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United States Department of the Interior
OFFICE OF SURFACE MINING
Reclamation and Enforcement
BROOKS TOWERS
1020 15TH STREET
DENVER, COLORADO 80202

OFFICE OF THE REGIONAL DIRECTOR

17 JUL 1980

RECEIVED
JUL 21 1980DIVISION OF
OIL, GAS & MINING

Mr. James Smith
Coordinator of Mined Land Development
Department of Natural Resources
Division of Oil, Gas, and Mining
1588 West North Temple
Salt Lake City, Utah 84116

Dear Mr. Smith:

My staff has reviewed the revised sediment pond plans for Kaiser Steel Corporation's Sunnyside Mine. The plans which deal with the coarse refuse pile, the west berm outslope, and the south berm outslope, were submitted in correspondence dated April 15, 1980 through Mr. Suchoski of your staff. All pond designs that were submitted were incorrectly calculated. Before this office can approve these plans, Kaiser Steel must make the following corrections:

1) The sediment storage volume was estimated through use of the Universal Soil Loss Equation (USLE). Several values were incorrectly estimated. Length - slope factors (LS) are very low (i.e., a value of 0.49 was used for the sedimentation pond associated with the coarse refuse pile. Our calculations use a value of 17.5 (2,000 feet at a 16 percent slope)). The cropping factor (C) is high (i.e., value was estimated to be 0.70. Our calculations use a value of 0.45 or 0.20). Also, the plan uses an erosion control practice (P) factor of 0.65 or 0.80. Kaiser Steel must justify use of this factor by documenting on-site erosion control practices.

We would suggest that the modified universal soil loss equation (MUSLE) maybe more applicable to your area than the USLE. Also, the use of a sediment delivery ratio is appropriate and should be used.

2) The spillway design was calculated incorrectly. Peak runoff is not determined by taking the average flow over the design period. Correct procedures for determining the peak discharge should incorporate the use of a synthetic hydrograph.

3) Detention time was calculated using the average inflow rate and the combined sediment and runoff storage volume. Theoretical detention time should be calculated using the peak inflow rate and only the runoff storage volume. Kaiser Steel should re-calculate the detention time using the mentioned corrections. Also, the detention must be sufficient to ensure that the effluent limits will be met. Monitoring the effluent will not be sufficient to ensure compliance.

4) It is suggested that a staff gage be placed in each sedimentation pond to determine when sediment cleanout is needed.

If you have any questions in regard to this review, please contact John Nadolski or Nike Rovero of my staff (303-837-3773).

Sincerely,


DONALD A. CRANE