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June 15, 1989

Mr. Richard Smith
Utah Department of Natural Resources
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

RECEIVED
JUN 16 1989
DIVISION OF
OIL, GAS & MINING

Re: Add Culvert Downspout at Ditch 6C,
Revised Location and Design for Ditch 7G, and
Revised Design Data for Ditches Surrounding Refuse Pile

Dear Mr. Smith:

Please find enclosed calculations and revised Map 42, Map B, Sheet 2 of 3, showing the location and design details for a new culvert 6B at the south end of ditch 6C (formerly called ditch 6B). This culvert needs to be added to prevent erosion from occurring during runoff events. The culvert will consist of a 24 inch diameter inlet section 20 feet long, and an 18 inch diameter culvert from there to the drainage channel.

Construction of culvert 6B will be completed by July 19, 1989, as stated in a memorandum from Mr. Bob Lauman to Mr. Bill Malencik and Mr. Henry Sauer dated May 19, 1989.

Also find enclosed calculations for ditch 7G and culvert 7F, which replace ditch 7E at the west side of the refuse pile. This new ditch is consistent with the overall refuse pile plan as presented in the MRP. The refuse pile is expanding westward, which requires the new ditch and culvert. Copies of Map 42, Map A, Sheet 2 of 3, and Map 42, Map B, Sheet 2 of 3, are enclosed showing the location of ditch 7G and culvert 7F and design details for both. Culvert 7F will consist of a 12 inch pipe running to ditch 7H.

Also find enclosed calculations for ditches 6C (formerly 6B), 8, 16, 32, 33, and 76, using the 100-year 6-hour storm. As mentioned previously, ditch 7E is being replaced with ditch 7G. These calculations have been made after much consultation with Tom Munson as to design criteria and methodology. It is our understanding that the criteria and methodology used are correct, even though the peak flows and velocities differ from those included in a memorandum from Tom Munson to yourself dated May 17, 1989. Tom's calculations were made using the existing ditches' configurations.

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Tom's peak flows are generally higher than ours. Tom indicated that ditch 6B (now 6C) has potentially erosive flows in its steeper reaches, but did not recommend rip rap. Since our flows and velocities are lower, we anticipate no major erosion. We will monitor the steep areas and will initiate erosion protection if a problem arises.

Tom's analysis of ditches 8, 16, 32, 33, and 76 showed that the existing ditches were "within the Division's guidelines for erosion protection and conveyance of the 100-year 6-hour storm." Since our peak flows and velocities are lower, the existing ditch configurations are more than adequate to carry the flows.

Tom analyzed all of the existing culverts associated with these ditches and found them to "be well in excess of design requirements... with the 100-year, 6-hour storm criteria." Since our calculations show less flow than Tom's, the culverts do have excess capacities.

Tables 76A and 76B have been modified to reflect the changes discussed herein and are being sent under separate cover by Hansen, Allen and Luce, Inc.

The section of ditch 7E which has been under a variance issued by the Division on January 8, 1986, has been noted on Map 42, Map A, Sheet 2 of 3, as requested by Tom Munson.

Three copies of the calculations and maps are enclosed. When the Division is satisfied that all is well, additional copies will be provided for distribution to other agencies.

Sincerely,



Ben Grimes
Sr. Environmental Engineer

/kam

Enclosures

Chrono: BG890602

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NOV File