#3924
BC

WATER QUALITY MEMORANDUM

Utah Coal Regulatory Program

March 15, 2012

TO: Internal File

THRU: Steve Christensen, Permit Supervisor SLC

FROM: April A. Abate, Environmental Scientist III aaa 3/19/2012

RE: 2011 Third Quarter Water Monitoring, Plateau Mining Corporation (PMC), Willow Creek Mine, C/007/0038, WQ11-03, Task ID #3924

The Willow Creek Mine is in reclamation. The mine portals have been closed and sealed. The disturbed areas around the portals have been regraded and seeded. The most recent surface operations took place in Willow Creek Canyon, about a mile from the junction between U.S. Highway 6 and State Highway 191. The reclaimed area in Crandall Canyon is part of the Willow Creek permit area received Phase I Bond Release approval from the Division. The MRP requires that all surface water sampling be conducted up through Phase II Bond Release.

There are no ground water sites monitored during the reclamation phase.

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

Under the reclamation plan, surface water monitoring is required for sites listed on Table 4.7-2 and shown on Map 15.

Springs- There are no springs monitored during the reclamation phase.

Streams- There are six surface water-monitoring sites:
B3N (Willow Creek above power plant),
B-5 (Price River below processing plant above Willow Creek),
B-6 (Price River above coal processing plant),
B25 (Crandall Canyon Creek),
B26 (lower reach of Crandall Canyon)
B151 (Willow Creek – 3 miles above Willow Creek Mine)

The reclamation sampling water quality list is presented in Section 13, p. 28. Sampling is conducted quarterly. PMC tries to monitor the sites within a two week period from March 15th, June 10th, September 5th and November 30th to attempt to collect data that coincides with first thaw, spring high flow, end of summer low-flow and last sample before

freeze-up.

All required stream sampling locations were monitored for the quarter on September 16, 2011. No flow has been measured from Crandall Canyon Creek samples B-25 and B-26 since. The Palmer Hydrologic Index for Utah Region 4 was 3.97 for the month of September. This indicates that the region was in a severe wet spell and that if Crandall Canyon Creek was to flow, this would have been a likely time.

Wells- There are no operational monitoring wells.

UPDES- The mine has been reclaimed and as a result, there are no currently active Utah Pollutant Discharge Elimination System (UPDES) monitoring locations at the site.

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

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

Surface flows in Willow Creek reported were a little lower this quarter as compared to the previous quarter (2,558 gallons per minute (gpm) verses approximately 5,700 gpm). Samples B151 and B3N had several parameters that reported results outside of two standard deviation (see table below) such as total suspended solids and total iron. The operator reported that the samples were collected just after a storm event. Surface flows downstream of the former portal area continue to be reported at approximately 130 cubic feet/second this quarter.

The following table presents samples with results reported outside at least two standard deviations:

Sample	Parameter	Result	Unit	Standard Deviation
B151	T-Fe	76.53	mg/L	>9.99
B151	TSS	9428	mg/L	>9.99
B151	D-Mg	15.33	mg/L	<2.72
B151	D-K	4.99	mg/L	>2.92
B151	T-Alk	150	mg/L	<2.28
B151	T-Hardness	145	mg/L	<2.57
B151	TDS	268	mg/L	<2.06
B151	Bcarb	150	mg/L	<2.06
B3N	T-Fe	93.18	mg/L	>9.99
B3N	TSS	10476	mg/L	>9.99
B3N	D-Mg	12.81	mg/L	<2.70
B3N	D-K	4.94	mg/L	>2.16
B3N	T-Alk	146	mg/L	<2.06
B3N	T-Hardness	123	mg/L	<2.68
B3N	Bcarb	146	mg/L	<2.16
B3N	T-Anis	5.33	meq/L	<2.06

TDS standards for this reach of the Price River Watershed are set at 1,700 mg/L based on the Utah Administrative Code Rule R317-2. Stream samples during this quarter remain well below this standard ranging between 209-316 mg/L.

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

Baseline data were collected at the beginning of mining operations for a two-year period; however, routine 5-year sampling is not specified in MRP. The Division recommends baseline water quality parameter sampling at each five-year renewal period.

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

Laboratory and field measurements for pH and Conductivity appear to be yielding very precise results – which is a good indication that the field instruments are providing quality readings.

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