

# WATER QUALITY MEMORANDUM

Utah Coal Regulatory Program

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April 21, 2004

TO: Internal File

THRU: Daron R. Haddock, Permit Supervisor

FROM: Dana Dean, P.E., Senior Reclamation Hydrologist

RE: 2004 First Quarter Water Monitoring, Plateau Mining Corporation, Willow Creek Mine, C/007/0038-WQ04-1, Task #1882

- 1. Was data submitted for all of the MRP required sites?** YES  NO   
*Identify sites not monitored and reason why, if known:*

- 2. On what date does the MRP require a five-year resampling of baseline water data.**  
See Technical Directive 004 for baseline resampling requirements. Consider the five-year baseline resubmittal when responding to question one above. Indicate if the MRP does not have such a requirement.

### Resampling due date

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

- 3. Were all required parameters reported for each site?** YES  NO   
*Comments, including identity of monitoring site:*

**4. Were irregularities found in the data?**

YES  NO

*Comments, including identity of monitoring site:*

Several parameters fell outside of 2 standard deviations from the mean. They were:

Site	Parameter	Value	Deviations from Mean	Mean
B5	Chloride	35	2.36	17.03
B5	Total Iron	14.5	2.12	2.98
B6	Chloride	34	2.22	17.32
B6	Total Iron	16.7	2.48	7.28
B6	Total Cations	3.3	2.66	5.32
B151	Dissolved Calcium	71.5	2.00	52.02

The chloride values for B5 and B6 are still extremely low, only 14% of the EPA's secondary drinking water standard of 250 mg/l. They are also in line with other first quarter values in relation to flow. At both sites, as the flow at decreases, the chloride value tends to increase.

This is only the third time (of 31 samples) that total iron at B5 has been higher than 10 mg/l. However, it is regularly (39% of the time) over the 1 mg/l that is considered the upper limit for aquatic life. It has not been over 10 mg/l since March of 2001. The total iron concentration does not correlate with the flow data.

This is only the third time (of 28 samples) that total iron at B6 has been higher than 10 mg/l. However, it is regularly (43% of the time) over the 1 mg/l that is considered the upper limit for aquatic life. It has not been over 10 mg/l since March of 2001. The total iron concentration does not correlate with the flow data.

The dissolved calcium reading of 71.5 mg/l at B151 is lower than last quarter, when it reached its all time high. The water at this site has always been "hard" to "very hard" with hardness values from 145 to 432 (hard = 120-180 mg/l, very hard = >180 mg/l). There is no water quality standard for calcium.

Several routine Reliability Checks were outside of acceptable values. They were:

Site	Reliability Check	Value Should Be...	Value is...
B3N	Mg/(Ca + Mg)	< 40 %	54 %
B3N	Ca/ (Ca + SO4)	> 50 %	48 %
B3N	Na/(Na + Cl)	> 50 %	25 %

B5	Mg/(Ca + Mg)	< 40 %	46 %
B5	Na/(Na + Cl)	> 50 %	21 %
B6	Conductivity / Cations	>90 & <110	76
B6	Mg/(Ca + Mg)	< 40 %	46 %
B6	Na/(Na + Cl)	> 50 %	22 %
B151	Conductivity / Cations	>90 & <110	84
B151	Mg/(Ca + Mg)	< 40 %	51%
B151	Na/(Na + Cl)	> 50 %	27%

The Permittee should work with the lab to make sure that samples pass all quality checks so that the reliability of the samples does not come into question.

**5. Were DMR forms submitted for all required sites?**

1<sup>st</sup> month, YES  NO   
 2<sup>nd</sup> month, YES  NO   
 3<sup>rd</sup> month, YES  NO

All DMRs reported "no flow".

**6. Were all required DMR parameters reported?**

YES  NO

*Comments, including identity of monitoring site:*

All DMRs reported "no flow".

**7. Were irregularities found in the DMR data?**

YES  NO

*Comments, including identity of monitoring site:*

All DMRs reported "no flow".

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

No actions are necessary at this time.