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CR
#3161

WATER QUALITY MEMORANDUM
Utah Coal Regulatory Program

April 2, 2009

TO: Internal File

THRU Daron R. Haddock, Permit Supervisor

FROM: James D. Smith, Environmental Scientist III JDS 02/04/09

RE: 2008 Fourth Quarter Water Monitoring, PacifiCorp, Deer Creek Mine. C/015/0018, Recurring Task ID #3161

The Deer Creek Mine monitoring plan is described in Appendix A of Volume 9 of the MRP.

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

Streams	YES ☒	NO ☐
UPDES	YES ☒	NO ☐
In-mine	YES ☒	NO ☐
Springs	YES ☒	NO ☐

NEWUA Meter 2 was not accessible during the fourth quarter 2008.

Wells	YES ☒	NO ☐

2. Were all required parameters reported for each site?

Streams	YES ☒	NO ☐
UPDES	YES ☒	NO ☐
In-mine	YES ☒	NO ☐

Springs YES ☒ NO ☐

Wells YES ☒ NO ☐

3. Were any irregularities found in the data?

Listed parameters were more than two standard deviations from the mean. An asterisk (*) indicates this is not a parameter specifically required by the MRP.

Streams YES ☒ NO ☐

DCR04 December: lab pH*;
HCC01 December: field electrical conductivity;
RCF3 December: field electrical conductivity;
RCW4 December; field electrical conductivity, Ca, Mg, K, SO4, total hardness, lab electric conductivity*, TDS, total cations*, total anions*;
MFB December: field electrical conductivity;
ICD: lab electric conductivity.

UPDES YES ☐ NO ☒

In-mine YES ☒ NO ☐

TW-10: acidity*;
Main North Main East: acidity*.

Springs YES ☒ NO ☐

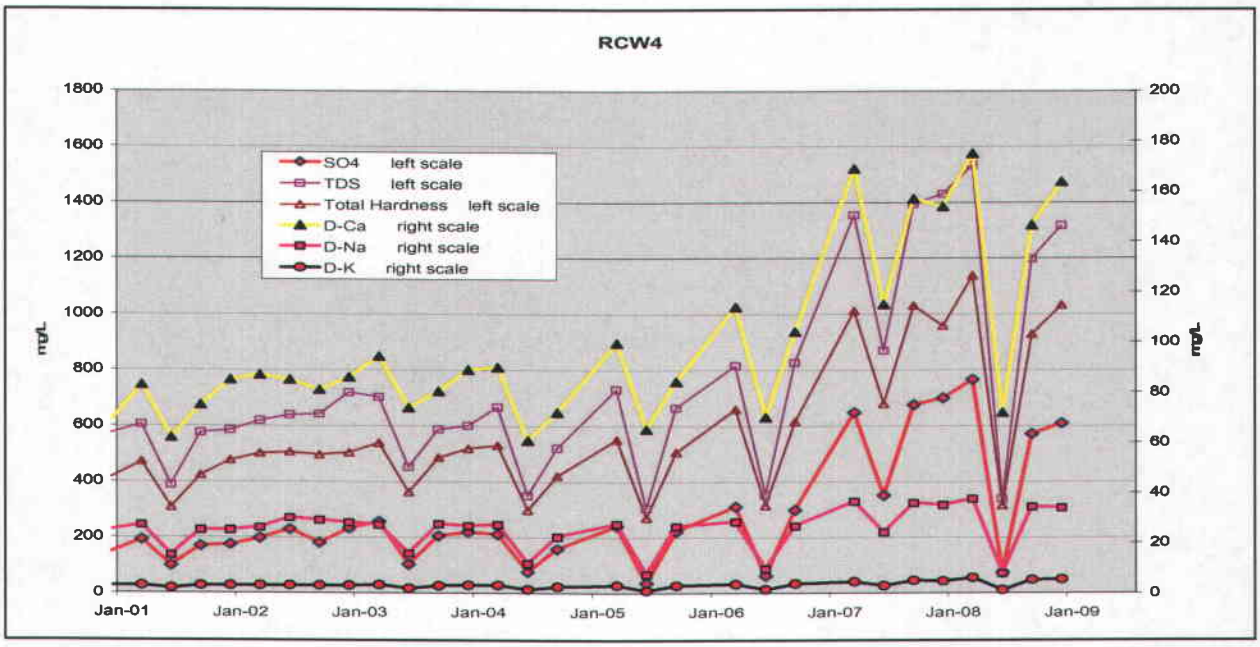
Burnt Tree: Mg, Na, acidity*, cation-anion balance;
Elk Spring: Ca, cation-anion balance;
Sheba Spring: acidity* and TDS;
Ted's Tub: acidity*;
79-2: field electrical conductivity, acidity*, cation-anion balance;
79-10: Mg, acidity*, and cation-anion balance;
79-26: total alkalinity;
79-28: Na, bicarbonate as CaCO3, acidity*;
79-29: field electrical conductivity, Mg, and Na;
79-34: field electrical conductivity, acidity*, and TDS;
79-35: water temperature;
79-38: Na and total Fe;
80-47: field electrical conductivity and acidity*,

80-48: field electrical conductivity, Ca, and cation-anion balance;
82-51: water temperature, field electrical conductivity, Na, and total Fe;
82-52: Ca, Mg, Na, acidity*, and cation - anion balance;
89-61: bicarbonate as CaCO3;
89-65: water temperature;
NEWUA Meter 3 December: field electrical conductivity and lab pH;
MF-19B: Ca, bicarbonate as CaCO3, total hardness, lab electric conductivity*, and TDS;
MF-219: field pH and TDS;
MFR-10: TDS;
MFR-30: lab electric conductivity and TDS;
RR-5: field pH;
RR-23A: TDS;
SP1-26: field pH and TDS;
EM Pond: field pH;
Grant Spring: TDS;
Mine Site 4: acidity*.

Wells YES ☒ NO ☐

DCWR1: acidity*.

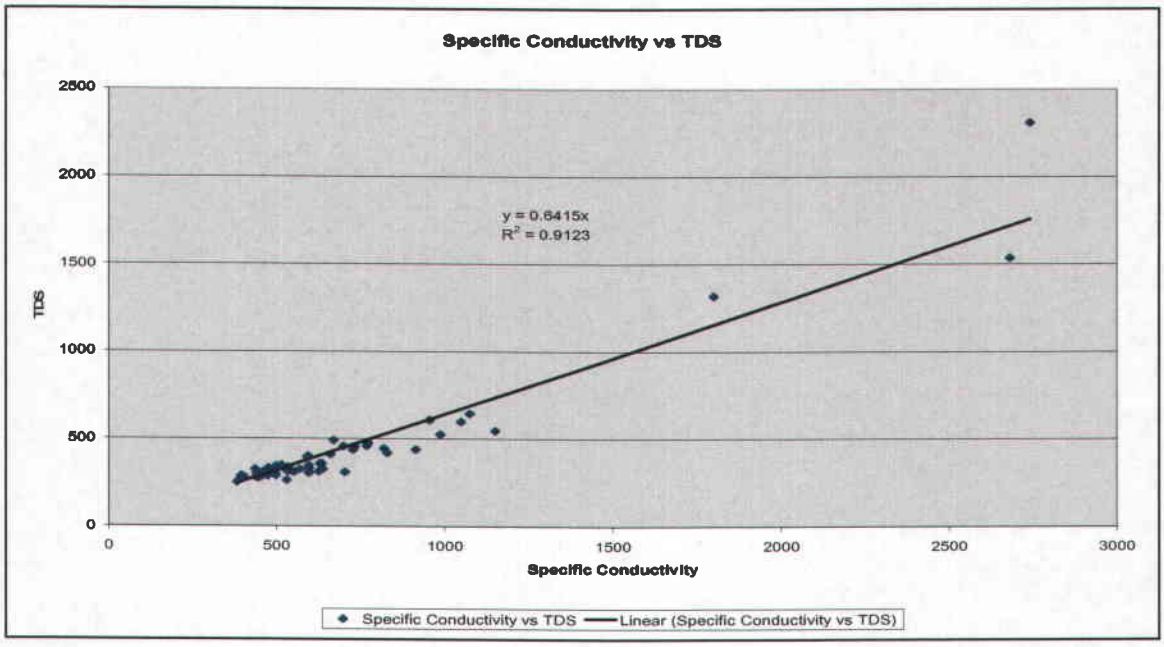
At RCW4 - on Rilda Creek below the new Rilda Canyon facility - field electrical conductivity, Ca, Mg, K, SO4, total hardness, and TDS have been higher than average since September 2006. This coincides with the construction of the new portals and surface facilities.



In the parameters noted above as being more than two standard deviations from the mean:

- None of the cation-anion balances exceeded 5 percent difference,
- Although several sites had Na, Mg, Ca, and bicarbonate (as CaCO3) values that were more than two standard deviations from the mean, none of the values are extreme in comparison to long-term trends.

An Excel least squares fit calculation of TDS to field specific conductivity (see chart below) indicates the ratio between these two parameters is ~.6, which lies within the acceptable range of 0.55 to 0.76. (The values at DCWR1 were not used because extreme outliers skew least squares fit calculations.)



Acidity (not a required parameter) is elevated at a dozen sites: DCWR1, the two in-mine sites, and nine springs. This may be due to the recently required change in the way the labs report acidity; however, as far as is known, there was no change in the procedure itself. Because of the overall alkaline nature of the rock in the Wasatch Plateau, elevated acidity is atypical, so the Operator and Division should watch for trends in this parameter.

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

Baseline analyses were performed in 2001 and are to be repeated every 5 years; baseline analyses were done in 2006 and should be done again in 2011: renewal submittal due 10/07/10, renewal due 02/07/11.

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

There is no indication of trends or extremes in any of the parameter values. No further action recommended at this time.

6. Does the Mine Operator need to submit more information to fulfill this quarter's monitoring requirements? YES ☐ NO ☒

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

None.

8. Did the Mine Operator submit all the missing and/or irregular data (datum)?

Yes.

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