

March 2009 Update

**Summitville Mine Superfund Site**  
Rio Grande County, Colorado

## *H*ighlights since the 2005 Five-Year Review

- **Wightman Fork Diversion and the SDI spillway upgrade construction project is slated for 2009 completion at a cost of \$2.5 Million.**
- **Hydro-electric plant for supplemental site-power slated for 2009 completion**
- **New water treatment plant design and construction plans underway as final remedial action for the site.**

**Brief Site History:** The Summitville Mine Site is located in the San Juan Mountains of south central Colorado, about 40 miles west of Alamosa, Colorado. Mining in the Summitville District has occurred since the 1870's, when gold was discovered on South Mountain. Shortly thereafter, shafts and adits were constructed to access gold-bearing veins. The Reynolds Adit, the lowermost adit in South Mountain, was completed about 1906 to haul ore and drain upper mine workings. Mining and ore processing operations occurred intermittently in the Summitville Mining District through 1992.

During the most recent mining operations (1984 through 1992), the South Mountain mineral reserves were developed as a large tonnage, open-pit operation. Gold and silver were extracted from the ore in a large, on-site heap leach pad. Acid mine drainage and cyanide releases from the open-pit mine and heap leach pad operation adversely impacted downstream water users and aquatic life in the Alamosa River and San Luis Valley. The mine operator declared bankruptcy in December 1992 and the EPA assumed control of the site as part of an Emergency Response Removal Action. The site was added to the Superfund National Priorities List on May 31, 1994.

**Cleanup Activities Completed:** The following cleanup activities have been completed: Backfilling mine waste into the existing open pits, thus reducing water percolating into the ground; Rinsing the heap leach pad to reduce the levels of cyanide; Regrading and capping the heap leach pad to reduce the infiltration of snow melt and precipitation; Plugging two mine adits to significantly reduce drainage from the mine workings; Constructing a 90 million gallon wastewater holding pond for eventual treatment to remove metals and acidity; Revegetation of 250 acres of mining-disturbed land; Retrofitting the "old" water treatment plant to successfully treat 1.4 million gallons of water per day.

**Current Status:** The site-wide Record of Decision (ROD) was signed September 2001. This ROD defined the final actions required to stabilize the site in

perpetuity, which included: rehabilitation of the adits, groundwater and contaminant source collection, pipelines and an impact basin and a sedimentation pond at the base of South Mountain. An extensive system of intercept and routing ditches and pipelines for Acid Rock Drainage (ARD) collection and flow-management has been completed. Improvements to the Wightman Fork Diversion and Summitville Dam Impoundment (SDI) spillway channel is scheduled for 2008. A new water treatment plant is scheduled for construction in 2009-11. An added component to the Wightman Fork diversion project includes a hydro-electric generating plant which will provide 30 – 50% of site power needs. Upgrade of the Wightman Fork Diversion and the SDI spillway channel were completed in 2007; the \$2.5 Million upgrade construction project, including the hydro-electric plant is slated for completion in 2009.

**Summary of Protectiveness:** Because of the site's remoteness and permanent on-site environmental controls, there are no remaining human health impacts. The remaining environment impacts include metals releases into the tributary drainage and the Alamosa River. Metals concentrations have decreased significantly and pH values have increased in the Alamosa River downstream of its confluence with the Wightman Fork as a result of the interim response and the final remedial actions taken to date. However, the Summitville Mine Site remains as a significant contributor of copper, zinc and cadmium into the Wightman Fork tributary and Alamosa River Watershed. Though significant strides have been made in approaching the aquatic water quality goals in the Alamosa River, periodic off-site releases continue to occur due to limited water-treatment storage and capacity at the site. Aquatic life is returning in the lower parts of the watershed, the Terrace Reservoir. In order to maintain adequate ARD collection and storage capacity, a replacement water treatment plant with higher treatment capacity is needed. Careful management of treatment-rates and available ARD-impoundment capacity are critical components in managing the site. At this time, more contaminated water is generated at the Summitville Mine Superfund Site than can be stored or treated in average or above precipitation years. Currently, untreated water may be released from the site causing significant impacts to downstream aquatic life. Therefore, installing a new water treatment plant (as called for in the ROD) is necessary to achieve construction completion and attain the water quality standards and aquatic life goals in the Alamosa River.

**Issues Impacting Protectiveness:** Issues were noted during the five-year review of the site in September 2005. The following table summarizes the status of the follow-up actions addressing these issues.

**Summitville Mine Superfund Site  
Five-Year Review Update Table  
(Review Date: 9/27/2005)**

Issues	Recommendations/ Follow-up Actions	Follow-up Actions (Status/Due Date)	Status of Follow-up Actions 12/08	Responsible Party
1) Implement the remaining OU 5 remedial components as soon as funding permits.	Construction of a large capacity water treatment plant, continue to evaluate the SDI capacity	On hold until funding is made available	Conducting a value engineering screen Feb. 2009 for Final RD completion in 2009 Priority Panel for Remedial Action 2009-11.	EPA and Colorado Department of Public Health and Environment (CDPHE) for construction.
2) Investigate remedy options for controlling non-point source discharges.	Continue to monitor performance	Diversions completed 2005.		CDPHE
3) Revise the site hydraulic model and water balance.	Conduct for Wightman Fork Diversion and SDI spillway channel		Initiated in 2006, completed in 2007	CDPHE
4) Reynolds Adit rehab or long-term stabilization.	Conduct annual safety inspections and a detailed inspection prior to 2010 5yr review		Closure plans being finalized; stabilization of pipelines slated as part of 2009-11 site O&M.	
5) Explore permanent, passive or semi-passive remedies to control contaminant sources.			Viewed as technically impracticable given current state of mine pool mitigation technology.	EPA and CDPHE
6) Monitor all on-site and off-site remedial elements and affected media.	Ongoing	Annual reports	Ongoing	CDPHE

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7) Status of groundwater system and seep releases.	Conduct on-site groundwater seep sampling.	Prior to 2010 5-year review.	Ongoing	CDPHE
8) Status of water-quality, sediment and aquatic life sampling.	Conduct off-site sediment and aquatic life sampling in the Alamosa River	Prior to 2010 5-year review.	Ongoing	CDPHE
9) Restocking of fish in Terrace Reservoir.	Requires concurrence with the Division of Wildlife	Planned for 2008	Completed.	CDPHE
10) Prepare a Use Attainability Analysis (UAA) for the Water Quality Control Commission (WQCC) to change the Alamosa River underlying Al. std.	Prepare UAA	Completed in 2007	Water Quality Control Commission revised aluminum water quality standards for Alamosa River Segment 3b-d in 2008	CDPHE