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WATER QUALITY MEMORANDUM

Utah Coal Regulatory Program

September 24, 2012

TO: Internal File

THRU: Daron Haddock, Permit Supervisor

FROM: Steve Christensen, Environmental Scientist SRC/bm SRS

RE: 2012 1st Quarter 2012 Water Monitoring, Canyon Fuel Company, Soldier Canyon Mine, C/007/0018 WQ12-1, Task ID #4030

The approved water-monitoring plan can be found in Section 7.31.2 and summarized in Tables 7.31-1 through 7.31-4 of the Mining and Reclamation Plan (MRP). The narrative and tables identify the monitoring that is currently required as well as the monitoring requirements that will be required if the mining activity resumes at the site.

The Soldier Canyon Mine has been in temporary cessation since 1998. Due to the lack of coal mining activity at the site and the amount of water quality data previously obtained during active operations at the site, several water-monitoring sites have been discontinued. (See Discussion Below)

1. Was data submitted for all of the MRP required sites? **YES** ☒ **NO** ☐

Springs –

Table 7.31-1, *Recommended Monitoring Program Soldier Canyon Mine*, identifies six springs. Of the six springs, four of them (5, 10, 23 and 24) have been identified, as springs where monitoring activity will resume if and when the mine becomes active. The remaining two springs (4 and 8) have been discontinued from active monitoring for the Soldier Canyon Mine. However, the springs are still monitored as part of the Dugout Canyon water-monitoring plan.

During temporary cessation, the Permittee is not required to monitor any springs at the Soldier Canyon Mine. However, Table 7.31-2, Field and Laboratory Measurement Protocol in the MRP outlines additional baseline data collection for springs and stream monitoring sites during the first wet year and first dry year to enable the preparation of base-flow hydrographs. The additional data collection efforts also include the collection of operational laboratory measurements and ^{3}H measurements during both a wet and dry year.

Streams –

A total of seven surface water-monitoring sites are listed in Table 7.31-1, *Recommended Monitoring Program Soldier Canyon Mine*. Of the seven, two are actively monitored (G-5 and G-6). Three of the stream sites (G-2, G-8 and G-9) have been discontinued. The approved MRP detailed how monitoring of these sites would end one year following the end of mining activity in the area. Monitoring of stream site G-10 will resume in the quarter the Soldier Canyon mine portals are reopened for active mining. Stream monitoring site G-7 will be sampled during the first wet year and first dry year in order to enable the preparation of base-flow hydrographs.

During temporary cessation, the Permittee is required to sample G-5, and G-6 flow, and the laboratory parameters outlined in Table 7.31-4 each quarter. Several analytical parameters are only sampled during the 3rd quarter (dissolved iron, total iron, dissolved manganese and total manganese).

Flow and water quality data was reported for surface water monitoring sites G-5 and G-6.

Wells–

Groundwater monitoring wells MW-1M, MW-1C, MW-2M and MW-3M have been discontinued. Approximately 4.5 years of baseline data were collected from these wells in the area of the refuse pile. No significant impacts were noted during that time and due to the breadth of baseline data obtained from these wells, a thorough characterization of the groundwater system in this area has been documented.

The monitoring of wells 5-1, 6-1 has been discontinued. Monitoring well 10-2 is no longer monitored as part of the Soldier Canyon MRP, but is monitored as part of the adjacent Dugout Canyon MRP. Monitoring well 32-1 is currently not monitored, however monitoring of this site will resume if and when the mine becomes active.

During temporary cessation, the Permittee is not required to sample any wells at the Soldier Canyon Mine.

UPDES–

The Soldier Canyon Mine contains three active UPDES sites. They are: MW-1 (001) mine water discharge, MW-2 (003) mine water discharge and UT0023680-002 sediment pond discharge. The Permittee is required to monitor each UPDES site monthly. However, none of the three UPDES sites has produced any measurable flow in some time. MW-1 (001) last produced a discharge on December 13th, 1991. MW-2 (003) last flowed on March 16th, 1998. UT0023680-002 last flowed on October 1st, 1985.

None of the three UPDES sites recorded any flow during the quarter.

2. Were all required parameters reported for each site? **YES** ☒ **NO** ☐

3. Were any irregularities found in the data? **YES** ☒ **NO** ☐

No irregularities were found in the data submitted for stream monitoring site G-5 (i.e. data was well within 2 standard deviations of the mean). Stream monitoring site G-6 did report two irregularities for dissolved magnesium (D-Mg) and bicarbonate (Bcarb). The concentrations for both of these parameters were below the average of the data set. The reported D-Mg value of 19.3 parts per million (ppm) was 2.09 standard deviations below the average of 42.52 ppm. The Bcarb concentration of 194 ppm was 2.22 standard deviations below the average of 299.3 ppm.

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

The MRP does not contain a commitment for re-sampling of baseline water data.

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

NA.

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