

GENERAL SITE INFORMATION, CHARACTERISTICS, AND STATUS

Project Name	<u>CLARK FORK RIVER</u>	ProjectID: 08-03
Last Updated:	08/23/04	

City: multiple

County: Missoula, Granite, Powell, Deer Lodge

State: MT

Country: USA

Bodies of Water: Clark Fork River; Milltown Reservoir

US EPA Region: VIII

Status (Active, Complete, or Monitoring Only): Active

Date On NPL: 1985

ROD/ESD Date: 2004

Operable Unit: Clark Fork River Operable Unit of the Milltown Reservoir/Clark Fork River Superfund Site (OU #3)

Areas of Concern (length or acres): 120 river miles of the Clark Fork River, from the headwaters at Warm Springs Creek to Milltown Reservoir (just east of Missoula)

Other Characteristics of Water Body: As described in the 2004 ROD:

“The Clark Fork River OU consists of 120 river miles of floodplain and irrigated fields at the upper end of the Clark Fork River Basin. Along the many portions of the OU, the river is bounded or traversed by Interstate 90, secondary roads, and two railroads (one active, one abandoned). The placement of these structures has diverted and channelized the natural course of the river in some areas, primarily in Reaches B and C.”

The Clark Fork River has been divided into three reaches based on physical features, proximity to historic mining, and impacts. These are:

- “Reach A – Deer Lodge Valley Reach: Extends from the southeastern tip of the OU near river mile 0 at Warm Springs Creek to just upstream of Garrison at River mile 43. Reach A has the broadest extent of the 100-year floodplain and is nearest to historic mining and milling sites in Butte and Anaconda. Extensive exposed tailings and unstable streambanks, as well as stressed vegetation, exist in this area.” Flow in this reach has been calculated at about 1,900 cfs, which corresponds to a 7-year flood event.
- “Reach B – Drummond Valley Reach: Extends from immediately upstream of Garrison, where the Little Blackfoot River enters the Clark Fork, to downstream of Drummond at river mile 76, for a total of 31 river miles. At the starting point for this reach, the addition of water from the Little Blackfoot River may, under certain flow conditions, nearly double the Clark Fork’s flow. The floodplain is more narrow and the gradient higher than Reach A, and exposed tailings are far less extensive.”
- “Reach C – Bearmouth Canyon Reach: Extends 47 river miles from Drummond to the northwest tip of the OU area. Through this reach the floodplain is constrained by a narrow valley, roads, and railroad grades. Here, the flow is augmented by several tributaries and the reach is farther away from historic mining sites. No exposed tailings are evident.”

“Studies performed for the Remedial Investigation and the Feasibility Study have shown that a focused cleanup effort in the Reach A results in the greatest reduction in mine waste

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contamination. Efforts in Reach B would be expected to provide limited additional benefit. Reach C has more limited risks and no clear clean-up alternatives because of the widespread contamination and mixing of the contamination with fluvial soils, and the lack of feasible alternatives.”

Contaminants of Concern: heavy metals (arsenic, cadmium, copper, lead, zinc)

Source of Contamination: As described in the ROD:

“In the Butte area, mining companies routinely disposed of mining and milling wastes directly into Silver Bow Creek. The mining wastes were carried away and mixed with river bed sediments by the various higher seasonal flow events in Silver Bow Creek and much was subsequently carried into the upper Clark Fork River. Large quantities of wastes from the Anaconda Company’s operations in Anaconda reached Clark Fork River by washing down Warm Springs Creek and other tributaries. Aerial deposition from the Anaconda Smelter operations also contributed to the metal levels in the Deer Lodge Valley, and to the runoff of these metals into the river.”

Contaminated Area

Refer to “Other Characteristics of Water Body.” Also, as described in the ROD:

Physical Characteristics:

“Approximately 156 acres of exposed tailings and 3,339 acres of buried tailings were estimated in Reach A. In the Feasibility Study, the number of acres of exposed tailings in Reach A was estimated to be 167 using aerial photography and geographic information system mapping techniques (actual acreage could be as high as 250 acres). Tailings deposits range in thickness from less than 1 inch to 34 inches.”

Type of Regulatory Action: Superfund. Final.

Overall Status Summary: The Clark Fork River is addressed as one of the three operable units (OU #3) of the Milltown Reservoir/Clark Fork River Superfund Site. Addressed is 120 river miles of the Clark Fork River in Montana. The Clark Fork River is immediately downstream of Silver Bow Creek (Project ID 08-01) and extends to the maximum Milltown Reservoir pool. Heavy metals (arsenic, cadmium, copper, lead, zinc) from upstream historical mining operations are the contaminants of concern.

According to the ROD:

“Copper contamination is emphasized in the Selected Remedy because it is present in significant concentrations within the mining and smelting wastes, it has a large and consistent data set, it is the most toxic of the metals to aquatic life in this river system, it can be toxic to plants in the floodplain, and it is used as an indicator for other contaminants. In addition, specific soil cleanup levels for arsenic, the major contaminant affecting human health and a potential contributor to risks to aquatic life, are set forth.”

The Clark Fork River has been divided into three reaches to facilitate investigation and determine remedial actions. As described in the ROD, Reach A is the first 43 river miles and is characterized by “extensive exposed tailings and unstable streambanks, as well as stressed vegetation;” Reach B is the next 31 river miles wherein “the floodplain is more narrow and the gradient higher than Reach A, and exposed tailings are far less extensive;” and Reach C is the final 47 river miles with no exposed tailings and through which “the floodplain is constrained by a narrow valley, roads, and railroad grades and the flow is augmented by several tributaries.”

The ROD was issued in April 2004. The Selected Remedy designates remediation of Class I streambanks as the top priority. The Selected Remedy is a combination of remedial actions which include:

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1. Stabilizing eroding streambanks and providing an approximately 50-foot wide protective riparian corridor on both sides of the river. This will be accomplished along virtually all of Reach A and in small, localized areas of Reach B. Of the 86.2 miles of streambank in Reach A (counting both sides), 67 miles (78%) would receive some type of stabilization treatment along with 472 contiguous acres of riparian buffer zone.
2. Removal of exposed tailings to a central disposal area and replacement with clean soils. The central disposal area is Anaconda's Opportunity Ponds, an existing 5 square mile disposal area.
3. In-situ treatment of areas of impacted soils and vegetation.
4. Necessary revegetation of the riparian corridor and other treated removal areas.

The work is estimated to take ten years and cost \$117.5 million.

Riverbed sediments are not targeted as part of the ROD remedy. As explained in the Ecological Risk Assessment (ERA):

"... some sediments may pose risk to benthic species, but most sediments pose only low or minimal hazard. Total metals concentrations in the sediments have a relatively low bioavailability and sediment pore water dissolved metals concentrations are not above the risk-based levels identified in the ERA. Direct toxicity testing of the sediments evaluated in the ERA concluded no effects from sediment exposure. Evaluation of the lines of evidence using the sediment quality triad or EPA's ESGs leads to the clear conclusion that sediments do not pose a significant risk to the aquatic biota of the CFR under current conditions. Therefore bed sediments are not included in the problem definition from an aquatic risk standpoint."

USEPA screened out such remedial actions as active treatment of groundwater or surface water, or removal of streambed sediments because of its preference to address the source of contamination and because of implementability concerns (Reference B-1125).

Remedial Action Planned: ☐

Risk Assessment: ☐

Remedial Action Implemented: ☐

Status of Dredging ☐

PRPs: ☒

Contacts: ☒

References: ☒

Modeling: ☐

Fishing Advisory: ☐

Key Conditions: dedicated landfill or CDF, extended (>1 mile) river, floodplains targeted, habitat/streambank restoration, more-harm-than-good, post monitoring, property access issues, wetlands

POTENTIALLY RESPONSIBLE PARTIES

Project Name **CLARK FORK RIVER**

ProjectID: 08-03

PRP Name: PRP INFORMATION NOT RELEASED

PRPID:

Street Address:

City:

State:

KEY CONTACTS

Project Name **CLARK FORK RIVER**

ProjectID: 08-03

Last Name: KEY CONTACT INFORMATION NOT RELEASED

Contact ID:

First Name:

Title:

Company:

Address:

City:

State:

Postal Code:

Work Phone # :

Other Phone #:

Fax # :

Email Address:

REFERENCES

Project Name CLARK FORK RIVER

ProjectID: 08-03

Reference Type: A

ReferenceID: 1027

Title: *Superfund Program Clean-up Proposal - Clark Fork River Operable Unit*

Location: AEM

Category: ROD/Proposed Plan/Action Memo/Decision Document

Prepared by/Author: US EPA Region VIII

**Preparer/Author
Address:**

Prepared For: General Public

Date Published: August 2002

**Key Words and
Phrases:**

Reference Type: A

ReferenceID: 1137

Title: *Record of Decision: Clark Fork River Operable Unit of the Milltown Reservoir/Clark Fork River Superfund Site*

Location: AEM

Category: ROD/Proposed Plan/Action Memo/Decision Document

Prepared by/Author: US EPA Region VIII

**Preparer/Author
Address:** 10 West 15th Street, Suite 3200
Helena, Montana 59626

Prepared For: General Public

Date Published: April 2004

**Key Words and
Phrases:**

Reference Type: A

ReferenceID: 1138

Title: *Fact Sheet: Clark Fork River Operable Unit*

Location: AEM

Category: Site Update

Prepared by/Author: US EPA Region VIII

**Preparer/Author
Address:**

Prepared For: General Public

Date Published: April 2004

**Key Words and
Phrases:**

REFERENCES

Project Name **CLARK FORK RIVER**

ProjectID: 08-03

Reference Type: B

ReferenceID: 1125

Title: ***e-mail re: Question: Clark Fork River***

Location: AEM

Category: Site Update

Prepared by/Author: Brian Bartkowiak

**Preparer/Author
Address:** Montana DEQ

Prepared For: AEM, Inc.

Date Published: June 15, 2004

**Key Words and
Phrases:**

Reference Type: B

ReferenceID: 1129

Title: ***e-mail re: Question: Clark Fork River***

Location: AEM

Category: Site Update

Prepared by/Author: Bob Fox

**Preparer/Author
Address:** US EPA Region VIII

Prepared For: AEM, Inc.

Date Published: June 16, 2004

**Key Words and
Phrases:**

Reference Type: C

ReferenceID: 631

Title: ***Clark Fork, Mont., Superfund Site***

Location: AEM

Category: Site Update

Prepared by/Author:

**Preparer/Author
Address:**

Prepared For: Superfund Week

Date Published: December 22, 2000

**Key Words and
Phrases:**

REFERENCES

Project Name CLARK FORK RIVER

ProjectID: 08-03

Reference Type: D

ReferenceID: 532

Title: *Press Release: EPA and DEQ Announce Record of Decision for Cleaning Up the Clark Fork River in Montana*

Location: AEM

Category: Site Update

Prepared by/Author: US EPA Region VIII

**Preparer/Author
Address:**

Prepared For: General Public

Date Published: May 4, 2004

**Key Words and
Phrases:**

Reference Type: M

ReferenceID: 391

Title: *What Kind of River Do You Want?*

Location: AEM

Category: Site Update

Prepared by/Author: Clark Fork River Technical Assistance Committee

**Preparer/Author
Address:** P.O. Box 9086
Missoula, MT 59807

Prepared For: General Public

Date Published: Undated

**Key Words and
Phrases:**

FISH ADVISORIES

Project Name **CLARK FORK RIVER**

ProjectID: 08-03

Advisory: Statewide: All rivers and lakes ***AdvisoryID:*** 1237
Extent: Statewide: All Rivers and Lakes
Pollutant: Mercury
Species: walleye
Population: NCSP
Population Definition: No Consumption-Subpopulation(s): Advises against consumption for populations that are potentially at greater risk, e.g., pregnant or nursing women, and small children.
Advisory Type: Statewide ***Advisory Number:*** 300198
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: Howard Reid ***Contact Number:*** 406-444-5306

Advisory: Statewide: All rivers and lakes ***AdvisoryID:*** 1238
Extent: Statewide: All Rivers and Lakes
Pollutant: Mercury
Species: pike-northern
Population: NCSP
Population Definition: No Consumption-Subpopulation(s): Advises against consumption for populations that are potentially at greater risk, e.g., pregnant or nursing women, and small children.
Advisory Type: Statewide ***Advisory Number:*** 300198
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: Howard Reid ***Contact Number:*** 406-444-5306

Advisory: Statewide: All rivers and lakes ***AdvisoryID:*** 1239
Extent: Statewide: All Rivers and Lakes
Pollutant: Mercury
Species: trout-lake
Population: NCSP
Population Definition: No Consumption-Subpopulation(s): Advises against consumption for populations that are potentially at greater risk, e.g., pregnant or nursing women, and small children.
Advisory Type: Statewide ***Advisory Number:*** 300198
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: Howard Reid ***Contact Number:*** 406-444-5306
