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STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

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June 10, 1982

Mr. Rob Wiley
Environmental Engineer
Price River Coal company
P. O. Box 629
Helper, Utah 84526

RE: Crandall Canyon Sedimentation
Pond Modification
ACT/007/007 *4*
Carbon County, Utah

Dear Rob:

The Division of Oil, Gas and Mining has completed the review of Price River Coal Company's (PRCC) request to modify the size and location of the sedimentation pond in Crandall Canyon.

Due to the use of the Hilfiker retaining wall as both an embankment for the Crandall Creek Stream channel and for the sedimentation pond, a number of concerns have arisen between both DOGM and the State Engineer's Office.

The following should be addressed by PRCC to further expedite this review and permit approval.

1. It is understood that an operational flow of approximately 10,000 gpd drill and muck and 43,200 gpd ground water will occur in the modified pond. Therefore, the maximum 53,000 cf capacity of the pond will be reached within seven days, at which time a discharge from the emergency spillway could be anticipated. This is unacceptable to DOGM's permit requirements as UMC 817.46(i) requires that a combination of principle and emergency spillways be provided to safely discharge the peak flow of the 25-year, 24-hour event.

The capacity of the 10-year, 24-hour event must be provided for in all cases irregardless of operational flow. DOGM recommends that PRCC modify the current emergency spillway by adding a principle spillway inlet or utilize some other appropriate means for dewatering operational flow after an appropriate detention time has occurred. If a dewatering device or principle spillway inlet is added to the emergency riser pipe then the capacity and appropriate detention of the 10-year, 24-hour event must be provided for above the level of dewatering.

2. UMC 817.46(1) requires the top width of the pond embankment to be "not less than the quotient H and 35/5 feet. The sedimentation pond embankment varies from 17.5 feet to 8 feet width although with the 16 foot height of the wall, the required width is 10.2 feet.

UMC 817.46(m) requires that the combined upstream and downstream slope of the sediment pond embankment equal 1v:5h. Plan Exhibit NP-2 indicates that the upstream slope of the pond will be approximately 0.5:1. This slope is not satisfactory for compacted natural materials (refer to State Engineer's letter).

The Hilfiker retaining wall has proven stable under a variety of "baseline" conditions (thesis' by L. M. Peterson 1980, and J. A. Bishop 1979). However, the use of a reinforced earth wall as an embankment for a sedimentation pond has not been documented. Therefore, a provision must be made to increase the combined upstream and downstream slope ratio to 1v:5h or PRCC must demonstrate that the embankment is designed and constructed to insure a minimum 1.5 static safety factor and is certifiable by a registered professional engineer.

3. DOGM and the State Engineer agree that it is necessary to line the pond with an impervious material to prevent potential seepage into the fill material. The State Engineer has recommended that several small diameter observation wells be established in the embankment to monitor the occurrence of seepage. DOGM agrees that such monitoring will further ensure the long-term stability of the retaining wall.

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Enclosed is a copy of the State Engineer's letter regarding this modification. It has been incorporated into our review.

Please contact me if you have further questions.

Sincerely,



SALLY KEFER
RECLAMATION HYDROLOGIST

Enclosures

cc: Allen Klein, OSM, Denver
Bob Morgan, Dam Safety
Steve McNeal, Department of Health

SK/btb