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STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

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November 5, 1984

CERTIFIED RETURN RECEIPT REQUESTED  
(P402 457 061)

Mr. Douglas C. Pearce  
Mine Engineer  
Kaiser Steel Corporation  
P. O. Box D  
Sunnyside, Utah 84539

Dear Mr. Pearce:

RE: Additional Technical Deficiencies and Request for Consolidated Response, Kaiser Steel Corporation, Sunnyside Mines, ACT/007/007, #2, Carbon County, Utah

The Division has reviewed Kaiser Steel Corporation's draft responses of August 31, 1984 and September 12, 1984 to the deficiency letter sent to you on August 15, 1984. Review of the consolidated Sunnyside Mine Mining and Reclamation Plan by the technical staff has identified additional deficiencies. These deficiencies were set out in the meeting of October 3, 1984 between representatives of the Division and Kaiser Steel Corporation and are again reiterated in the enclosed deficiency document. This letter hereby establishes deadlines for the submittal of all outstanding information.

In order for the Division to complete a Final Technical Analysis, Kaiser must address the enclosed deficiencies as well as those outlined in our letter of August 15, 1984. Your response must be submitted in a final consolidated form (14 copies) as soon as possible, but in no case later than within three weeks from receipt of this letter. Failure to comply with this requirement will force the Division to seek relief before the Board of Oil, Gas and Mining. It is mandatory that all parties act as expediently as possible in the repermitting of this mine, as schedules have continuously been delayed in the recent past.

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Mr. Douglas C. Pearce  
ACT/007/007  
November 5, 1984

Should you have any questions, please contact the Division.

Sincerely,



Ronald W. Daniels  
Acting Administrator  
Mineral Resource Development  
and Reclamation Program

SC/btb

Enclosure

cc: Allen Klein  
Lou Hamm  
Mary Boucek  
Steve Cox  
Pam Grubaugh-Littig  
EV Hooper  
Tom Munson  
Rick Smith  
John Whitehead

89740-21 & 22

## ADDITIONAL TECHNICAL DEFICIENCIES

Kaiser Steel Corporation  
Sunnyside Mines  
ACT/007/007, Carbon County, Utah

November 5, 1984

### UMC 783.15 Ground Water Information

The MRP does not contain adequate site specific information to identify and describe ground water resources within the permit and adjacent areas (UMC 783.15). Specifically, information has not been provided with regard to the occurrence and amount of ground water within the Blackhawk Formation or in stratigraphic units that overlie and underlie the Blackhawk. Therefore, the Division is unable to evaluate the impacts of mining activities as required by UMC 817.41(a).

A more precise characterization of the ground water regime will require a program and commitment by the applicant to systematically obtain data in stratigraphic units that overlie and underlie the Blackhawk for analysis in the future (UMC 783.15, 817.41).

### UMC 784.13 Reclamation Plan: General Requirements

(b)(4) The bonding section contains much of the soil handling plan that must be incorporated into the body of the soils portion of the reclamation plan.

### UMC 805.11

Table III-36 is a summary of the bond estimate. The entire bond estimate, all of the details, should be combined into one section of the Mining and Reclamation Plan (MRP) to avoid confusion. Due to the time element involved, the cost reference (date and book, e.g., 1983 Blue Book) should also be included.

There is a word variation in the work needed for backfilling and grading of the borrow area. The word used in the reply was "tapered," but grading is still needed. Therefore, this needs to be included in the MRP.

### UMC 817.22 Topsoil Substitute

(e) The applicant indicates that the coal seams will be covered with four feet of nontoxic material. The source and volume of this nontoxic material must be submitted, along with chemical and physical analyses of the material.

The applicant indicates that additional topsoil substitute for the coal refuse is to come from a crested wheatgrass field southwest of the town and main road. Soil samples of this area must be taken

to a minimum of the depth of removal. The samples must have chemical and physical analyses conducted and the results included in the mine plan.

The applicant indicates that the potential exists for toxic or hotspots that can only be located at the time of reclamation. If these potential toxic areas cannot be located at the present time and the volume of topsoil substitute necessary for reclamation calculated, then a source of substitute material of sufficient quantity to cover the entire 245 acres must be located and the proper suitability analysis conducted.

UMC 817.25 Topsoil Redistribution

The mine plan on page 42 indicates a 12 inch depth of soil material over the refuse. On page 61, a four foot depth is quoted. This discrepancy must be cleared up.

The topsoil that has been removed and stockpiled must be used to reclaim the area it was originally removed from. It cannot be used to cover additional areas with a thin topsoil layer.

UMC 817.43 Hydrologic Balance: Diversions

1. Manshaft sediment pond area disturbed and undisturbed diversion ditches.

- A. The ditch design and sizing sheets for ditches D-1, D-2 and D-3 do not indicate the total depth of each ditch. Indication of free-board depths is needed to clarify this.
- B. The peak flow given for Area I which drains into Ditch D-1 is incorrect. The drainage area is given as 12.02 acres, but based on planimetry of this area, 20 acres is more accurate. This must be corrected.
- C. The results from the TR55 method used to predict peak flows appear to be incorrect. Using the TR55 method and times of concentration and acreages given in the MRP, the following difference in results occurs.

	<u>Kaiser MRP TR55</u>		<u>DOGM TR55</u>	
	<u>10-year</u>	<u>25-year</u>	<u>10-year</u>	<u>25-year</u>
Area II	.19	.49	.57	1.47
Area III	.56	1.79	1.38	1.74

Corrections in peak flows used for design purposes must be made for each drainage area with corresponding normal depths and velocities changed accordingly.

2. Riprap and filter blanket calculations.

- A. The methodology used to obtain the D<sub>15</sub> and D<sub>85</sub> sizes of the ditch bottom material is not valid. Actual samples of the material in each ditch bottom must be analyzed to obtain this information.
- B. The velocity calculations for each ditch use an average slope of the ditch. This results in significantly understated velocity calculations for steep areas of the ditch. Each ditch must be analyzed for steep sections. Corresponding velocities and riprap sizing must be delineated for steep sections as well as less steep slopes if warranted by predicted velocities.

The Division analysis indicated that the following ditches need riprap protection and analysis for steep slopes.

- Course Refuse Toe
- Railcut D-1, D-3, D-4
- Refuse Road I
- Refuse Diversion I
- WSC 1
- #3 Mine Hoisthouse 4D
- SSSF Overlooking Hillside
- SSSF #2 Canyon Hillside Diversion
- SSSF Upper Hillside Diversion
- SSSF Sediment Pond Final Collection Ditch

- C. The formula given for riprap sizing uses an exponent of  $13/16$ . This should be changed to the correct exponent of  $13/6$ .

3. SSSF diversions.

- A. The following diversions have incorrect time of concentration calculations which also result in incorrect peak flows. Additionally, no side slope is given for these ditches.

- SSSF Overlooking Hillside Diversion
- SSSF #2 Canyon Hillside Diversion
- SSSF Sediment Pond
- SSSF Upper Hillside Diversion

Corrected time of concentrations and peak flows must be provided as well as side slope information for each ditch noted above.

- B. Adequate detail is not provided in the MRP to delineate disturbed area ditches. Each ditch should be clearly delineated, labeled and supported with sizing calculations. Plate III-12 should show by a distinct symbol actual ditches, their extent, and identify each by a letter or numeral for reference to calculations.
- C. Time of concentration and calculations for drainage areas SF-1, SF-2, SF-3, SF-4, SF-5 and the SSSF Sediment Pond area are incorrect. The calculation for basin lag time is high by a factor of 10. The corresponding peak flow predictions are too low as a result of the basin lag time errors. These must be corrected.
- D. The methodology for calculating peak flows for culverts associated with the SF-4 and SF-5 drainage areas appears incorrect in that contributing flows from upstream areas of SF-1, SF-2 and SF-3 are not properly accounted for. Peak flows from SF-1, SF-2 and SF-3 should either be summed with the peak from SF-4 and similarly with SF-5 or a composite hydrograph formulated from the appropriate contributing drainage areas. The peak flow methodology for SF-4 and SF-5 must be corrected.
- E. The revised calculations for the overall peak flow for the SSSF sediment control area on page 5 of 8 (September 12, 1984 submittal) showing a 10-year, 24-hour peak of 13.12 cfs is incorrect. The weighted approach used is not a valid approach for peak flows. This must be corrected utilizing a proven technique.

4. Rail cut area.

- A. The peak flow used in sizing calculations for culvert C-1 which appears to pass flow from ditches D-1 and D-3 of the rail cut pond area is incorrect. In a meeting on October 3, 1984, Doug Pearce indicated that Plate III-6 (DWG #C4-0058) is incorrect. Plate III-6 (DWG C4-0058) must be corrected to depict actual on the ground situation.

5. The methodology for calculating outlet velocities from culverts is not correct. The assumption that culverts will be flowing full is invalid in many cases. Only in some outlet control conditions will a pipe flow situation exist. Velocity calculations must be submitted with sufficient detail to determine inlet or outlet controls on culverts and if outlet control, whether a tailwater pond will exist. The methodology used to calculate velocities at culvert outlets must incorporate actual depth of water at the outlet of the culvert.

6. Riprap placement at sediment pond outlets.

The MRP must specify the placement and extent down the channel that riprap will be placed. A drawing and narrative description which is typical of riprap installation at the sediment pond outlets would satisfy this deficiency.

UMC 817.45 Hydrologic Balance: Sediment Control

1. Silt fence installation measures.

- A. The specific locations where silt fences will be installed must be clearly designated on maps for enforcement purposes. A review of Plate III-1 and other plates in the mine plan indicated that locations for silt fences (or straw bales) were not identifiable.

Further, details on the small area exemption requests discussed in the Division letter of September 18, 1984 do not appear to be in the MRP. The specific measures (i.e., berms, silt fences and vegetation filters) to be used must be delineated for each area. A small inset map for each area with the measures to be used will address this deficiency.

- B. The installation methodology requested for silt fences is not contained in the September 12, 1984 submittal by Kaiser. A drawing of installation design will adequately address this situation

UMC 817.46 Hydrologic Balance: Sediment Ponds

1. Sediment pond dimensions.

The dimensions requested in the Division's August 15, 1984 letter were not provided. In order to verify sizing of the pond, lengths, widths and inside slopes must be provided. Plate III-12 only provides depth information and slope dimension on the outlet side of the pond.

UMC 817.49 Hydrologic Balance: Impoundments

The response contained in Kaiser's August 31, 1984 submittal is not adequate. The requirements of UMC 817.49(h)(1)-(5) are not specifically addressed. The annual certification by a registered professional engineer must address the items required by UMC 817.49(h)(1)-(5).

UMC 817.97 Fish and Wildlife Information

Stocking of Grassy Trail Creek was discontinued in 1979. However, sampling the fishery in July of 1983 showed that rainbow trout were spawning and naturally reproducing in that stretch of stream below Whitmore Reservoir. These wild fish average 120 per mile of stream. This new information needs to be included in the MRP.

The applicant has failed to utilize the most current data available for the local area in relation to black-footed ferrets. An unconfirmed sighting of a ferret was made in 1980 just a few miles west of East Carbon City. The applicant has not contacted the Division of Wildlife Resources (DWR) concerning file or other information. This needs updating.

Plate X-1 does not have a delineation and classification of mule deer winter and summer range, while the MRP implies that the winter range is mapped. These delineations and classifications are available from DWR and should be mapped accordingly on Plate X-1.

The applicant states that cottonwood and box elder will be planted in moist canyon bottoms (Section 10.5, page 13-14) to size and space specifications suitable for deer. However, revegetation plans in Chapter 9 do not discuss this. These areas should be identified and plans presented for planting these species. Chapter 9 will have to be revised to reflect this change. This should also be reflected in the bonding section.

How will reseeded areas be protected from livestock grazing (Section 3.5.5.4)? Details should be given. If fencing is to be used, it should be designed to prevent entrapment of mule deer. Specifications should be given.

The rest-rotation grazing system is still unclear. When will it be initiated? When will animals be grazed and how will the "rotation" be accomplished? Who is it being approved by? How will forage conditions be monitored (Section 10.3.2)?

UMC 817.103 Backfilling and Grading: Covering Coal and Acid- and Toxic-forming Materials

On page 32, the applicant states that the Sunnyside Mine does not produce any toxic material, yet in the soils section, Appendix VIII-3, the levels of heavy metals in the coarse refuse are considered high enough to be toxic to vegetation. This discrepancy must be cleared up.

UMC 817.126 Subsidence Control: Buffer Zones

This section was not addressed. Please do so as outlined in the August 15, 1984 letter from the Division. Please update all narrative and maps as needed.

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