



Coastal
The Energy People

KEN PAYNE
VICE PRESIDENT &
GENERAL MANAGER
SOUTHERN UTAH FUEL COMPANY

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DIVISION OF
OIL, GAS & MINING

November 4, 1992

Mr. Darron R. Haddock
Permit Supervisor
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Mr. Haddock:

Enclosed are fourteen copies of update materials to cover a plan deficiency discovered in a recent inspection by Paul Baker. These materials revise the text of the plan to reflect the existing concrete-lined ditches for the disturbed area drainage at the Waste Rock Disposal Site. These ditches were originally approved in a letter from the Division dated December 27, 1988.

Please replace page 2-4 in section 2 of Volume 3 and add the two calculation pages in Appendix III of Volume 3 behind page 5/5 of the disturbed drainage calculations. This will update the text of the Waste Rock M&RP to reflect the as-built condition of the ditches.

Sincerely,
SOUTHERN UTAH FUEL COMPANY

Ken Payne
Vice President and General Manager

KP/WKS:jad

Enclosures

Southern Utah Fuel Company

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The only impact on the surface water hydrology will be that associated with collection of the water from the disturbed area and routing of this water through the sedimentation pond and the routing of water from the undisturbed area around the site. No perennial or intermittent streams pass through the area. Flow is limited to storm and/or snow melt runoff.

2.4.1 Diversion Ditches

Sergent, Hauskins & Beckwith's work on hydrology of the area was of an investigative nature. Subsequent designs of diversions used actual areas and runoff curve numbers that are believed to be more representative of the area. These calculations are included in Appendix III.

Diversion ditches are provided to direct runoff around the disturbed areas and sediment pond. Ditches will convey runoff from the disposal area to the sediment pond. These diversion ditches are shown on Map 2.

The maximum flow resulting from a 10 year, 24 hour storm was used as the design flow for each of the diversions. Ditches No. 1 and 2 conveying runoff to the sediment pond shall be trapezoidal shaped in cross-section. Both ditches have a bottom width of 2 feet 12 inches and side slopes of 1:1 and are a nominal 16 inches deep. These two ditches are both concrete lined.

~~For slopes of 5% or less, the depth is one foot. For slopes more than 5% but less than 8%, the depth is 0.8 feet. The depth is 0.7 feet for slopes greater than 8% but less than 20%. This design will carry the 4.42 cfs of runoff expected from the disturbed area with 0.3 feet of freeboard. Rip rap with a D_{50} of 5 inches is used for ditches with a slope greater than 4%. The rip rap layer is 12 inches thick underlain by a 6 inch filter blanket of 3/4 inch road base. Design calculations are included in Appendix III.~~

Undisturbed drainage is routed around the disposal site and sediment pond using Diversions No. 1, 2, and 3 as shown on Map 2. The drainage areas are shown on Map 3. Diversion No. 1 utilizes an existing culvert to convey part of the drainage area across the county road and onto an existing flood plain. This vegetated

WKS
11/4/94

Trapezoidal Channel Analysis & Design
Open Channel - Uniform flow

Worksheet Name: Waste Rock 1 & 2

Description: Update Disturbed Ditches 1 & 2 Concrete

Solve For Depth

Given Constant Data;

Bottom Width..... 1.00
Z-Left..... 1.00
Z-Right..... 1.00
Mannings 'n'..... 0.013
Channel Discharge.. 4.42

<u>Variable Input Data</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Increment By</u>
Channel Slope	0.0400	0.2000	0.0100

Existing ditches are 16" deep. Need to check
free board. Table on page 2 shows ditches are adequate.

DK Sorensen



Bottom Width ft	Z-Left (H:V)	Z-Right (H:V)	Mannings 'n'	VARIABLE COMPUTED		COMPUTED	
				Channel Slope ft/ft	Channel Depth ft	Channel Discharge cfs	Velocity fps
1.00	1.00	1.00	0.013	0.0400	0.36	4.42	8.93
1.00	1.00	1.00	0.013	0.0500	0.34	4.42	9.67
1.00	1.00	1.00	0.013	0.0600	0.32	4.42	10.32
1.00	1.00	1.00	0.013	0.0700	0.31	4.42	10.90
1.00	1.00	1.00	0.013	0.0800	0.30	4.42	11.42
1.00	1.00	1.00	0.013	0.0900	0.29	4.42	11.90
1.00	1.00	1.00	0.013	0.1000	0.28	4.42	12.35
1.00	1.00	1.00	0.013	0.1100	0.27	4.42	12.77
1.00	1.00	1.00	0.013	0.1200	0.27	4.42	13.17
1.00	1.00	1.00	0.013	0.1300	0.26	4.42	13.54
1.00	1.00	1.00	0.013	0.1400	0.25	4.42	13.90
1.00	1.00	1.00	0.013	0.1500	0.25	4.42	14.23
1.00	1.00	1.00	0.013	0.1600	0.24	4.42	14.56
1.00	1.00	1.00	0.013	0.1700	0.24	4.42	14.87
1.00	1.00	1.00	0.013	0.1800	0.24	4.42	15.16
1.00	1.00	1.00	0.013	0.1900	0.23	4.42	15.45
1.00	1.00	1.00	0.013	0.2000	0.23	4.42	15.73