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PACIFIC POWER • UTAH POWER

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*Copy Tom (all)
File per 10/15/018
#2*



March 6, 1991

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DIVISION OF
OIL, GAS & MINING

Ms. Pamela Grubaugh-Littig
Permit Supervisor
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

RE: DEFICIENCY RESPONSE, DRAINAGE AMENDMENT, PACIFICORP ELECTRIC OPERATIONS, DEER CREEK MINE, ACT/015/018

Dear Pamela:

I am enclosing the following information in response to the Division's February 21, 1991 deficiency letter. For clarity, each deficiency is written followed by PacifiCorp's response.

- 1) **INLET AND OUTLET PROTECTION ON BOTH CULVERTS BASED ON EXPECTED HEADWATER AND OUTLET PIPE FLOW VELOCITIES.**

Amended pages 24.2, 24.4 and 24.5 to replace the pages of the original amendment submittal (Appendix IX).

- 2) **A DRAINAGE MAP OF APPROPRIATE SCALE MUST BE PROVIDED OR REFERENCED TO SHOWING TOTAL DRAINAGE AREA. PLEASE NOTE: THAT THE 6' CULVERT IS JUST DOWNSTREAM OF THE SEDIMENT POND OUTLET AND SUBSEQUENTLY MUST PASS THE EXPECTED PEAK FLOW FROM THE SEDIMENT POND. PLEASE VERIFY THIS IN YOUR CALCULATIONS.**

Refer to Figure 6 of Appendix IX (1" = 2000') along with the original submittal of Figure 3 (1" = 100') for the total drainage area.

Flow calculations for the sediment pond outlet were not included because the pond is sized for a 10 year/24 hour event (2.25 inches). Discharge from the pond would not occur during the smaller 2 year/6 hour or 10 year/6 hour events.

- 3) **IT WAS VERIFIED IN THE FIELD THAT THE 5'9" X 8'2" ARCH CULVERT HAS ONLY 4 FEET OF REMAINING HEAD DUE TO SEDIMENT AND BEDLOAD DEPOSITION. PLEASE NOTE THIS IN**

YOUR CAPACITY CALCULATIONS.

The calculation of flow capacity will be done during inspections due to potential capacity change (increase or decrease).

- 4) **ALL CULVERT LENGTHS AND SLOPES MUST BE INCLUDED.**

Amended pages 24.2, 24.4 and 24.5 (Appendix IX).

- 5) **REFERENCE TO CHANNEL RECLAMATION FOR THESE CULVERTS, IF APPROPRIATE, MUST BE DOCUMENTED.**

All undisturbed culvert removal is referenced in PAP on page 4-32; removal of disturbed culverts on page 4-4; and revegetation of all disturbed areas on page 4-2. All culvert removals and reclamation are included in the reclamation costs of the permit.

- 6) **IF TRASH RACKS ARE NOT INSTALLED THEN DISCUSSION REGARDING THE LACK OF TRASH RACKS WOULD BE CONSIDERED ESSENTIAL.**

Amended pages 24.2, 24.4 and 24.5 (Appendix IX).

Please note that calculations for the 5'9" x 8'2" arch culvert are for the designed 10 year/6 hour event, not a 2 year/6 hour as referenced in the deficiency letter by your technical staff member. The referenced 2 year/24 hour calculation is only for the 6' culvert. If you have any questions regarding this submittal, please call Guy Davis at 653-2312 or myself at 220-4584.

Sincerely,

Guy Davis for

J. Blake Webster
Permitting Administrator

cc: Amendment File

APPENDIX 5 SEDIMENT POND OUTSLOPE DRAINAGE AREA

1. Area = .22 Acres (See Figure 3)
2. Time of Concentration
 - a. Hydrologic Length 125 ft.
 - b. Average Slope 30%
 - c. Velocity 5.0 fps (Exhibit A)
 - d. Time of Concentration .42 Min. = .007 Hrs.

3. Curve Number

CN = 79 (Exhibit B)

Natural Slope, Range, Fair, Group C

4. Design Flow

.06 CFS (See Table 5)

2 Yr. 6 Hr. Storm Event (R614-301-742.333)

5. Culvert

6'0" CMP w/headwater depth of 1.0.

Capacity = 200 CFS (Figure 5)

Length = 40'

Slope of Culvert = 10%

Trash Rack - None (Due to oversizing of culvert
and lack of facilities downstream.)

6. Erosion Protection

Culvert Inlet

8" Concrete Headwall - Culvert and Left Side

Right Side - 12" to 18" Rip-rap

12" to 18" Rock Rip-rap in Front of

Culvert

Culvert Outlet

12" to 18" Rip-rap

Revised 3/6/91
24.2

APPENDIX 6 CULVERT AT C1 SUPPORT 18 DRAINAGE AREA

1. Area = .56 Acres (See Figure 3)
2. Time of Concentration
 - a. Hydrologic Length 375 ft.
 - b. Average Slope 40%
 - c. Velocity 6.5 fps (Exhibit A)
 - d. Time of Concentration .96 Min. = .016 Hrs.
3. Curve Number
CN = 79 (Exhibit B)
Natural Slope, Range, Fair, Group C
4. Design Flow
.52 CFS (See Table 6)
10 Yr. 6 Hr. Storm Event (R614-301-742.333)
5. Culvert
 - a. 8'2" x 5'9" CMP Arched Culvert
 - b. Flow Capacity = 936.16 CFS
(See Calculations in Appendix VII)
 - c. Length = 50'
 - d. Slope of Culvert = 3%
 - e. Trash Rack - None (Due to lack of facilities downstream.)
 - f. Because the following Drainage Areas will flow through this culvert it must be capable of passing the runoff flow of a 10 Yr. 6 Hr. Storm Event from them also.
 1. Sediment Pond Outslope .22 CFS (Table 7)
 2. Deer Creek Area IV 73.708 (Table 8)

3.	Deer Drainage Area V	120.606	(Table 9)
4.	Elk Canyon Area VI	85.78	(Table 10)
5.	Drainage Area VIIA	25.452	(Table 11)
6.	Drainage Area VIIB	33.288	(Table 12)

Tables 8 through 12 were calculated using the information for these areas found in this Appendix (Appendix IX).

Drainage Areas were determined by referring to Figure 6.

Total Peak Flow of all areas draining to culvert C1 Support 18 is 339.574 CFS.

6. Erosion Protection

Culvert Inlet

8" Concrete Collar Around Inlet

12" to 18" Rock Rip-rap

Culvert Outlet

12" to 18" Rock Rip-rap