

WATER QUALITY MEMORANDUM

Utah Coal Regulatory Program

December 7, 2009

TO: Internal File
THRU: James D. Smith, Permit Supervisor *JDS 10/12/09*
FROM: Kevin W. Lundmark, Environmental Scientist II *KWL*
SUBJECT: 2007 Third Quarter Water Monitoring, Andalex Resources, Centennial Mine, C/007/0019, WQ07-3, Task ID #3173

The Centennial Mine is currently in temporary cessation. No mining or coal processing activities currently take place there, nor is the site in active reclamation. The Permittee (Andalex Resources) is required to continue with the requirements for water monitoring up until bond release in accordance with R645.731.214.

This report is being prepared retroactively and all water monitoring requirements are listed herein are under the previously-approved plan. The new water monitoring plan has been in effect since March 26, 2009. Sections 711.300 pages 7-2 through 7-10 and Appendix L of the MRP pertain to water monitoring. Water sampling locations are shown on Figure IV-11.

1. Were data submitted for all of the MRP required sites?

Springs YES NO

Six of the spring sample sites were monitored during this quarter. Only two sites yielded flow, B-351 (undeveloped spring below stock pond) and S18-1.

Streams YES NO

Flow was reported in 3 out of the 12 stream monitoring sites: Left Fork of Deadman Wash (18-3), Summit Creek (SC-1) and Antone Creek (AC-1). All the remaining sites reported no flow conditions.

Wells YES NO

Well #1 was reported as dry to pump elevation.

UPDES YES NO

All UPDES locations were monitored monthly in accordance with the permit. The only location that discharged was the Aberdeen Mine Discharge outfall (D004).

Pond YES NO

The stock watering pond, sampling location 31-1 was reported as not flowing during third quarter 2007.

2. Were all required parameters reported for each site?

Springs YES NO

Total hardness was not reported for spring B-351 (undeveloped spring below stock pond). Hardness may be calculated from the dissolved calcium and dissolved magnesium concentrations by the following equation:

$$\text{Hardness, mg equiv/L CaCO}_3 = ([\text{Ca,mg/l}] * 2.497) + ([\text{Mg,mg.l}] * 4.116)$$

The reported concentrations of dissolved calcium (62.4 mg/L) and dissolved magnesium (59.3 mg/L) correspond to a hardness of 244 mg/L. The water quality database has been updated with this value.

Streams YES NO

Well YES NO

Not applicable this quarter.

UPDES YES NO

Pond YES NO

Not applicable this quarter.

3. Were any irregularities found in the data?

Springs YES NO

Streams YES NO

Dissolved sodium appeared slightly elevated in the sample from location AC-1.

Wells YES NO

Not applicable this quarter.

UPDES YES NO

Flow at location D004 was reported as 1,080 gallons per minute on August 29, 2007 and 1,040 gallons per minute on September 25, 2007. The reasons for the elevated discharge were reported as greater than normal discharge from the mine.

Total iron concentrations at location D004 exceed the UPDES discharge limitation of 1.0 mg/L in samples collected August 14, 2007 (1.14 mg/L) and September 13, 2007 (5.16 mg/L). As this report was prepared retroactively and discharge from the mine ceased when mining operations ceased, additional action does not appear warranted for the elevated iron concentrations.

Location D004 had TDS of 1,520 to 1,698 mg/L during third quarter 2009, which exceed the discharge limitation of 500 mg/L average 30-day TDS. The UPDES permit provides an alternate limitation of 1 ton (2,000 pounds) per day TDS loading as a sum from all outfalls if the 30-day average of 500 mg/L cannot be met. TDS loading calculated from flow and TDS measurements during third quarter 2007 were 5.9 to 11 tons per day at location 004. The measured TDS at location 004 are below the Site Specific Standard for TDS for the Price River and tributaries from the confluence of Coal Creek to Carbon Canal Diversion (1,700 mg/L, UAC R317-2-14). As this report was prepared retroactively and discharge from the mine ceased when mining operations ceased, additional action does not appear warranted for the elevated TDS.

4. Did the Permittee make a timely submittal of all data, including initially missing data, and satisfactorily explain irregular data? YES NO

5. Does the Mine Permittee need to submit more information to fulfill this quarter's monitoring requirements? YES NO

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

None.

7. Follow-up from last quarter, if necessary.

None, report was prepared retroactively.