



Colorado Department
of Public Health
and Environment

UPDATE FACT SHEET

EAGLE MINE SUPERFUND SITE

February 2009



Treatment Plant Releases Contaminated Water

Background and Timeline

At 5:45 a.m. on Jan. 22, 2009, a state highway maintenance employee observed water running across State Rt. 24 approximately one mile south of Minturn. The water came from the lower surge pond, a holding pond associated with the Eagle Mine Water Treatment Plant, operated by Frank Environmental Services Inc. (FES) on behalf of CBS. The water, initially flowing at approximately 145 gallons per minute (gpm), overtopped the berm of the lower surge pond and flowed across the pond liner. Some of this water probably seeped into the storm water channel and native soil as it flowed toward the Eagle River.

The bypass occurred when too much water was allowed to run into the upper surge pond and drain to the lower surge pond, which did not have sufficient freeboard (the space between the water level and the pond's edge) to contain it. The amount of freeboard in the lower surge pond was difficult to judge because of accumulated snow and ice in and around the pond. This condition contributed to an operator error, in that too much water was allowed to drain into the two-pond system.

The water treatment plant was not running at the time because one of the sludge pumps was being rebuilt. Normally the plant would continue to operate during such maintenance activities. However, the FES employee rebuilding the pump was on sick leave for two days, and the plant had to shut down because of a full sludge tank. Another employee who was managing the

flow into the upper pond at the time of the overflow has resigned from Frank Environmental Services Inc.

Procedures involving the Eagle Mine Superfund Site, including the water treatment plant, are spelled out in a consent decree between the Colorado Department of Public Health and Environment and CBS, the party responsible for the site. In the event of a spill, CBS or its agents must immediately notify the health department's project manager, Wendy Naugle. Mike Holmes of the Environmental Protection Agency should also be notified. Next, the regulators would notify Ray Merry at the Eagle County Environmental Health Department and would jointly determine who else should be notified, depending upon the type of incident and its potential impacts. The Colorado Division of Wildlife, the Ginn Company, the Eagle River Water and Sani-

Water Treatment Plant Facts

Lime and soda ash are added to contaminated water to raise its alkalinity (pH). A chemical is added to promote settling of metals. Sludge is dried in presses and is disposed of in a lined area on-site. Added acid reduces the treated water's pH to allowable discharge limits.

Gallons treated per minute.....350
Gallons treated per year140 million
Pounds of zinc removed per day.....175

tation District and the Eagle River Watershed Council all are on the core list of groups to be notified. CBS also is required to notify the Colorado Department of Public Health and Environment's Emergency Line within 24 hours. The Emergency Line program also maintains a call-down list, and the downstream users should be notified during this process as well. If the magnitude of the release is especially severe, the project team would ask the EPA's Emergency Response Program to mobilize a response team at the site. The EPA Emergency Response team is available 24 hours a day and would coordinate with local hazmat responders.

The proper procedure was not followed in this case, and the Eagle River Water and Sanitation District was informed of the incident before the state. The utility closed its intake valves as a precaution, and public health was not at risk.

At the request of Wendy Naugle, Colorado Department of Public Health and Environment project manager for the Eagle Mine Superfund Site, FES sampled water from near the overflow location in the lower surge pond at 6 p.m. on Jan. 22 and sent it to an offsite laboratory for analysis. At 7 p.m., FES left a voice message reporting the bypass to the state health department's Emergency Line. Greg Stasinis, the health department's tactical communications coordinator, returned the call on the morning of Jan. 23, and logged Spill Report #2009-0033.

Potential Impacts

Contaminants at the Eagle Mine (primarily zinc, an essential human nutrient) pose minimal human health risks. Fortunately, spill incidents are infrequent, and there has not been a report-

**Figure 1
Current Permit Limits Compared to
Spill Concentrations**

EFFLUENT PARAMETER	UNITS	CURRENT PERMIT 30 DAY AVERAGE	DAILY MAX	6 HR SPILL H₂O VALUES 22 DEC 2009
TSS	mg/l	20	30	<5
pH	s.u. (min.- max.)	N/A	6.5-9	5.7
Cadmium, Total	µg/l	50	100	116.32
Copper, PD	µg/l	12	67	477.9
Iron, Dissolved	µg/l	300	Report*	1773
Iron, TR	µg/l	Report*	Report*	2141
Lead, Total	µg/l	300	600	7.68
Manganese, Dissolved	µg/l	6190	Report*	32431.8
Zinc, Total	µg/l	750	1500	43829.5

*Concentration levels must be reported to the Colorado Department of Public Health and Environment, but there are no maximum limits and no action is required.

able incident since October 2003, when electrical power to the treatment plant was interrupted.

The Colorado Department of Public Health and Environment estimates the worst-case in-stream zinc concentration resulting from the overflow was between 590 µg/l and 675 µg/l. Because this concentration is similar to zinc concentrations that occur during the March and April snowmelt, negative impacts on brown trout are unlikely.

Next Steps

To reduce the likelihood of an overflow from either pond in the future, FES will take the following steps:

1. Pressure transducers in both ponds will be set to sound an audible alarm when less than two feet of freeboard is reached. During unattended operation the freeboard alarm will trigger an after-hours call out through the water treatment plant's computer auto dialer system.
2. An emergency discharge chute will be built into the west side of the lower pond to drain into the lined sludge cell. If the lower pond overflows, the contaminated water would drain into the solid waste sludge cell, where it could be recovered and treated as is now done with snowmelt and rain water.
3. During unmanned operation, if the freeboard in the lower pond is less than two feet and the upper pond is flowing into the lower pond, the mine draw down (MDD) valve at Rock Creek will be shut off or, during winter months, flow will be reduced to 17 gpm, the minimum required to keep the pipe from freezing.

The Colorado Department of Public Health and Environment, Environmental Protection Agency, CBS and the Eagle County Environmental Health Department have agreed to review procedures to prevent future spills and to ensure timely notification of the appropriate stakeholders in the event of a spill.

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www.epa.gov/region8/sf/co/eagle/#6
www.cdphe.state.co.us/hm/rpeagle.htm

View Documents at:

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