water runoff. EPA forced a quick, no public hearing decision thru in late 2020 because of a decision they made to put a steel structure across the river to maintain the integrity of the ponds. The river didn't agree with their decision and began washing out the structure so a quick fix was again required. Rather than put the stream back in its original bed

as they said they were doing, the plant hired a contractor that only removed the ponds and left part of the roads that created the dikes that surrounded the ponds. Unfortunately, the road at the bottom of the most downstream pond was left higher than the old river bed. This resulted in the river creating a diversion of the river by piling gravel and wood debris in this area. This spread the flow of the river and started a secondary flow directly across the island that is cutting the bottom third of the island off. It also created a serious safety problem because the area below this is regrowth of the poplar forest and low brush that has appeared since 1964. Because of its position it is filling with wood debris whenever the river flows above 20,000 cubic feet per second. Normal flow in the spring in this area peaks between 25 and 50,000 cfm. So every year this area gets more dangerous to some novice rafter and the passengers that might take this alternate river channel in this area. Also the riparian area is located in this area and will be destroyed by the river seeking a new channel in this area. Hope that isn't the reason that EPA chose not to put the river back in its original channel. It fits with the rest of their plan for the site of using mother nature to take time and slowly lower pollution concentrations into the river. 5, 50 years, 500 years? You should force CFAC to do what they said they would do and put the river back to its entire stream bed on the backside of that island to repair the damage they did to that island in 1955.

You might also want to have a hydrologist look at the thousands of dollars the BNSF has spent trying to keep their mainline from sliding into the river at the bottom of this island. By diverting the stream behind the island Anaconda may have created the problem when the river was diverted at the top of the island and it came back into the bank downstream creating the washout that is forcing more rip rap to be placed in this area and a new road to access the river. Finally, the plant fought every effort from the county to place the plant waste into a certified county facility for 55 years. Instead they created 9 non-regulatory facilities on their property. When they needed to destroy the facility they came to the county and wanted into their facility. They placed over 1 billion pounds of material in 4 years into the county dump and 2 months ago the dump director was in the interlake floating the idea that the dump is filling and we should be buying more property now. Using the facility after over 50 years of non-compliance in dumping is a shame and this billion pound dump should be investigated with the intention of having CFAC cover the future cost of procuring storage for a billion pounds. Your rough draft should be updated to carefully consider the damages this aluminum plant should be financially liable for negatively affecting the environment and the people living in the area.