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WATER QUALITY MEMORANDUM
Utah Coal Regulatory Program

February 29, 2012

TO: Internal File

FROM: April A. Abate, Environmental Scientist III/Hydrogeologist AAA 2-29-2012

THRU: Steve Christensen, Permit Supervisor SJC

SUBJECT: 2011 3rd Quarter Water Monitoring, Bear Canyon Mine, C/015/0025, Task ID #3900

The monitoring plan is described on pages 7-48 through 7-60A of the MRP. It includes Tables 7-12 through 7-17. The mine is now operating under a permit held by Castle Valley Mining, LLC.

1. Were data submitted for all of the MRP required sites?

In-mine YES ☒ NO ☐

A total of two in-mine samples are listed in the Bear Canyon water monitoring plan: SBC-9A and SCC-3. The Mohrland Portal, sample SCC-3 is sampled for field parameters only in May, August and October of each year. The Hiawatha Seam sample, SBC-9A is sampled for operational parameters in February, May, August, and October (quarterly). SCC-3 - Mohrland Portal sample was sampled for field parameters in September 28, 2011. In-mine sample SBC-9A was sampled on September 29, 2011 for operational parameters.

Springs YES ☒ NO ☐

Most of the spring samples in and around the Bear Canyon mine are sampled for field, or either operational or expanded list parameter once every five years prior to permit renewal. Active springs requiring operational parameter sampling during the months of February, May, August, and October include: SBC-4 Big Bear Springs, SBC-5-Birch Spring, SBC-17 (16-7-24-4). SBC-14 requires operational monitoring in May, August and October only. Currently active springs requiring field parameter only measurements during the months of May, August and October include: SBC-15, SBC-16, SBC-16A, SBC-16B.

During the 3rd quarter, the required springs SBC-4, SBC-5, SBC-14, and SBC-17 were

monitored during the month of September for the required operational parameters. SBC-15 was monitored for field parameters. Spring samples SBC-16, 16A and 16B reported no flow this quarter.

Streams YES ☒ NO ☐

Active stream samples required for quarterly operational monitoring include: BC-1, BC-2, BC-3, BC-4, CK-1, CK-2. CK-1 and CK-2 are the upstream and downstream locations for Cedar Creek located just outside the northeast portion of the permit boundary.

Stream location FC-1 is sampled for field parameters only during the months of May, August and October. All stream locations reported flow with the exceptions of BC-4 and FC-1.

UPDES YES ☒ NO ☐

Five stations are monitored for the Bear Canyon UPDES permit on a monthly basis: Sediment Pond A (Outfall ID 002), Sediment Pond B (Outfall 003), Mine Water Overflow discharge to Bear Creek (Outfall 004), Sediment Pond C (Outfall 005), Sediment Pond D (Outfall 007). None of these stations reported any monthly flow data from the five stations during the 3rd quarter of 2011 with the exception was discharge point UTG040006-004 - Mine Water to Bear Canyon Creek, which reported monthly discharges during the 3rd quarter of 2011. Flow from this point averaged this quarter at 28 gallons per minute (gpm) and TDS concentrations averaged 1,375 mg/L. The Bear Canyon UPDES permit requires that if one outfall cannot meet the 30-day average of 500 mg/L at a discharge point then the sum of all permitted outfalls must meet 2,000 lbs per day limit. The Permittee is meeting their required TDS permit loading limits of under 2,000 lbs/day during the 3rd quarter.

Wells YES ☒ NO ☐

Three wells are monitored at the mine. SBC-3 (Creek Well) is monitored for operational parameters on a quarterly basis. MW-114 and MW-117 are gauged for depth to water level only during the 3rd and 4th quarters. SB-3 was monitored as required for operational parameters during this quarter.

2. Were all required parameters reported for each site?

In-mine YES ☒ NO ☐

Springs YES ☒ NO ☐

Streams YES ☒ NO ☐

UPDES YES ☒ NO ☐

3. Were any irregularities found in the data?

In-mine YES ☒ NO ☐

Temperature was reported below normal at 8.5 deg C outside of 2.45 standard deviations. Water temperature from the Mohrland portal typically ranges from 11 - 12 C.

Springs YES ☐ NO ☒

Streams YES ☒ NO ☐

All stream samples for total dissolved solids detections during this quarter were well below the state water quality standards of 1,200 mg/L. Total iron appears to be elevated in stream sample BC-1 at a concentration of 1.71 mg/L. However, this location is upstream of all mining activity. The source of the iron from the upstream location is not clear. Dissolved iron from the BC-1 sample was reported as non-detect.

BC-2 had a TDS result of 1,305 mg/L, which was reported as being outside 2.14 standard deviations and a maximum based on TDS results from this monitoring location dating back to the year 2005.

UPDES YES ☐ NO ☒

Mine water from Bear Canyon Creek at Outfall 004 was the only point that discharged this quarter. Mine water has been consistently discharging from this location since May 2009. Temperature was reported at 21.4 Deg C. and conductivity was reported at 2,950 umhos/cm on 9/8/2011. The temperature value was out by 3.41 standard deviations and the conductivity value was outside of 5.28 standard deviations.

Wells YES ☐ NO ☒

4. On what date does the MRP require a five-year resampling of baseline water data.

Baseline parameters are to be taken in August of year 5 prior to each permit renewal. The parameters are referred to as the "Expanded List" in Tables 7-13 and 7-17 of the MRP. The next permit renewal date is November 02, 2015.

5. Based on your review, what further actions, if any, do you recommend?

None at this time.

6. Does the Mine Operator need to submit more information to fulfill this quarter's monitoring requirements? YES ☐ NO ☒

7. Follow-up from last quarter, if necessary.

None.

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