#4117
OK

WATER QUALITY MEMORANDUM
Utah Coal Regulatory Program

December 11, 2012

TO: Internal File

THRU: Steve Christensen, Permit Supervisor SHC

FROM: Amanda Daniels, Environmental Scientist AD

RE: 2012 Second Quarter Water Monitoring, Canyon Fuel Company (CFC), LLC, Dugout Mine, C/007/0039-WQ12-2, Task ID #4117

The Dugout Canyon Mine is currently operational in the Book Cliff Mountain range of Carbon County, UT. Water monitoring data is submitted quarterly to the Division EDI database. Beginning on page 7-40 of the approved Mining and Reclamation Plan (MRP), water monitoring protocols and sampling requirements are provided for surface water, ground water, monitoring wells and Utah Pollutant Discharge Elimination System (UPDES) outfalls. Tables 7-4 and Table 7-5 list the individual monitoring sites and their sampling protocols for ground water and surface water respectively.

1. Was data submitted for all required sites?

Springs YES [X] NO [ ]

The approved MRP outlines the operational and post-mining monitoring of ten springs (203, 259A, 260, 321, 324, SC-100, SC-116, SC-14, SC-65 and SP-20). The locations of these springs are depicted on Plate 7-1, Hydrologic Monitoring Stations. Groundwater discharge from the old Gilson coal seam workings is also monitored and identified as location MD-1.

Streams YES [X] NO [ ]

The approved MRP outlines the monitoring of ten stream sites (DC-1, DC-2, DC-3, DC-4, DC-5, FAN, PC-1A, PC-2, PC-3, and RC-1). Sites DC-4 and DC-5 are sampled during the first wet or dry year as conditions permit. The locations of these streams are depicted on Plate 7-1, Hydrologic Monitoring Stations.

Wells YES [X] NO [ ]

The approved MRP outlines the sampling of three monitoring wells (GW-10-2, GW-11-2 and GW-24-1). Table 7-4 and Section 731.200 of the MRP specify that the Permittee will obtain

quarterly water level measurements from the wells. Due to the ages of the wells and deterioration of the casing materials, water quality data is not collected.

Monitoring well GW-24-1 became blocked during the winter of 2000 and was last sampled in September of 1998. The well was removed from monitoring after the 4th quarter of 2004. Monitoring well G-11-2 was last monitored in October 2007. Since that time, the Permittee has reported that the well has appeared to have "caved in". Monitoring well GW-10-2 is still functioning and actively monitored for water level.

Though not required by the approved MRP, three additional monitoring wells (DH-1, DH-2 and DH-3) are monitored at the waste rock disposal site. Water levels are monitored quarterly with additional water quality sampling obtained from DH-1 during low flow periods (i.e. 3rd or 4th quarter).

Depth was recorded for well GW-10-2.

UPDES YES [X] NO [ ]

Operational monitoring is required monthly for six active UPDES outfalls (Permit No. UT0025593):

- **001**-Mine water discharge to Dugout Ck.,
- **002**-Sedimentation pond discharge to Dugout Ck. (disturbed area runoff),
- **003**-Storage water discharge to Dugout Ck. (30,000-gallon water tank discharge),
- **004**-Sedimentation pond (waste rock site) discharge to Grassy Trail Ck. Tributary,
- **005**-Pace Canyon fan portal breakout, mine water discharge to Pace Ck.
- **006**-Sediment trap culvert discharge to Pace Creek (disturbed area runoff from Pace Canyon Fan facility).

Specific effluent limitations and self-monitoring requirements as outlined in the UPDES permit are presented below:

Effluent Characteristics	Effluent Limitations
TDS, tons/day	1.0
Total Suspended Solids (TSS), ppm	70
Total Iron, ppm	1.1
Oil & Grease, ppm	10
Total Dissolved Solids (TDS), ppm	2,400
pH	9

3,000 parts per million (ppm) is the water quality standard for total dissolved solids (as established by the Department of Water Quality) for both Pace Creek and Dugout Creek.

UPDES outfall 003 produced a discharge in June of this quarter.

2. Were all required parameters reported for each site?

Springs	**YES [X]**	**NO [ ]**
Streams	**YES [X]**	**NO [ ]**
Wells	**YES [X]**	**NO [ ]**
UPDES	**YES [X]**	**NO [ ]**

3. Were irregularities found in the data?

Springs	**YES [ ]**	**NO [X]**
Streams	**YES [ ]**	**NO [X]**
Wells	**YES [ ]**	**NO [X]**
UPDES	**YES [ ]**	**NO [X]**

UPDES outfall 003 discharged during this quarter.

Outfall 003 reported concentrations within the requirements as established by the UPDES Discharge permit for pH, TDS, T-Fe and TSS.

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

The resampling of baseline data will next be performed in July 2014. In addition, one water sample will be collected at each spring sampling point during low flow period every fifth year, during the year, preceding re-permitting. These samples will be obtained for the analysis of baseline parameters (See Table 7-4).

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

None.