

WATER QUALITY MEMORANDUM

Utah Coal Regulatory Program

September 18, 2014

TO: Internal File

THRU: Steve Christensen, Permit Supervisor 

FROM: Keenan Storrar, Hydrologist *Keenan Storrar*

SUBJECT: Fourth Quarter (Q4) of 2013 Water Monitoring, Bear Canyon Mine, Castle Valley Mining, LLC, C/015/0025, Task ID #4466

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 spring is due to be reactivated upon approaching within 500 feet of the Mohrland mining area: SBC-18.

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 discharge sample SCC-3 (16-8-8-1) 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). In-mine locations SBC-9A and SCC-3 were sampled this quarter.

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, SMH-5, SBC-14, SBC-15, SBC-16, SBC-16A, SBC-16B, SBC-18,

SBC-20, SBC-21, SBC-22. SBC-18 is not be monitored this quarter because the mine is still not within 500 feet of the area. Monitoring has restarted for SBC-22 in the Q4 of 2013. Weekly monitoring was restarted for 2013 at locations SBC-20, SBC-21, and SCC-2 on June 28, 2013.

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, and FC-8. 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 (lead monitoring required here). 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, and FC-8 are sampled for field parameters only during the months of May, August and October.

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, and CK-2. Field measurements only are scheduled in May, August, and October for all of the Fish Creek samples (FC-1 through FC-8, currently excluding FC-5). During this quarter, flow was reported at BC-1, BC-2, BC-3, CK-1, CK-2, FC-2, and FC-4. Weekly monitoring was reinitiated at locations FC-3, 4, and 6 on June 28, 2013.

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). Only discharge point UTG040006-004 – Mine Water to Bear Canyon Creek reported monthly flow data.

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.

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

Q4 2013 elevated T-Mn: SBC-14, SBC-17

Streams YES NO

Total dissolved solids for BC-3 were 1960 mg/L during this quarter or above the state water quality standards of 1,200 mg/L. T-Fe measured 8.69 mg/L in BC-1 and 2.01 mg/L in BC-2; these levels are above the state water quality objective of 1.0 mg/L. T-Mn was 0.323 in BC-1.

UPDES YES NO

Mine water from Bear Canyon Creek at 004 discharged this quarter. Q3 2013 was the first time mine water has not been continuously discharging from 004 since May 2009. Total dissolved solids at 004 were measured at 1208 mg/L on 10/09/2013.

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/Mohlrland 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. The Permittee has begun filing monthly reports of the accelerated weekly sampling via email and has updated the MRP. These reports will be filed by the second Friday of every month. The current springs include: FC-2, FC-3, FC-4, FC-6, SBC-20, SBC-21, and SCC-2. The final weekly monitoring for 2013 occurred on 10/31/2013, after this date there was no access to sites.

- 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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