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State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340

Castle Gate

July 6, 1989

Mr. James W. Buck
Manager Environmental Services
Amax Coal Industries, Inc.
251 North Illinois Street
P. O. Box 6106
Indianapolis, IN 46206

Dear Mr. Buck:

Re: Denial, Amendment, Slurry Injection Wells, Castle Gate Coal Company, Castle Gate Mine, ACT/007/004-88H, Folder #2, Carbon County, Utah

On April 6, 1989, the Division issued a conditional approval for the above-referenced amendment. The conditions required submittal of certain commitments and the requirement for some additional sampling of slurry materials.

On June 20, 1989, a response to the conditions from Castle Gate Coal Company (CGCC) was received. CGCC declined to address the second part of Condition #1, dealing with requirements for sampling of slurry materials. Rule UMC 817.48 requires that all waste or spoil material which may be detrimental to water quality be identified and treated as necessary. CGCC has not met the requirements of this rule. Therefore, the amendment is denied approval at this time and the injection wells may not be used until the requirements of Condition #1 are adequately addressed.

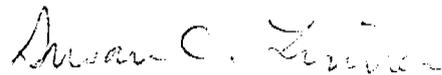
James Leatherwood, Reclamation Soils Specialist of the Division, has contacted the Division Environmental Health, Bureau of Water Pollution Control, to determine their requirements for sampling return flow of the slurry injection system. The attached technical review memo outlines a sampling program which could be done at the recovery wellhead. This would satisfy the requirements of UMC 817.48 and could be substituted for the original requirements for sampling of slurry materials under Condition #1.

Page 2
Denial Amendment
Slurry Injection Wells
Castle Gate Coal Company

If you wish to pursue an approval for the slurry injection system, please submit the additional sampling schedule such that it can be directly inserted into the Mining and Reclamation Plan for the Castle Gate Mine.

Please contact me or James Leatherwood if you need clarification.

Sincerely,



Susan C. Linner
Reclamation Biologist/
Permit Supervisor

c1
cc: B. Evans, Castle Gate Mine
L. Braxton
J. Helfrich
J. Leatherwood
D. Darby
BT45/261-262



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June 29, 1989

TO: Susan Linner, Permit Supervisor
FROM: *scf for* James Leatherwood, Reclamation Soils Scientist
RE: Condition 1, Amendment, Slurry Injection Wells, Castle Gate Coal Company, Castle Gate Mine, ACT/007/004-88H, Folder #2, Carbon County, Utah

SUMMARY

The Slurry Injection Well Amendment, Condition 1 response, received June 20, 1989, has been reviewed. The response fails to meet the intent of Condition 1, which is to characterize the physio-chemical effects of the injected slurry materials to the groundwater quality. Final approval is not recommended at this time. The operator must address and commit to the identification of the wasted slurry materials as defined under the RECOMMENDATION portion of this document.

ANALYSIS

The intent of Condition 1 is to characterize the physio-chemical effects of the wasted injected slurry materials to the groundwater quality. The analysis of the parameters defined in section 3.4-4(1) of the MRP would define this characterization. Another option, preferred by the operator, is to sample an aliquot of the groundwater during return flow operations. The groundwater will have had sufficient time to equilibrate with the wasted slurry. Return flow aliquot analysis would then be used to characterize the slurry materials physio-chemical effect to the groundwater system.

The analysis required by the Bureau of Water Pollution Control was evaluated to insure that proper analysis and sampling would be achieved. The approved permit by the Bureau of Water Pollution Control states that the return flow volume will be conducted on at least a quarterly basis and that samples will be taken for quality analysis during periods of pumping. The approved permit does not define the necessary constituents to be analyzed for the return flow samples only for the injection fluid. The injection

Page 2
Condition 1, Amendment
Castle Gate Coal Company
Castle Gate Mine
ACT/007/004-88H

fluid list of analysis parameters were reviewed against parameters currently required by the Division to characterize earthen materials. The list did not include sodium adsorption ratio, boron, or acid-base potential. In lieu of a water extract being sampled instead of a solid material (slurry solids) alkalinity would appropriately replace the acid-base potential analysis. The given approved injection fluid analysis in addition to sodium adsorption ratio, alkalinity, and boron would adequately reflect the ground water waste slurry chemical equilibrium conditions and would be amenable to the Divisions intent of Condition 1.

RECOMMENDATION

Final approval may be granted given a written commitment by the operator to sample the return flow from the recovery wellhead during periods of pumping for those parameters defined for the approved injection fluid analysis in addition to sodium adsorption ratio, boron, and alkalinity, whereby results from said analysis are reported to the Division in conjunction with the Bureau of Water Pollution Control reporting requirements.

cc. D. Darby
M. Deweese
BT51/86-87