



## Captain Jack Mill

Ward, Boulder County, Colo.

### Site Description

The Captain Jack Mill site is located at the headwaters of upper Left Hand Creek about 1.5 miles south of Ward in Boulder County, Colo. The site is in a narrow valley known as California Gulch. Mining for gold and silver in the region began in 1860 and ended in 1992. EPA added the site to the National Priority List in 2003 due to contamination resulting from past mining and milling activities. Mine waste and soils contained elevated concentrations of heavy metals, including arsenic, lead and zinc. Left Hand Creek has also been contaminated by heavy metals. Sources of metals contamination include acid mine drainage from the Big Five Tunnel, groundwater contamination associated with the flooded underground mine workings, and metals-contaminated particulates eroded from mine waste rock piles and tailings impoundments. Elevated levels of metals have been found in surface water and sediment samples from Left Hand Creek and from low lying areas along the creek. Uncovered tailings, ore concentrates and surface soil contaminants posed a threat of dust emissions, especially to the nearby residences. Left Hand Creek is one of the sources used by Left Hand Water District to supply drinking water to approximately 15,000 water users. In addition to human exposures, the elevated metal concentrations in sediments and water entering Left Hand Creek affect aquatic life.

### Current Site Status and Cleanup Actions to Date

- EPA divided the site into two cleanup phases addressing: 1.) surface contamination and 2.) sub-surface contamination.
- Developed in 2008, the site record of decision specifies the construction of mine waste repositories to address the surface contamination and an in-tunnel treatment system to address the draining mine pool (sub-surface contamination). A third phase including an external treatment system may be implemented if additional water treatment is necessary.
- The waste repositories were constructed in Fiscal Year 2012. The vegetated repository caps were evaluated throughout the growing season of 2013 and were determined to be operational and functional in November of 2013. The repositories were undamaged during the historic flooding event in September 2013 with only minimal erosion of the dirt access road and minor accumulation of sediment in sections of the runoff control ditch.
- Once the subsurface remedy is funded and completed and institutional controls are in place, all unacceptable human exposure pathways will be eliminated for the entire site.

### Unfunded Action

Fiscal Year 2013 work that was not funded involved the construction of the subsurface remedy, which will address acid mine drainage from the Big Five Tunnel. The remedy involves plugging the mine tunnel and installing an in-tunnel treatment system.

### Current Funding Status

To date, the EPA has spent approximately \$6 million on response activities at the site.

*For more information on this site, please read [the Captain Jack Mill site information](#) on the Region 8 Superfund web site.*