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The Copper Mine Ran Through It: Tales of a River's Rescue

By JIM ROBBINS

MISSOULA, Mont., March 31 — When the talk here turns to fishing, as it often does, it is usually about the Blackfoot River, which meanders out of snow-mottled mountains to the north and was affectionately portrayed in "A River Runs Through It" by Norman Maclean.

Not many people regard the Clark Fork, which combines with the Blackfoot just out of town, the same way. In a state known for pristine rivers, the Clark Fork has been poisoned by years of mining the copper deposits that gave the area around Butte the nickname the Richest Hill on Earth.

The state, however, may recover the clean free-flowing river that it lost more than 100 years ago, though just how clean is a matter of dispute. After years of study, the Environmental Protection Agency will soon release a \$90 million to \$100 million plan to reclaim the waterway over the next 10 years or so. The E.P.A. has also said it favors an additional \$90 million plan that will remove a dam on the waterway that has more than six million cubic yards of toxic sediment lodged behind it.

The expensive cleanup "makes amends for the Richest Hill on Earth," said Tracy Stone-Manning, executive director of the Clark Fork Coalition, a group that has pressed state and federal agencies since 1985 to require an aggressive cleanup. "People wrote this river off, but the Clark Fork has the potential to be a world class trout stream."

The sprawling Clark Fork Basin Superfund complex has four sites, and the river is part of one. All are a product of mining in and around Butte, on the Continental Divide in southeastern Montana. Butte bloomed from mining camp to city in the late 1880's. It had an opera house, mansions, fine hotels and restaurants, all made possible by 10,000 miles of underground mines that honeycombed the copper-rich mountain beneath it.

In 1955, with the quality of ore diminishing, Anaconda Copper Mining, its owner, ripped the lid off the mountain, gobbled up parts of the city and created the mile-wide 2,200-foot-deep Berkeley Pit.

For more than a century, the Richest Hill on Earth was an open wound, pouring toxic metals and other waste into the environment. As late as the 60's, the Clark Fork ran red with mine waste. Anaconda sold its operations to ARCO, the oil giant, in 1978. Not long after, with the diggings unprofitable, ARCO, now part of BP, closed its Montana mines and was facing nearly \$1 billion worth of cleanup, one of the nation's largest and most expensive Superfund sites.

Much of the cleanup, under way since 1981, is in the final stages. It includes a golf course designed by Jack Nicklaus atop refinery waste.

The most difficult and expensive parts of the cleanup involve water. Since 1983, when ARCO shut the pumps that kept groundwater from flooding the Berkeley Pit, it has been filling with a reddish-brown water so acidic that hundreds of birds have died after landing on it. To keep toxic groundwater from reaching the Clark Fork and Butte's groundwater, ARCO is building a \$15 million plant to treat the pit water in perpetuity. (Birds are scared away with a sound system that makes ear-splitting predator sounds.)

Silver Bow Creek, the headwaters of the Clark Fork and next to the pit, was buried under millions of cubic yards of mine tailings. The state has been reclaiming the creek mile by mile, trucking away the tailings, diverting the water and laying down a new stream bed. The creek, experts say, is coming back.

There are not any Superfund projects quite like the Clark Fork, and it poses some formidable technical problems. In 1908, a towering brown wall of water, carrying homes, trees and other debris scattered mine waste 300 to 500 feet along the sides of the river for more than 100 miles downstream. The deposits, called slickens, are up to six feet deep. In many places, the copper levels are so high that the deposits have turned the bank, the flood plain and the bones of cattle that died there bright green.

Although the river has improved, it cannot fully heal itself. Without the willows and other vegetation, riverbanks are mushy and unstable. Floods bring dry sediments back to the stream, raising copper levels. Fish die after thunderstorms that wash toxins into the river.

Trout have returned to the upper reaches of the Clark Fork near Deer Lodge, but with just 250 or 300 brown trout per mile, compared with 1,500 elsewhere.

Irrigation with contaminated water has spread the waste onto farm fields. This is the only place where the metals are thought to pose a threat to human health.

E.P.A.'s draft plan, released last year, called for removing slickens, adding new soil and planting willows along 43 miles of the upper stretch.

The final E.P.A. plan is subject to intense negotiations. ARCO says it made a costly mistake when it bought Anaconda, and the company has fought to limit its liability, advocating on-site treatment of deposits rather than removal.

Others are wary of a big long-term cleanup, as well. Many in and near Deer Lodge, a farming and ranching town of 5,000, oppose the large-scale soil removal, as the draft proposed. A Powell County commissioner, Gail Jones, said she hoped that the removal would involve far less than the draft recommended and that the tailings would be treated where they were.

Other people say that the waste removal does not go far enough and that the river will repollute itself as it migrates across the valley bottom.

Farther downstream at Milltown Dam, the last stop for the toxic stew, six miles east of here, residents are divided over a different aspect of river recovery plans. Many Missoulians say the dam is structurally unsound and a toxic time bomb, a concern brought home in February 1996 when a 10-mile-long 14-foot-thick ice jam headed down river, raising fears of losing the dam and unleashing the waste. Instead, the dam owner, Montana Power, hastily cut stanchions with a cutting torch to open panels and allow water through, drawing the water in the reservoir to extremely low levels. Three-quarters of a mile above the dam, the ice halted. But releasing such a huge quantity of water churned up four feet of sludge that contained arsenic, cadmium, lead and zinc.

A result, Missoula County officials said, was an extensive fish kill. The state limit for copper is 18 parts per billion, and tests showed that the pulse reached levels of nearly 800 parts per billion.

The next spring, biologists counted the number of catchable rainbow trout and found their numbers had decreased nearly two-thirds, with young rainbow and brown trout down 86 percent. A vice president of ARCO, Sandy Stash, was skeptical about "the alleged fish kill," because no dead fish were seen. The fish, county officials said, washed away.

When it comes to the dam, Ms. Stash said, it is best to leave it alone. "We are very concerned about the risks associated with a dredging project that size," she said.

Removing half the sediment — the rest is too expensive to remove — would take 12 years with a suction dredge and other heavy equipment and run the risk of loosening contaminated sediments. "The best solution for the environment," Ms. Stash said, "is for the dam to stay in place."

But ARCO's efforts may be useless. In January, Gov. Judy Martz said she favored removing the dam, which NorthWest Energy took over when it bought Montana Power. The next day, the director of the regional E.P.A. office in Helena, John Wardell, said the final plan would include removing the dam, at an estimated cost of \$90 million.

Many are already looking forward to Montana's refurbished river. "Once the dam is gone," said Chris Hunter, head of the fisheries division of the State Department of Fish, Wildlife and Parks, "trout that haven't been able to spawn for 100 years will move up the Clark Fork and into the tributaries again."