



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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2 October 1991

TO: Pamela Grubaugh-Littig, Permit Supervisor

FROM: Hugh Klein, Reclamation Hydrologist 

RE: Special Condition, R614-301-731.200 (Water Monitoring), for Federal Lease Tract Approval, ACT\015\009, Folder #2, Mountain Coal Company, Trail Mountain #9 Mine, Emery County, Utah

SYNOPSIS

As part of approval for the Federal Lease, the applicant is required to monitor quality and quantity of the Star Point aquifer at a point where the flow leaves the permit area. On 10 September 1991, the Division received a plan from Mountain Coal concerning the special condition. The following is an analysis of that plan.

ANALYSIS

Mountain Coal has proposed drilling the well in Township 18 South, Range 6 East, Section 3 near UGMS DH-5 in Straight Canyon. The proposal includes a schematic for the well design and a list of parameters to be monitored on a quarterly basis.

After reviewing Figure 7-2 (Location of Seeps and Springs and the Relationship of the Blackhawk-Star Point Aquifer to the Proposed Mine Workings) and Figure 3-6 (Mine Sequence Map), the location of the proposed hole does not seem optimal. The reason being that with groundwater flowing south and mining moving west the proposed well location would not yield data associated with mining until at least 1996. In addition, it is unlikely that this point would detect changes associated with mining to the east (unless the cone of depression was extremely large).

The well design shows the annular space above the sand/gravel pack to be a bentonite seal with bentonite grout above that. The difference between the two is unclear, as is the method of installation. Furthermore, and maybe more fundamentally, there is no discussion of the methods to be utilized for drilling or well completion.

Mountain Coal's monitoring plan for this well consists of TDS, Ph, total

Iron, total Manganese, water level, and Phosphate. Samples would be taken and analyzed on a quarterly basis. This does comply with the minimum requirements of R614-301-731.200, but is much less detailed than the existing ground water baseline, operational and post-mining water quality parameter list for Trail Mountain #9 Mine.

RECOMMENDATIONS

1) The location of the monitoring well should be changed. An area that would receive more direct flow from mining in the next five years would be more useful. A point north of Route 29 and outside the Co-Op Development property in Township 18 South, Range 6 East, Section 11 should be considered. The Division may want to consider the location originally proposed for this well as a site for an additional well that could be constructed two years prior to mining at the western boundary of the lease.

2) Further clarification is needed in regard to drilling and well completion. Some questions are: what is the drilling fluid (i.e., water, air; a non-petroleum based fluid should be used)?; what is the difference in the bentonite seal and bentonite grout shown in the plan?; how will grout be installed (i.e., slurried, tremied)? The plan should clearly outline the materials, methods, and procedures used to drill and complete the well.

3) Monitoring of this well should follow the frequency outlined in the plan but should consist of the existing ground water baseline, operational and post-mining water quality parameter list for Trail Mountain #9 Mine.