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# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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December 11, 1991

TO: Pamela Grubaugh-Littig, Permit Supervisor

FROM: Thomas Munson, Senior Reclamation Hydrologist 

RE: Permit Conditions, Five-Year Renewal, PacifiCorp Electric Operations, Des-Bee-Dove Mine, ACT/015/017, Folder #2, Emery County, Utah

## Synopsis

The division received a response to the permit conditions on August 15, 1991, and this memo reviews the adequacy of the operator's response. This has taken time because of the test plot meetings and finalization of future plans regarding the haul road. See Pamela Grubaugh-Littig's memo entitled "Outline of Meeting and Field Visit for the Des-Bee-Dove Haul Road Reclamation Study" dated December 4, 1991. A deadline of January 31, 1992 was mentioned in this memo to have a map submitted delineating the study area and a narrative describing the history and proposal of this erosion control study.

## Analysis

Review of Conditions:

### **Condition R614-301-728 (1) (TM)**

A memo dated August 14, 1991 was sent to the Division regarding a detailed sampling plan for the Des-Bee-Dove Test Plots. The basic methodologies in this plan are approved with a recommendation for isolation of the test plots using 2" X 10" boards to separate runoff by treatment. The water leaving the plots could conceivably be collected in water troughs and analyzed after each storm, because the depth of water leaving the plots would not be sufficient enough to operate a single-stage sampler, therefore, making single stage samplers undesirable.

The operator will be required, in the new proposal submitted on January 31, 1992, to redescribe the set-up of plots and the modification of the water sampling scheme to eliminate single-stage samplers and incorporate a total runoff collection system to ascertain runoff amount and quality. If refinements of the methodologies proposed in the January 31, 1992 submittal need to be discussed between the Division and the operator, please feel free to contact the Division. The use of a recording rain gauge is essential to determine rainfall/runoff relationships and is considered essential to the study.

**Condition R614-301-731 (1) (TM)**

Pages 4-88.1 and 4-89 include a discussion of using a two-inch blanket of mulch with vexar netting and contour furrows as a erosion control treatment. The operator needs to provide a runoff calculation to verify the adequacy of this design based on sub-watershed size. The ditch designs using a generic size and shape and a volume has been given, but no confirmation of the ditch's ability to handle and treat flows was given, based on site specific sub-watersheds and ditch locations. No BTCA plan has been submitted, as a separate document, as requested by the Division.

**Condition R614-301-731.121 (1) (TM)**

1. Keyways placed in the structures must be adequate to pass the 10 year-6 hour peak flow. A verification of this can be demonstrated by using the weir equation if the shape of the opening represents a side contracted weir or V-notch weir.
2. No calculations have been presented for the capacity of contour furrows to handle the 10 year-24 hour storm volume on a per-watershed area basis. This can be considered a generic calculation applicable to all reclaimed areas but would dictate frequency and location of contour furrows as a BTCA measure during reclamation shown on the appropriate plates.
3. This condition is addressed as part of the study plan for the Reclamation Test Plots.

**Condition R614-301-742.220 (1) (TM)**

1. This is adequately addressed.
2. This is adequately addressed.
3. The operator has not provided a discussion of how sediment levels are monitored in the pond and the frequency of this monitoring.
4. This response does not meet the requirements of the rules based on the explanation given. Grouted riprap is capable of withstanding a certain velocity based on installation method and materials used. A proof of this is required to determine stability of the materials used and spillway design.

**Condition R614-301-742.300 (1) (TM)**

Figure 6 does not meet the certification requirements of the rules and lacks the specificity to show culverts or ditches by number corresponding to the text. Plate 3-8 must show all hydrologic structures numbered corresponding to calculations in the text. There are ditches and culverts shown on Plate 3-8 not identified by number in the text. Please correct this Plate and make the appropriate changes to identify all hydrologic structures in the text.

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