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WATER QUALITY MEMORANDUM Utah Coal Regulatory Program

January 29, 2013

TO: Internal File
FROM: April A. Abate, Environmental Scientist III/Hydrogeologist *AAA 1/29/13*
THRU: Steve Christensen, Permit Supervisor *SCC*
SUBJECT: 2012 3rd Quarter Water Monitoring, Bear Canyon Mine, Castle Valley Mining, LLC, C/015/0025, Task ID #4166

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. The Permittee has recently been approved to reactivate the following water monitoring locations: Fish Creek Stream sample locations FC-2, FC-3, FC-4, FC-6, FC-7, FC- 8 and SMH-5 (a spring-fed stock watering trough). The following springs are due to be reactivated upon approaching within 500 feet of the Mohrland mining area: SBC-18, SBC-20, SBC-21, SBC-22, and SCC-2. These changes will take effect with the 4th quarter 2012 sampling event.

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 this quarter for field parameters. In-mine sample SBC-9A was sampled on for operational parameters. These samples were collected during August 21-22, 2012.

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 parameters 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: SCC-2, SBC-15, SBC-16, SBC-16A, SBC-16B, SBC-18, SBC-20, SBC-21, SBC-22.

During the 3rd quarter, the required springs SBC-4, SBC-5, SBC-14, and SBC-17 were monitored during the month of August for the required operational parameters. Field measurements were collected from SCC-2, SBC-15, SBC-16, SBC-16A, SBC-16B, SBC-18, SBC-20, SBC-21, SBC-22.

Streams

YES NO

Active stream samples required for quarterly operational monitoring include: BC-1, BC-2, BC-3, BC-4, CK-1, CK-2, FC-1, FC-2, FC-3, FC-4, FC-6, FC-7, FC-8 and SMH-5. Bear Creek is the principal drainage that runs through the active mining area. BC-2 is the downstream surface water sample from the mine facilities area. 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 locations FC-1, FC-2, FC-3, FC-4, FC-6, FC-7, FC-8 and SMH-5 are sampled for field parameters only during the months of May, August and October.

During the 3rd quarter, flow was reported at BC-1, BC-2, CK-1, CK-2, FC-2, and FC-4. All other stream sites were no flow. According to Table 7-14 of the MRP, operational monitoring at stream sampling sites is scheduled in February, May, August, and October for BC-1, BC-2, BC-3, BC-4, CK-1, CK-2. Field measurements only are scheduled in May, August, and October for all of the Fish Creek samples (FC-1 through FC-8). All stream sampling activities were conducted from August 21-24, 2012.

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 006), Sediment Pond D (Outfall 007). None of these stations reported any monthly flow data from the five stations during the 3rd quarter of 2012 with the exception was discharge point UTG040006-004 - Mine Water to Bear Canyon Creek, which reported monthly discharges. Flow from this point averaged this quarter at 73 gallons per minute (gpm) and TDS concentrations averaged 1,032 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. SBC-3 was monitored 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

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 concentrations exceeded state surface water quality standards at Lower Cedar Creek sample CK-2 on August 21, 2012 at a concentration of 1.02 mg/L. All other stream locations reported total iron below a concentration of 1.0 mg/L. Based on the past two years of data collected from this location, the average total iron concentration at CK-2 is 0.048 mg/L.

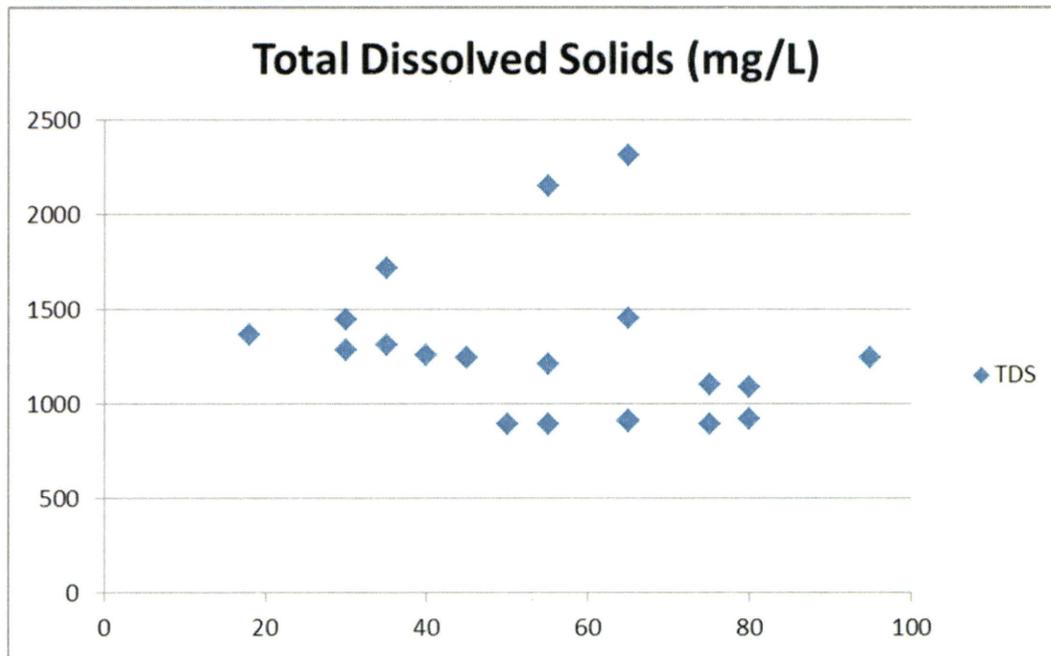
UPDES YES NO

Mine water from Bear Canyon Creek at Outfall 004 was the only point that discharged this quarter. Mine water has been continuously discharging from this location since May 2009.

The scatter plot below represents TDS concentrations plotted against flow in gallons per

day over a period from January 2011 – September 2012. As can be seen in this graph, TDS ranges are typically within the 900-1500 mg/L range. Lower flows do not appear to correlate with higher TDS concentrations.

UPDES OUTFALL 004



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. Expanded List parameters are due for sampling in August 2014.

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

Weekly sampling of the reactivated spring and stream locations began on July 9, 2012. Mining in the Wildhorse Ridge/Mohrland area began in the fall 2012. The MRP requires that the springs above the mine workings in this area be monitored on a weekly basis. The Permittee has recently been approved to reactivate these spring and stream water monitoring locations in accordance with the specified protocol in the MRP.

A schedule via email of when mining is to occur in the Wildhorse Ridge/Mohrland area

was provided to the Division. According to this schedule, mining is scheduled beneath the Fish Creek stream locations FC-3, FC-4, FC-6, FC-7, and FC-8. Mining is scheduled to occur beneath spring locations SBC-20 and SBC-21 up through July 2013. A weekly sampling protocol is in place while mining beneath these locations and one month after mining through the area.

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

The Permittee is sporadically forwarding the weekly monitoring data for the Wildhorse Ridge/Mohrland area to the Division. Currently there is no established schedule commitment in the MRP as to when the data will be delivered to the Division. The Division has asked the Permittee to amend the MRP to provide a commitment to providing the weekly monitoring schedule to the Division preferably on a once-a-month basis.

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

The addition of dissolved oxygen DO to the surface water operational sample list is approved and will begin at the 4th quarter 2012 sampling event.