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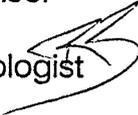
# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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May 23, 1991

**TO:** Daron Haddock, Permit Supervisor

**FROM:** Rick P. Summers, Senior Hydrologist 

**RE:** Review Emergency Spillway Designs, Amendment 007/011-91A, (Received May 8, 1991), U.S. Fuel Co., Hiawatha Mine, ACT/007/011, Folder #2, Carbon County, Utah

## Summary:

The original response to NOV N91-39-1-1, 1 of 4, was received by the Division on March 26, 1991. That proposal was reviewed by myself on April 4, 1991 and found to be deficient. That proposal was to create a single non-erodible chute spillway by removing the tops of the existing culvert spillways. That proposal was rejected due to freeboard problems and the applicant was requested to install open channel spillways to be used in conjunction with the existing primary spillways. The response to the Division request was received on May 8, 1991. The review was delayed in order to field tour the site conditions. The review of this material was based upon the previously approved hydrology for the site provided with this submittal. Design peak flows were not verified for this review.

I visited the site with Bob Eccli and Steve Demczak on May 22, 1991. The following review is a summary of the review and field tour.

### **Pond D008:**

The proposed spillway location as depicted on the submittal map was reviewed in the field and it was agreed that the spillway should be slightly relocated. The proposed location necessitated a sharp turn at the bottom of the spillway in order to discharge the flow into an existing diversion. The new spillway location is approximately 60 ft. toward the primary spillway. This location will allow a small surge basin to be constructed at the toe of the spillway. The location and submitted designs will be approvable if the following information is submitted:

1. A design (including diversion cross-section) for the existing diversion to be used to carry the discharge from the toe of the spillway to the existing creek must be submitted demonstrating the stable passage of the 25 yr. - 6 hr. precipitation event. This will require that the existing diversion slope be surveyed and used in the design calculation.
2. Figure 2 should be revised to accurately depict the location of the spillway and diversion to the creek.
3. A splash basin should be proposed for the spillway system and depicted on Figure 2.
4. An appropriate filter blanket (material or properly sized gravel) should be proposed for the spillway and depicted on the cross-section of the spillway shown on the design calculation page. The depth of the blanket and the riprap should be specified.
5. The location maps should be certified and the designs should contain a certification statement. The applicant must commit to submitting certified as-built designs (as changes dictate) and constructed drawings prior to July 1, 1991.

**Pond D003:**

The conditions at Pond D003 make the installation of a traditional open channel riprapped spillway difficult. The outslope of the pond is very steep at the existing primary spillway location. It would be unprudent to attempt to install a rock lined spillway in this location. The proposed location (see Figure 1) discharges the flow onto a heavily vegetated low slope area, but does not discreetly convey the drainage to the creek. The options available to this pond situation are: 1) install an additional CMP spillway adjacent to the existing primary spillway or, 2) install the open channel spillway in the proposed location with the addition of a water spreader type or catch basin energy dissipator. The energy dissipator should provide for non-erosive velocities and serve to provide a low depth, broad flow at the discharge point. Suggestions would include the design of a dissipator with a broad weir at the outlet (routine calculation) to provide the large wetted perimeter required to reduce the flow velocities. In addition, items #2 - 5 must also be addressed for this pond.

cc: S. Falvey  
S. Demczak