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WATER QUALITY MEMORANDUM
Utah Coal Regulatory Program

January 31, 2011

TO: Internal File

THRU: James Smith, Permit Supervisor DS 02/02/11

FROM: April A. Abate, Environmental Scientist III aaa 2-1-2011

RE: 2010 Second Quarter Water Monitoring, Canyon Fuel Company, LLC, SUFCO Mine, C/041/0002, WQ10-02, Task ID #3572

The SUFCO Mine is an operating longwall mine. Current operations are in the Quitchupah and Muddy Tracts. Water monitoring requirements can be found in Section 7.3.1.2 of the MRP, see Tables 7-2, 7-3, 7-4, 7-5, and 7-5A. Page 7-48 contains the important statement that (non Box-Canyon, non-UPDES) "monitoring sites are sampled three times per year," meaning the second, third, and fourth quarters.

As of this quarter, SUFCO has added two additional stream monitoring points to their plan: SUFCO 006A and SUFCO 006B are intended to monitor the upstream and downstream flow along the South Fork of Quitchupah Creek on a quarterly basis and every two weeks while mining is taking place within a 15-degree angle of draw of the stream channel.

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

Springs

The MRP requires the Permittee to monitor 25 springs during the second, third, and fourth quarter as per Table 7-2. Some require full laboratory analysis according to Table 7-4, while others simply require field measurements.

Each of the required spring locations were monitored during the second quarter of 2010.

Streams

The MRP requires the Permittee to monitor 20 streams during the second, third and fourth quarter as per Table 7-2.

Each of the required stream locations were monitored during the second quarter of 2010.

Wells

The MRP requires the Permittee to monitor water levels for 6 wells. Monitoring wells US-80-2, 89-20-2W, US-81-4, and 01-8-1 are monitored quarterly. Monitoring wells US-80-4 and US-79-13 are monitored annually during the 3rd quarter.

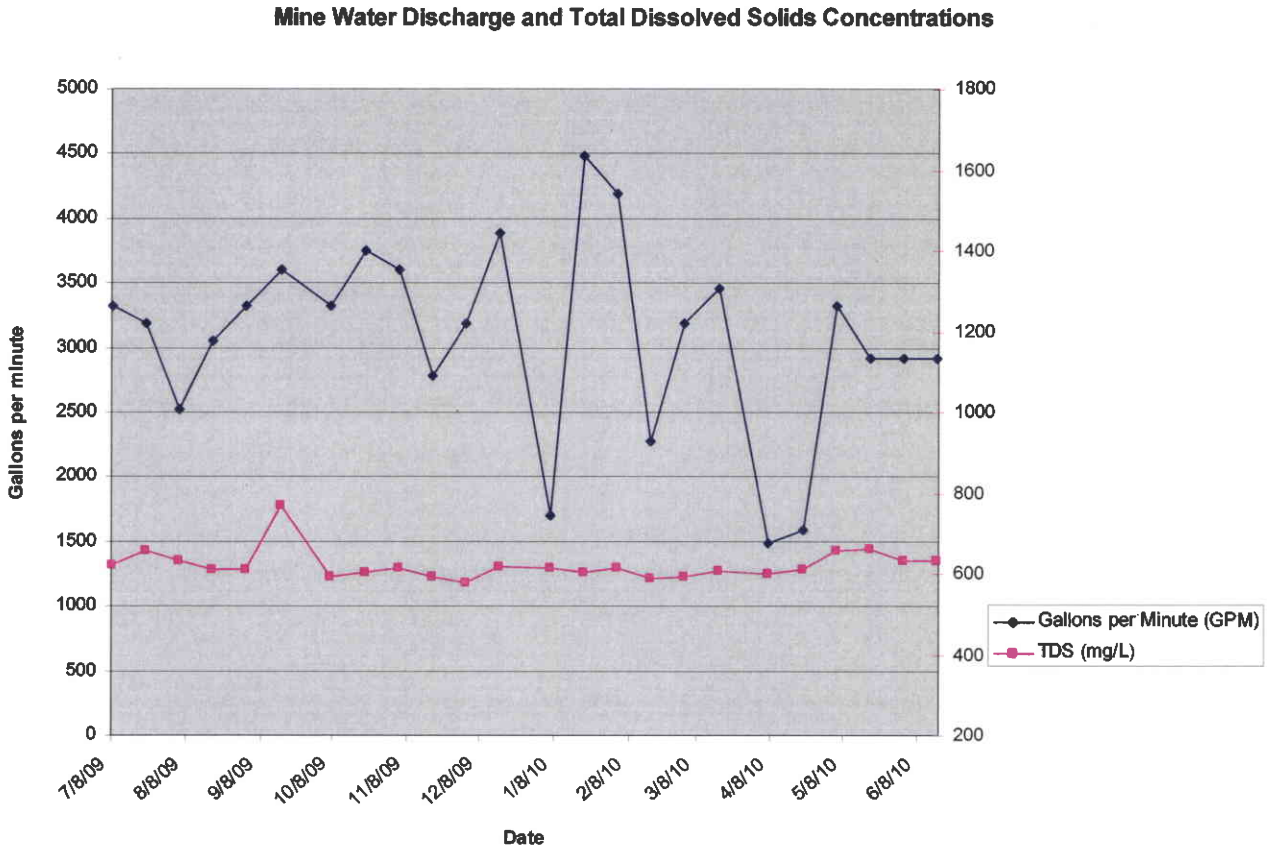
All wells on the quarterly protocol were gauged during the second quarter of 2010.

Additional wells not listed in the MRP associated with the waste rock disposal site are in the database including: WRDS-B3, WRDS-B5, WRDS-B6, WRDS-B8, WRDS-B9, WRDS-B6 and WRDS-B8. These wells were sampled for analytical parameters during the second quarter of 2010.

UPDES

The UPDES Permit/MRP require bi-weekly monitoring of 3 outfalls: UT0022918-001: *mine water discharge to Spring Canyon;* UT0022918-002: *sedimentation pond discharge to Spring Canyon; and* UT0022918-003A: *the mine water discharge to the North Fork of Quitchupah Creek.*

The Permittee submitted all required samples for the UPDES sites. Outfall 001 reported no flow this quarter. The mine water discharge outfall location to the North Fork of Quitchupah Creek averaged a flow of 2,522 gallons per minute (gpm) and an average Total Dissolved Solids (TDS) concentration of 667 mg/L this quarter. The chart below presents a more historical representation of mine water discharge and its relationship to TDS concentrations in the mine water.



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

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

Dissolved potassium was slightly elevated in stream sample 006 this quarter at a concentration of 4.21 mg/l. Field measurements for conductivity were elevated in stream samples 047A and 090 during this quarter at readings reported at 1657 and 362 umhos/cm, respectively.

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

There is no commitment in the MRP to resample for baseline parameters.

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

Last quarter, UPDES sample UT0022918-002: SED POND Q TO E SPRING CYN was shown as being above the daily maximum limitation for Total Suspended Solids (TSS) on February 3, 2010 at a concentration of 90 mg/L. The daily maximum limit is 70 mg/L. During the second quarter 2010, the TSS levels in all samples collected from this location were all below the daily maximum limit and averaged 24 mg/l.

As a general comment, the existing water monitoring plan in the MRP contains several outdated references to sampling protocols that were performed in the 1990s. The Division recommends that the water monitoring plan be updated in the near future that is more reflective of current sampling protocols (i.e. addressing the U.S. Forest Service sampling locations in the MRP).

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