



June 18, 2012

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**Re: Results of Mill Level Dewatering, Belden and Rock Creek Pump Test
Eagle Mine Site**

Dear Wendy and Mike:

This letter documents the results of dewatering the Mill Level on March 11 and 12, 2012 and pump tests conducted on April 4, 2012 using wells in Rock Creek and Belden. This information will be used in conjunction with available snowpack and precipitation data to update the description of *Alternative 2A: Groundwater Collection and Treatment, Belden and Rock Creek* in the Focused Feasibility Study. The test procedures were provided to EPA and CDPHE in a proposal dated January 18, 2012 prepared by NewFields on behalf of CBS Operations Inc.

Mill Level Dewatering

The Focused Feasibility Study contains recent sample results and water level monitoring, which indicate that water ponds in the underground mill and zinc drier area (Mill Level) at about mine floor elevation 8397 ft MSL or about 40 feet topographically above the Eagle River. It is thought that mine water with elevated zinc ponds in the old underground mill and migrates to the river when the pool overtops. During mine operations, accumulated water in the Mill Level was pumped at a concrete sump (Figure 1) at a low area near the zinc drier.

During the March 2012 dewatering event, a 10 gpm portable electric sump pump installed in the concrete sump was used to dewater the Mill Level from 9 inches above the reference elevation down to the floor level (Figure 2).

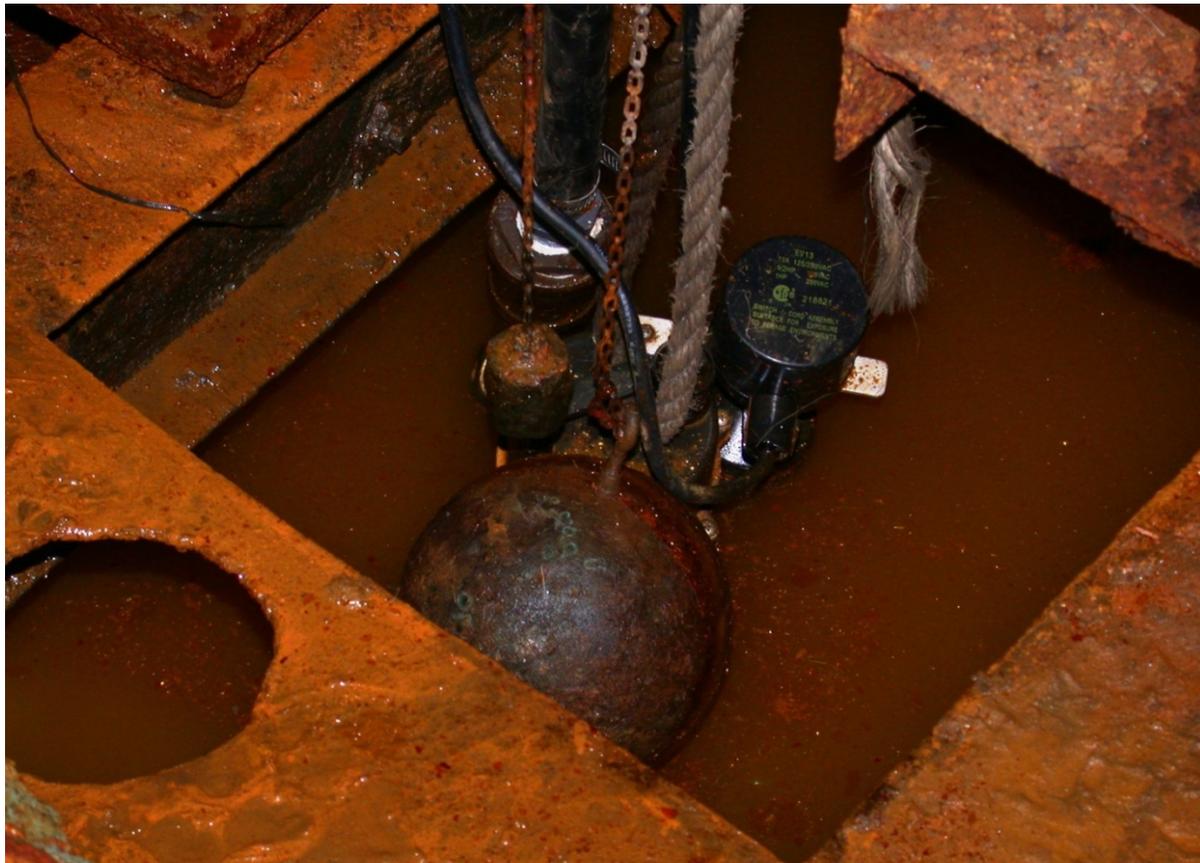


Figure 1 Sump and sump pump

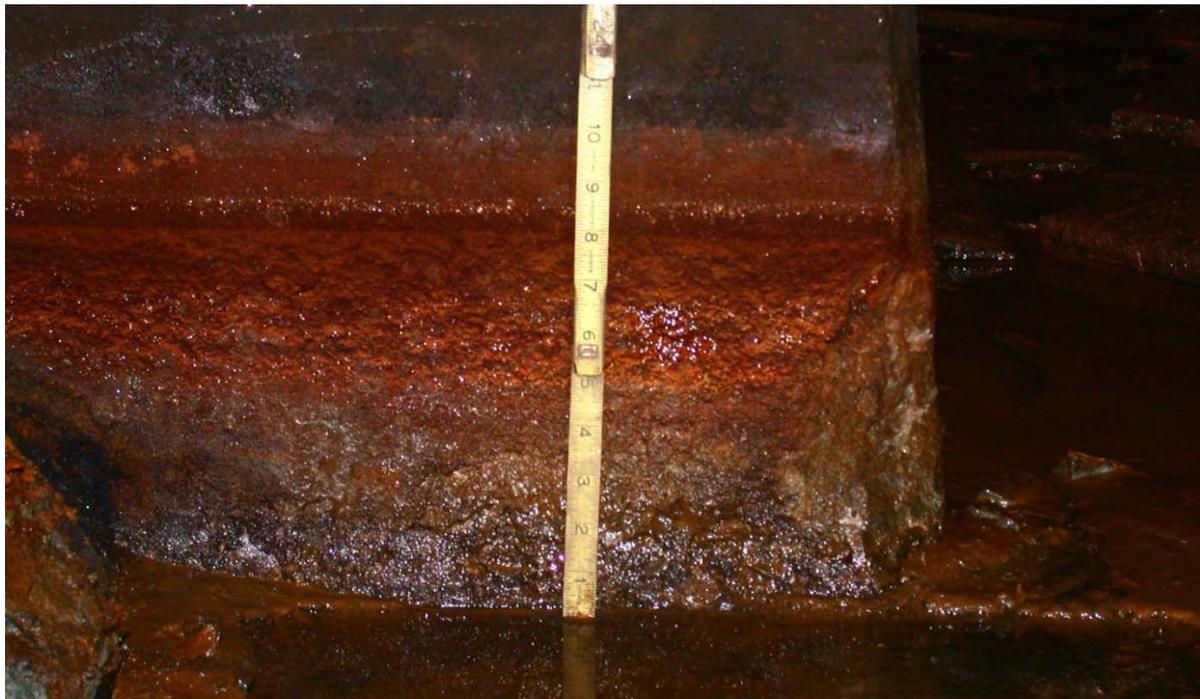


Figure 2 Pumped out level (0 inches) and high water line (10 inches) in the Mill Level

Temporary electricity was supplied via a 400-foot-long power line energized by a 3200 watt generator installed in the ventilated and lockable Oil House in Belden. Over a 24-hour-period beginning at 10:20 am on March 11, 2012, 24,000 gallons of mine water were pumped out of the Mill Level via a new 1-inch diameter poly pipe to an existing 3-inch diameter pipe to the Dock manhole on the main pipeline in Belden. From this manhole the water flowed by gravity to the WTP.

Mill 1 and Mill 2 grab samples of the pumped discharge were collected at the beginning and end of the pump test, respectively, and tested for cadmium, copper, and zinc.

Sample	Date and Time	Total Metals, mg/L		
		Cadmium	Copper	Zinc
MILL-1	3/11/12 11:00	0.532	0.671	585
MILL-2	3/12/12 09:00	0.551	0.987	562

NewFields conducts monthly underground surveys to determine how fast and where the Mill Level pool is being recharged. After dewatering, the pool has been filling slowly. Only seepage from rock fractures in the tunnels has been observed in the spring of 2012, a drought year. No specific zones of recharge have been identified. Freezing temperatures were present in March and April in portions of the Mill Level and melting of ice in fractures is expected to continue throughout the summer. The pool rose 0.5 feet in 60 days between March 12 and May 11, 2012. The measured increase in pool level represents approximately 16,000 gallons for an estimated recharge rate of 266 gpd. Transducers will be installed at the old Mill Level sump to record the air temperature, water temperature, and the rate of water level rise during the rest of the year. The Mill Level may be pumped down again this fall if the pool is expected to overtop the high water level of 10 inches.

Mill Level Summary

When the pool in the Mill Level is above the high water level it is a possible source of zinc and other metals to the river. During the spring of 2012, the Mill Level was a minor source that was easily controlled by pumping.

Pump Tests

The anticipated spring inflow of groundwater to the Copper Tipple Collection Trench in Belden occurred on March 3-6, 2012 causing the water level in the collection trench (BTS-1) to rise from 8363 (dry) to 8370 ft MSL (Figure 3). Subsequently, the Mill Level was dewatered on March 12, 2012. On April 4, Rock Creek well EDS-3 and Belden wells BW-10, BW-9R, and BTS-1 were pumped continuously using 10 gpm submersible pumps. Collected water was discharged directly to the main pipeline for treatment at the WTP.

EDS-3

A new SymCom pump controller with run-dry protection was installed, and Rock Creek groundwater was pumped continuously for 8 hours on April 4, 2012 at 10 gpm using the dedicated submersible pump in well EDS-3. Collected water was discharged to the main

pipeline via a 1-inch diameter hose to the nearby Rock Creek manhole. A sample of the pumped discharge was collected after 5 hours of run time.

Conductance, uncorrected μ mhos/cm	Temperature deg C	Total Metals, mg/L		
		Cadmium	Copper	Zinc
1,200	9	0.168	0.012	48

The water level in EDS-3 during the test is unknown because the pump and riser pipe prevented access downhole. After the test the pump was pulled and the water level measured 16.34 ft or - 8,283.74 ft AMSL. The zinc load captured during a long-term pump test of EDS-3 was calculated using the following equation:

$$10 \text{ gpm}/448 \text{ gpm/cfs} \times 5.4 \text{ (units conversion)} \times 48 \text{ mg/L} = 5.8 \text{ lbs/day}$$

BW-10

The well BW-10 produced water continuously for almost 4 hours (14:15 to 18:08) on April 4, 2012. The yield decreased from 10 gpm to 3.9 gpm during this time period. Collected water was discharged to the main pipeline via a 1-inch diameter hose to a nearby inspection port. A sample of the pumped discharge was collected after 1.5 hours of run time.

Conductance, uncorrected μ mhos/cm	Temperature deg C	Total Metals, mg/L		
		Cadmium	Copper	Zinc
3,100	7	37.8	16.1	714

The water level in BW-10 dropped about 5 feet during the pump test, as shown in Figure 3 below. The zinc load captured during a projected long-term pump test of BW-10 was calculated using the following equation:

$$3.7 \text{ gpm}/448 \text{ gpm/cfs} \times 5.4 \text{ (units conversion)} \times 714 \text{ mg/L} = 31.8 \text{ lbs/day}$$

BW-9R

Well BW-9R produced water continuously for almost 4.5 hours (14:00 to 18:28) on April 4, 2012. The yield decreased from 10 gpm to 3.1 gpm during this time period. Collected water was discharged to the main pipeline via a 1-inch diameter hose to an inspection port near BW-10. A sample of the pumped discharge was collected after 1.5 hours of run time.

Conductance, uncorrected μ mhos/cm	Temperature deg C	Total Metals, mg/L		
		Cadmium	Copper	Zinc
1,950	11	0.291	0.064	137

The water level in BW-9R dropped about 4 feet during the pump test as shown in Figure 3 below. The zinc load captured by evacuation of the collection system was small and not estimated.

The zinc load captured during a long-term pump test was calculated using the following equation:

$$3.1 \text{ gpm}/448 \text{ gpm}/\text{cfs} \times 5.4 \text{ (units conversion)} \times 137 \text{ mg/L} = 5.1 \text{ lbs/day}$$

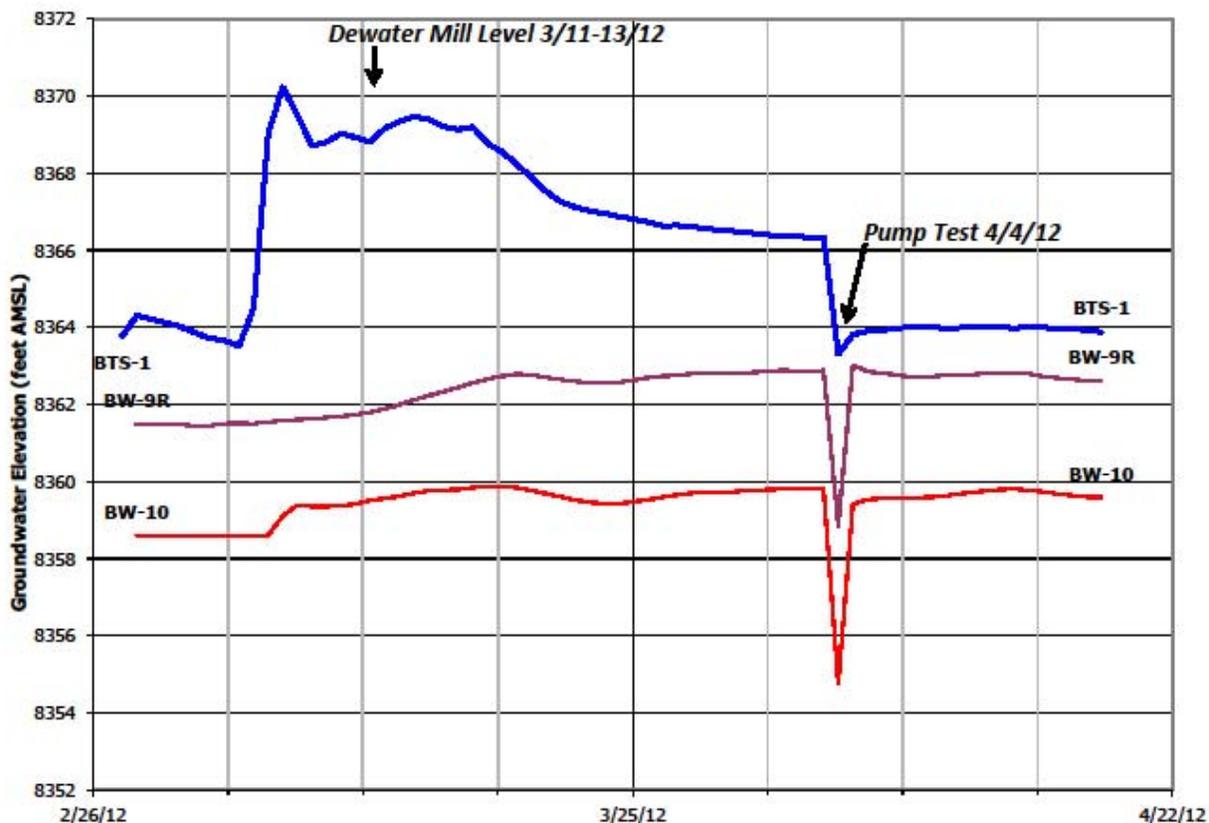


Figure 3 Belden Groundwater Levels

BTS-1 (Copper Tipple Collection Trench)

Well BTS-1 in the Copper Tipple Collection Trench was pumped with a 10 gpm submersible pump just over one hour (14:05 to 15:25) on April 4, 2012. The trench was pumped dry during this time period. Collected water was discharged to the main pipeline via a 1-inch diameter hose to an inspection port near BW-10. Analytical results for a water sample collected after the pump test (17:48) are listed below.

Conductance, uncorrected µmhos/cm	Temperature deg C	Total Metals, mg/L		
		Cadmium	Copper	Zinc
3,500	6.5	1.35	29.1	381

The water level in BTS-1 began falling shortly after the recharge event in early March and dropped about 3 feet as a result of the pump test (Figure 3). The water level in the trench did not recover, indicating that the spring recharge event was a seasonal, short-term source of groundwater. The zinc load captured by evacuation of the collection system was small and not estimated.

Pump Test Summary

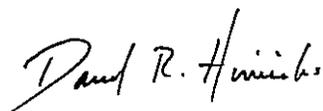
Year 2012 is a drought year and the snowmelt period was brief. As a result, the well yields were very low and a long-term test could not be sustained with the 10 gpm pump. After 4 hours of pumping it was estimated that combined yield from two wells in Belden and EDS-3 in Rock Creek represented about 43 lbs/day recovered zinc.

In an earlier pump test in April 2010 a combined pumping rate of between 12 and 18 gpm was achieved for the wells in Belden in a 24-hour test. The pumped Belden well water contained an average zinc concentration of about 300 mg/L. At this concentration, 12 to 18 gpm equates to a zinc load recovery of 43 to 65 lbs/day. To this total, pumping in Rock Creek would increase the recovery by an additional 5 lbs/day zinc.

The two pump tests suggest that the initial yield of the current collection system in Belden and Rock Creek is on the order of 40 to 70 lbs/day recovered zinc, depending on the snowpack and snowmelt. A long-term test was not achieved in 2012; however, the indications are that the groundwater source can be exhausted over a short time, significantly reducing the yield.

If you have questions, please feel free to call.

Very truly yours,
NewFields



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Project Manager

cc: Jeff Groy, CBS Operations, Inc.
Russ Cepko, CBS Operations, Inc.