NPL Site Narrative for Eureka Mills

EUREKA MILLS
Eureka, Utah

Conditions at Proposal (June 14, 2001): The Eureka Mills site is approximately 135 acres of lead- and arsenic-contaminated soil located in the Town of Eureka, approximately 60 miles south of Salt Lake City and 12 miles west of Utah Lake. Eureka is one of several towns in the Tintic Mining District, which was organized in the spring of 1870. Richer ores from the district were shipped to larger smelters both in the United States and abroad. It was not economical to ship the lower grade ores, so milling and smelting operations began to be developed near the mines. A total of 14 mills may have been operated in the Tintic District. These mills concentrated ores and made them more profitable for shipping. Early mills in Eureka used the mercury amalgamation process, in which ore was crushed into a pulp, run over vanners, and collected as amalgam in tanks and pans. A number of smelters have also operated in the Tintic District over the years. However, none were very successful nor operated for any substantial length of time.

The Utah Department of Environmental Quality (UDEQ), in conjunction with the U.S. Environmental Protection Agency (EPA) collected 22 soil and 9 sediment samples from the Eureka area in 2000. Soil samples were collected from residential areas, from the Tintic High School and Eureka Elementary Schools, and adjacent to mill sites. Sediment samples were collected along Eureka Gulch and in the gulch below four of the possible mill sites in Eureka. These samples were analyzed for total metals and indicated the presence of arsenic and lead concentrations as great as 1,030 milligrams per kilogram (mg/kg) and 29,300 mg/kg, respectively.

The discovery of these concentrations prompted EPA to begin a Removal Evaluation in August 2000. It included the collection of 4,211 surface soil samples from approximately 837 "zones" in Eureka. All samples were analyzed using X-ray fluorescence (XRF). Of these 4,211 samples, 10 percent were sent to a laboratory for confirmational analysis. Of these confirmation samples, 225 were discrete depth samples taken from between 0 and 24 inches below ground surface. When compared to site background levels, the results of the laboratory confirmation samples were utilized to delineate an area of more than 5 million square feet of surficial arsenic- and lead-contaminated soil.

The methods of migration from the contamination are various. Historical flooding has occurred, which may have transported mine and mill wastes down gradient toward and through the town. Human actions have also probably served to spread contamination around the Town of Eureka. In 1900, tailings ponds broke and flooded Eureka Gulch. Wastes from one milling process were allowed to flow downhill and into Eureka Gulch. The use of tailings as fill material around the town appears to have been widespread. Horse teams and wagons hauled most of the district's ore in its early days. It is likely that some primary ore carried in this manner was inadvertently lost during transportation. Aerial deposition from blowing dust, and to a lesser extent from smelting, is also a potential mode of contaminant transportation.

An evaluation of the confirmation data from within the area of observed soil contamination indicates there are approximately 150 residences that are subject to actual contamination, both above and below health based benchmarks.

Status (September 2002): EPA is considering various alternatives for this site.

For more information about the hazardous substances identified in this narrative summary, including general information regarding the effects of exposure to these substances on human health, please see the Agency for Toxic Substances and Disease Registry (ATSDR) ToxFAQs. ATSDR ToxFAQs can be found on the Internet at ATSDR - ToxFAQs (http://www.atsdr.cdc.gov/toxfaqs/index.asp) or by telephone at 1-888-42-ATSDR or 1-888-422-8737.