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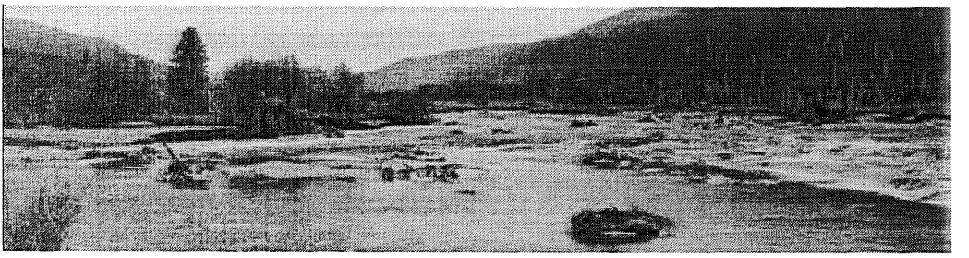
CLARK FORK RIVER
Technical Assistance Committee.



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Anaconda Company Smelter Site

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The site is located at the southern end of the Deer Lodge Valley, at and near the location of the former Anaconda Minerals Company (AMC) ore processing facilities. These facilities were developed to remove copper from ore mined in Butte from about 1884 through 1980, when the smelter closed. Arco purchased AMC in 1977 and is the Potentially Responsible Party (PRP) at the site.

More than 65,000 acres at the southern end of Deer Lodge Valley have been affected by operations at the Anaconda Company Smelter. One hundred years of milling and smelting operations, including discharges into the air and stream, have scattered wastes that are high in arsenic and metals over a wide area.

Estimated waste volumes at the site include about 230 million cubic yards of concentrated mine tailings, 30 million cubic yards of furnace slags, 500,000 cubic yards of flue dust and 300 square miles of contaminated soils.

In 1980, Atlantic Richfield Company (Arco) closed the smelter and thousands of people lost their jobs. In September 1983, the Environmental Protection Agency (EPA) placed the area surrounding the smelter on its Superfund National Priorities List (NPL), and EPA, the State of Montana and Arco began investigations into the extent of contamination.

Since 1983, removals and cleanup actions have reduced human health risks at the site. Smelter investigations and cleanups have been part of an economic rebirth in this former company town.

BACKGROUND

Milling and smelting produced wastes with high concentrations of arsenic, as well as copper, cadmium, lead and zinc. These contaminants pose potential risks to human health, to life in nearby streams, and to plants and animals in adjacent lands. In addition to the millions of cubic yards of tailings, furnace slag, flue dust, and square miles of soil contaminated by airborne wastes, millions of

Stay Involved.

Milltown / Clark Fork Meetings Calendar

January 8 -- Milltown Superfund Redevelopment Working Group meeting. Lutheran Church in Bonner, 6:30 - 9 p.m.

January 15 -- Community Health and Safety meeting, 10 a.m. at the Piltzville Fire Station.

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gallons of ground water have been polluted from wastes and soils.

Because of the size of the facilities, the hundred year operation, the large volume of wastes and the wide area contaminated, the site has been divided into smaller, more manageable Operable Units.

SUMMARY OF CLEANUP PROGRESS
Anaconda Smelter Demolition and Initial

Stabilization Actions:
Between 1983 and 1986 EPA provided oversight of the smelter demolition, on-site and off-site material transport, and initial stabilization efforts to control fugitive dust from waste sources.

Mill Creek Children Relocation Removal Action:
The Centers for Disease Control conducted a urinary arsenic survey, in March 1985, which showed that preschool children from the community of Mill Creek had higher urinary arsenic levels than children of other communities in the Anaconda area. In May 1986, the EPA, together with the Federal Emergency Management Agency (FEMA), dealt with immediate public health concerns in Mill Creek by temporarily relocating families with young children or people with special health problems. Urine arsenic levels in all children who were temporarily relocated dropped to the normal range after relocation. EPA and FEMA also supervised the control of flue dust on Smelter Hill, above the community, and of dust from unpaved community roads.

Mill Creek Relocation:
In 1987, as a final remedy, EPA selected permanent relocation of all Mill Creek residents. EPA entered into a Consent Decree with Arco in January 1988 to implement the relocation. All residents were relocated by the fall of 1988. The home demolition and site stabilization activities were completed later that year. Demolition debris and contaminated soils were disposed of on Smelter Hill. Foundations were buried on site, and the area was regraded and replanted. Fences and signs were installed to control access and maintain the vegetation.

Anaconda Yards Time Critical Removal Action:
Under an emergency removal action, between 1991 and 1992, arsenic contaminated soils were removed from three Anaconda neighborhoods: Teresa Ann Terrace, Elkhorn Apartments and Cedar Park Homes. EPA entered into an Administrative Order on Consent (AOC) with Arco in 1991 to implement yard removals. Work on residential soils consisted of removing 18 inches of contaminated soil and replacing it with two inches of lime rock overlain by 16 inches of clean soil. In developed yards, topsoil and sod were replaced; in undeveloped areas, the soil was seeded.

Arbiter Non-Time Critical Removal Action:
The Arbiter Plant (copper refining) was designed to produce cathode copper from sulfide ores using an ammonia leach. Wastes produced by the plant, including

arsenic, cadmium, lead and zinc, were slurried and piped to disposal ponds next to the plant. The excavation of the Arbiter material was completed in December 1992. The material, consisting of about 275,000 cubic yards of soils and sludge, was placed in a lined hazardous waste repository on Smelter Hill. The repository was closed in November 1994.

Beryllium Non-Time Critical Removal Action:
A beryllium flake metal pilot plant and a beryllium oxide pilot plant were operated briefly at the site. Following plant closure, stored wastes and contaminated materials in drums were disposed of in the B2 cell of the Opportunity tailings ponds and on Weather Hill. EPA entered into an AOC with Arco in 1992 to remove these materials.

Excavation of beryllium at the B2 site began in September 1992. The beryllium contaminated materials were placed in one cubic yard boxes. About 1,100 boxes were hauled from the B2 site to a lined hazardous waste repository on Smelter Hill. Boxes were placed in the repository and cement grout was added for additional protection. Excavation of beryllium material at the Weather Hill site was completed by early January 1993. All of the beryllium wastes have been hauled to and consolidated in the repository, which was closed in 1994.

Old Works Stabilization Removal Action:
The Old Works Operable Unit (OU) contains large volumes of various wastes and debris that originated from copper ore milling, smelting and refining operations at the Old Works Site (Upper and Lower Works) from 1884 to 1902. In 1992, EPA entered into an agreement with Arco to address the immediate health and environmental concerns stemming from contaminants released into Warm Springs Creek. The remedy included stabilizing the Red Sands adjacent to Warm Springs Creek and repairing breaks in the creek levees. They also installed fencing to limit access.

Flue Dust Remedial Action:
Flue dust, a byproduct of copper smelting, contains on average, 14.6 percent copper, 4.9 percent arsenic, and 0.14 percent cadmium. In 1991, EPA selected a remedy to stabilize the dust with cement and lime, and then place treated materials in a repository.
EPA entered into a consent decree with Arco to implement the flue dust remedy in December 1992. Treatment of over 500,000 cubic yards of flue dust was completed in December 1993. The repository used a liner, leachate collection and detection system, as well as a cap with the same liner, cover soil and vegetation. The repository was closed in November 1994.

Old Works/East Anaconda Development Area Remedial Action:
EPA selected a remedy in 1994 for the Operable Unit known as Old Works/East Anaconda Development Area. It dealt with 2,000 acres of reclaimable property and the protection of Warm Springs. EPA issued a Unilateral Administrative Order (UAO) to Arco in 1994 to

- Cap or treat contaminated wastes and soils;
- Manage surface water runoff;
- Prevent flood erosion;
- Manage future land and water use; and
- Preserve historic features.

Where waste and soils exceeded arsenic levels of 1,000 and 500 parts per million (ppm), respectively, recreational and commercial/industrial areas were cleaned up. Construction, including a Jack Nicklaus designed golf course, began in June 1994. The golf course opened to the public in May 1997. Remedial action should be complete for most of the operable unit by the end of 2000.

Community Soils Remedial Action:
In 1996, EPA selected a final remedy for addressing all remaining residential soils, including railroad bed materials in Anaconda. The remedy includes

- Cleaning all current residential soils that exceed 250 ppm soil arsenic concentration, through removal and replacement with clean soil, and placement of a vegetative or other protective barrier;
- Cleaning all current commercial/industrial soils high in arsenic, through replanting and/or installing engineered covers;
- And constructing an engineered cover over all contaminated railroad bed material within the community of Anaconda to prevent direct contact with contaminated materials, and to reduce potential for erosion and transport of contaminants to residential and commercial/industrial areas.

Remedial action is now tied to the Anaconda Regional Water, Waste and Soils operable unit, with design completion expected in 2000 and cleanup beginning in 2001.

Anaconda Regional Water, Waste and Soils Remedial Action:
This is the last operable unit of the Anaconda Smelter NPL Site, and addresses all remaining issues not already covered. EPA signed a Record of Decision for the OU in September 1998. Remedial design is progressing.

Through its Technical Assistance Grant (TAG) program, EPA provides funds to residents in Anaconda to review EPA studies and cleanup work and to relay their findings to the community. Economic redevelopment and site reuse is a focus of the TAG group.
Enforcement:

Arco's liability and EPA's costs are the subject of ongoing litigation in U.S. v. Arco (D.MT). The State of Montana and Arco have settled some of the continuing natural resource damage lawsuit issues, and an advisory group appointed by Montana's governor is educating the public and reviewing proposals for restoring resources.

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