



# United States Department of the Interior

OFFICE OF SURFACE MINING  
RECLAMATION AND ENFORCEMENT  
BROOKS TOWERS  
1020 15TH STREET  
DENVER, COLORADO 80202



In Reply Refer To:

November 27, 1991

TO: Steve Rathbun, Chief  
Inspection and Enforcement Branch

FROM: Karen Jass, Mining Engineer *KJass*  
Engineering Support Section

SUBJECT: Blazon #1 Mine, ACT/007/021  
Backfilling and Grading of Highwall Area

RECEIVED

FEB 05 1992

DIVISION OF  
OIL GAS & MINING

As a follow up to the work requests from the State of Utah and the Albuquerque Field Office, I have determined the amount of the remaining bond which will be required to backfill and revegetate the remaining highwall area to the specifications given in the final permit approval (dated 10/10/85). I believe this is the most recently approved version of NAE's approved permit.

Using very simple surveying measures to try to determine a more realistic land layout, the proposed surface from the approved reclamation plan was overlain with the resultant survey profile. The difference between the two surfaces amounted to an area of material of two cross-sectional areas. The distance between each of the cross sectional-areas was utilized to get an average volume of material, the average end method. The volumes from each of these areas were totalled to give an overall volume of material which would be necessary to backfill the highwall area to the proposed post mining slopes. A professional survey was not performed, thus all measurements are approximate.

The backfill material was assumed to be scavenged from the roadbed surface and pad area, then pushed an average of approximately 800 feet using a D9 dozer with a U-blade. The final slope angles for the additional material were those specified in the approved reclamation plan. The upper areas of the portal area beginning at the upper edge of the highwall were projected down at approximately a 2H:1V slope (26.5°), where length allowed. Over the point where the hill currently changes slope, the lower area of the hill were sloped back to 1.6H:1V (32°), and in most cases this extended the toe further out. The projected volume which would be necessary to backfill the hill to the projected slopes amounted to approximately 11,122 cubic yards. The cost for moving this material is approximately \$6,500.

Office of Surface Mining  
Reclamation and Enforcement

Department Of Interior

KAREN F. JASS  
Mining Engineer

Denver, CO 80202  
(303) 844-3232

Brooks Towers  
1020-15th Street

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Using very simple surveying measures to try to determine a more realistic land layout, the proposed surface from the approved reclamation plan was overlain with the resultant survey profile. The difference between the two surfaces amounted to an area of material of two cross-sectional areas. The distance between each of the cross sectional-areas was utilized to get an average volume of material, the average end method. The volumes from each of these areas were totalled to give an overall volume of material which would be necessary to backfill the highwall area to the proposed post mining slopes. A professional survey was not performed, thus all measurements are approximate.

The backfill material was assumed to be scavenged from the roadbed surface and pad area, then pushed an average of approximately 800 feet using a D9 dozer with a U-blade. The final slope angles for the additional material were those specified in the approved reclamation plan. The upper areas of the portal area beginning at the upper edge of the highwall were projected down at approximately a 2H:1V slope (26.5°), where length allowed. Over the point where the hill currently changes slope, the lower area of the hill were sloped back to 1.6H:1V (32°), and in most cases this extended the toe further out. The projected volume which would be necessary to backfill the hill to the projected slopes amounted to approximately 11,122 cubic yards. The cost for moving this material is approximately \$6,500.

Revegetation, mulching, fertilizer, and scarifying is estimated to cost \$3,500/acre, based on the State's Reclamation Status memorandum of August 15, 1989. The total cost for the entire revegetating process of the highwall and redisturbed road and pad areas is assumed to be the total acreage referenced in the State's estimate, a total of 2.75 acres. The entire revegetation cost would amount to about \$9,600.

The total cost for the highwall backfill and revegetation, using the OSM's Bond Cost Handbook, would amount to about \$25,000. This estimate includes contingencies, mobilization, and other miscellaneous fees. The remainder of the \$38,400 bond currently being (\$13,400) held can be applied to further reclamation within this permitted area.

Should you have any questions regarding this matter, contact Karen Jass at FTS 564-3232.