



State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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July 20, 2001

TO: Internal File
THRU: Daron R. Haddock, Permit Supervisor *DRH*
FROM: James D. Smith, Senior Reclamation Specialist *JDS*
RE: 2000 Fourth Quarter Water Monitoring, Energy West Mining Company, Deer Creek Mine, C/015/018-WQ00-4

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

Flow at HCC01 is in the Annual Report
RCLF1, RCLF2, RCF2, and MFA01 were dry throughout the fourth quarter;
MB02 was dry or frozen throughout the fourth quarter;
DCR01, MCH01, and RCF1 were inaccessible frozen in November and December;
Springs 79-23, 79-24, 79-40, 80-43, 80-46, and 89-60 were dry in October;
Springs 80-41 and 80-44 had insufficient flow to sample in October;
Spring 82-51 was frozen in October.

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

Renewal submittal due 10/07/00, renewal due 2/07/01. Baseline analyses were performed in 1996 and will be repeated every 5 years, i.e., next baseline analyses will be in 2001.

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

NEWUA Meters #2 and #3: Monthly flow not reported for October and November.
(Monthly flows are included in the Annual Report)

4. Were irregularities found in the data? YES [X] NO []

Comments, including identity of monitoring site:

DCR04: Bicarbonate (n = 51), Flow (n = 186), Total Alkalinity (n = 51), and TSS (n = 51) are outside two standard deviation range;
DCR06: Flow (n = 176) is outside two standard deviation range;
DCWR1: Depth (n = 42) is outside two standard deviation range;
HCC02: Na (n = 14) is outside two standard deviation range;
Main N Main E: Total Alkalinity (n = 31) and Total Hardness (n = 31) are outside two standard deviation range;
RCF3: Field Conductivity (n = 66) and Na (n = 12) are outside two standard deviation range;
RCW4: Field Conductivity (n = 67) and Na (n = 14) are outside two standard deviation range;
NEWUA METER-2: Field Conductivity (n = 18), Na (n = 8), and Water Temperature (n = 20) are outside two standard deviation range;
NEWUA METER-3: Field Conductivity (n = 18), Ca (n = 8), Na (n = 8), SO₄ (n =), TDS (n =), and Water Temperature (n = 21) are outside two standard deviation range;
UT0023604-001 October monthly operational: HCO₃ (n = 134) and Mg (n = 47) are outside two standard deviation range and HCO₃ is below the reported minimum in the APPX database;
UT0023604-001 - November monthly operational: Mg (n = 47) is outside two standard deviation range and below the reported minimum in the APPX database;
UT0023604-002 - October monthly operational: Acidity (n = 9) is outside two standard deviation range and exceeds the reported maximum in the APPX database;
UT0023604-002 - December monthly operational: Water Temperature (n = 232) is outside two standard deviation range;
November and December - CCCW-3S-L: Elevation of Water (n = 67) is below the reported minimum in the APPX database;
Rilda Cyn Well P-6: Elevation of Water (n = 71) is outside two standard deviation range for all three months;
Sheba Spring: Cl (n = 31) is outside two standard deviation range and is below the reported minimum in the APPX database;
79-02: Na (n = 6) is outside two standard deviation range and above the reported maximum in the APPX database;
79-28: Na (n = 6) is outside two standard deviation range and above the reported maximum in the APPX database; Cation-anion Balance is -7.6 %;
79-32: HCO₃ (n = 10) and Total Alkalinity (n = 11) are outside two standard deviation range and above the reported maximum in the APPX database; Mg (n = 5) is outside two standard deviation range and is below the reported minimum in the APPX database; Cation-anion Balance is -12.7 %;
79-38: Mg (n = 6) is outside two standard deviation range and above the reported maximum in the APPX database;
80-50: Flow (n = 5), Field Conductivity (n = 5), Field Temperature (n = 5), HCO₃ (n = 5), Total Alkalinity (n = 5), Total Cations (n = 5), Cl (n = 5), Total Hardness (n = 5), Mg (n = 5), Na (n = 5), and TDS (n = 5)) are outside two standard deviation range and below

the reported minimum in the APPX database;
82-52: Mg (n = 6) is outside two standard deviation range and above the reported maximum in the APPX database;
89-65: TDS (n = 14) is outside two standard deviation range and above the reported maximum in the APPX database;
89-68: Field Conductivity is outside two standard deviation range and below the reported minimum in the APPX database;
91-73: Mg (n = 7) is outside two standard deviation range and above the reported maximum in the APPX database;

5. Were DMR forms submitted for all required sites?

1st month, YES [X] NO []
2nd month, YES [X] NO []
3rd month, YES [X] NO []

Identify sites and months not monitored:

6. Were all required DMR parameters reported?

YES [X] NO []

Comments, including identity of monitoring site:

7. Were irregularities found in the DMR data?

YES [X] NO []

Comments, including identity of monitoring site:

UT0023604-001 - October: pH is outside two standard deviation range;
UT0023604-001 - November: DMR shows Minimum pH as 7.9, lab sheet shows 7.9;

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

DMR TDS Quarter Average, a ~~parameter~~ parameter required for UT0023604-002, needs to be added to the APPX database.

Numerous values were outside the two standard deviation range. Sample size is usually small, and none of the values are extreme. Recommended action is to watch for trends.

Flow data (monthly) and water quality data (quarterly) for NEWUA Meters #2 and #3 need to be submitted quarterly. Monthly flow data are in the Annual Report, but no water-quality data from these two sites were submitted between the 3rd quarter 1997 and the 4th quarter 2000.