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INA/015/009



STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

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July 16, 1986

**FILE COPY**

Mr. John W. Rains  
Chief Mining Engineer  
California Portland Cement Division  
Calmat Company  
P. O. Box 947  
Colton, California 92324-0514

Dear Mr. Rains:

Re: Completeness and Technical Deficiency Review, Hidden Valley Mine  
Reclamation Plan, INA/015/007, Folder #2, Emery County, Utah.

The Division has completed review of the Hidden Valley Mine reclamation plan. Several items need to be addressed before the Division can issue an approval.

At the request of Joe Jarvis, and hopefully to expedite a response, Division representatives met on July 2, 1986 with Joe Jarvis and Robert Bayer of JBR Consultants group to discuss the items noted herein.

I believe that the comments attached do not alter any of the major concepts in the plan. My hope is that Calmat can respond to the concerns noted no later than August 15, 1986 in order to allow for Division review and hopefully approval before September 1, 1986.

The Division sincerely appreciates the efforts and resources that Calmat has put into this project and looks forward to its successful completion.

Please feel free to contact me if you should have any questions on this matter.

Sincerely,

Handwritten signature of Lowell P. Braxton.

Lowell P. Braxton  
Administrator

Attachment(s)

JJW/djh

cc: Joe Jarvis, JBR  
Technical Review Team A

0800R/64

HIDDEN VALLEY MINE  
INITIAL COMPLETENESS REVIEW  
COMPLETENESS DEFICIENCIES

UMC 771.25 Permit Fees - JW

A \$5.00 permit fee must be filed with the application.

UMC 771.27 Verification of Application - JW

The application must be verified under oath and a copy of such included in the application.

UMC 782.13, 782.14, 782.15, 782.16, 782.17, 782.19, 782.20 - JW

The application did not contain information to address the above noted sections. Please provide the information required by these sections.

UMC 782.18 Personal Injury and Property Damage Insurance Information  
- PGL

The application must contain a Certificate of Liability insurance. As outlined in UMC 800.60, the policy must be maintained in full force during the liability period necessary to complete all reclamation operations. Minimum insurance coverage for bodily injury and property damage shall be \$300,000 for each occurrence and \$500,000 aggregate.

UMC 782.21 Newspaper Advertisement and Proof of Publication - JW

When the application is determined complete, the public notice requirements of UMC 786.11 must be met. Please include a draft of the public notice to be published upon notification from the Division that the plan is complete.

UMC 783.18 Climatological Information - KMM

No climatological information is supplied in either the interim permit or reclamation plan. The applicant should supply sufficient information to assist in analyzing any problems with revegetation success i.e., questions of planting season for cool versus warm season grasses and any need for supplemental irrigation. Mean monthly and mean annual precipitation and temperature summaries from the nearest or otherwise most appropriate weather station should be sufficient.

UMC 783.19 Vegetation Information - KMM

The vegetation descriptions included in the interim permit application is adequate but should be correlated to the reclamation plan. That is, the applicant should indicate how many acres of each vegetation type has been disturbed. The suitability of reference areas depends on the area of each vegetation type actually disturbed.

UMC 783.20 Fish and Wildlife Resources Information - KMM

(see UMC 784.21 Fish and Wildlife Plan)

UMC 783.24 Maps: General Requirements - PGL

- (A) The application must contain a map with all boundaries of lands and names of present owners of record of those lands, both surface and sub-surface, included in or contiguous to, the permit area.

(Make sure 771.23(e)(1) permit area map is 1"=500' [or larger.]

- (B) The application must contain a map which includes all boundaries of land within the proposed permit area upon which the applicant has the legal right to enter.
- (C) The application must contain a map noting the location of surface and sub-surface man-made features within, passing through, or passing over, the proposed permit area, including but not limited to, major electric transmission lines, pipelines, etc.
- (H) The county road must be identified on a map because it is located within 100 feet of the permit area. The county road should be labelled on the permit area map.

UMC 784.13 Reclamation Plan: General Requirements - PGL

- (b)(1) A detailed timetable for the completion of each major step in the reclamation plan must be included. Page 34, Section VIII, schedule of the sequences of reclamation components should be accompanied by the amount of time to complete the components in the reclamation sequence.
- (b)(2) The costs of reclamation on page 37 (Section IX) need cost references. The acceptable references include the Rental Rate Blue Book, Means Index, and Caterpillar Performance Handbook. A 10% contingency factor must be included as well as an escalation factor of 1.62%.

- (b)(3) The final reclamation and final configuration (Plates III and IV) must have the permit area identified to locate where backfilling and grading will be done (an insert would be acceptable). Cross sections showing the anticipated final surface configuration of the proposed permit area must be included. Cross sections should be shown for the highwall areas (benches). The cross sections should be referenced on Plates III and IV. Figures I and III should also be identified on the permit area map (or any other reference map).

UMC 784.13(5) General Reclamation Requirements - Revegetation - KMM

(See specific regulations UMC 817.111 - 817.116)

UMC 784.14 Protection of the Hydrologic Balance - TM/RVS

- (A) The applicant needs to show where the alternative sediment controls will be placed on the Final Reclamation Plate III. This should include the area encompassed by the sediment pond. The applicant needs to show cross-section locations on Plate III or another appropriate plate for the ephemeral channel reclamation, the road channel to be restored, and the permanent diversions to be left above the portals. (Page 17, 18 & 32.)
- (C) The applicant must provide a determination of the probable hydrologic consequences. (See Guidelines for Preparation of a Probable Hydrologic Consequence Determination (PHC) pages V-2, V-3 and V-4). The Division recommends that the applicant derive the PHC by following the format given below:
- (1) Utilize Morrissey, Lines and Bartholoma (1980) to describe the hydrogeology of the permit and adjacent area.
  - (2) Briefly describe and summarize the extent of mining and characterize the coal and overburden/underburden chemistry.
  - (3) Briefly describe and summarize ground and surface water quality from baseline data derived during 1978, 1979, 1980 and 1985.
  - (4) Predict the impact of mine closure and reclamation activities on surface and ground water.
  - (5) Describe combined impacts of mine closure and reclamation activities on local and regional water users (including wildlife) and provide an analysis of the mining related impact on the total hydrologic cycle.

UMC 784.16 Reclamation Plan, Ponds Impoundments, Banks, Dam and Embankments - TM

The pond as it exists currently is to be breached and a channel constructed to Ivie Creek. A cross section and a figure showing the final configuration of this pond and its breached channel must be included in the MRP. This should include a description of how the pond sideslopes will be contoured to blend in with the natural topography.

UMC 784.17 Protection of Public Parks and Historic Places - KMM

If reclamation activities will not affect public parks or historic sites, this should be stated. If such places may be affected, the plan should discuss mitigation measures.

UMC 784.21 Fish and Wildlife Plan - KMM

The applicant's proposal should provide sufficient fish and wildlife resource information to determine both the short term impacts of reclamation construction activities and long term effects of reclamation on wildlife resources. The plan should state how wildlife disturbance will be minimized and how fish and wildlife resources will be enhanced where practicable (UMC 784.21[a]) or why enhancement is not practicable (UMC 784.21[b]). Of particular concern are threatened or endangered species, birds of federal interest and high value habitats such as cliffs and riparian areas.

Since no new areas of disturbance are planned, the applicant's statements should be specific to the reclamation site and its immediate vicinity rather than providing general information about all habitat types in the permit area. One specific issue that should be addressed is the USFWS report of an owl nesting near the portal area in 1980.

The applicant should consider distribution of rocks on the regraded pad area to produce a natural appearance, provide small mammal habitat and assist in erosion control.

UMC 784.22 Diversions - TM

The application should include both a longitudinal profile and cross sections for every reach of similar slope for all reclaimed channels, both within the disturbed area and on the road.

UMC 784.26 Air Pollution Control Plan - KMM

While reclamation will be limited to a few acres of disturbance, the applicant should commit to control fugitive dust during reclamation construction.

## TECHNICAL DEFICIENCIES

### UMC 817.13-.15 Casing and Sealing of Underground Openings - RVS

The applicant must provide a description of the methods utilized to permanently plug the seven boreholes. Alternatively, the applicant must permanently seal the boreholes with 5 feet of surface cement. If artesian flow is continuing to occur in boreholes DH-1, DH-3 and DH-7, the applicant must follow permanent abandonment procedure described in the Division of Water Right's Administrative Rules for Water Well Drillers (p.19).

### UMC 817.24 Topsoil: Redistribution - DD

The roadbase material that is to be spread on the "B" seam pad area is to be used to increase the topsoil's water holding capacity. Since only 2.5 " of topsoil will be spread over the ripped-in road base and existing pad material, the root zone of most plant species will be in this coarse textured mixed material. Because the mixed material will have an extremely low water holding capacity and nutrient status due to its coarse texture, the proposed use of the roadbase material is unacceptable, unless significant information can be submitted to support the benefits of the material as proposed.

### UMC 817.25 Nutrients and Soil Amendments - DD

The plan states soil materials are saline to sodic, but according to lab data (Appendix II) samples have conductivities from 38-48 umhos/cm, which are non-saline. SAR values from Table II (page 26) of the plan are from 7-23, but when calculated from lab data in the appendix, these values do not correlate. These discrepancies need to be clarified.

A cation and anion balance ( $\text{Ca}^{2+}$ ,  $\text{Mg}^{2+}$ ,  $\text{Na}^{+}$ ,  $\text{K}^{+}$ ) - ( $\text{SO}_4^{2-}$ ,  $\text{Cl}^{-}$ ,  $\text{HCO}_3^{-}$ ,  $\text{NO}_3^{-}$ ) from a saturation extract should balance out relatively close. In all cases, from lab data in the appendix, anions are significantly higher, compared to the cations. This indicates standard procedures to analyze soils may not have been used. All cations and anions to determine a balance, and to calculate SAR need to be analyzed in the extract from a soil-water saturation paste. Electrical conductivity should be conducted on the extract also.

Other analyses, in addition to analyses already submitted, that need to be performed on material used for topsoil or topsoil substitute material include: soil texture, saturation percentage, available water holding capacity, alkalinity, and rock fragments (% value).

According to the plan, fertilizer will be applied at the rate of 242 pounds/acre of Diammonia phosphate in the fall and 100 pounds/acre Urea in the spring, but does not mention how these will be applied or if they will be incorporated into the soil. Please specify how these will be applied.

UMC 817.42 Hydrologic Balance: Water Quality Standards and Effluent Limitations - TM

The applicant has submitted water quality data both in the previous MRP and currently in a June 25, 1986 submittal to the Division. The applicant needs to identify on the appropriate plate where they are currently sampling as well as where they will be sampling runoff from the disturbed area.

Page 18 of the plan suggests that some increases in settleable solids during runoff events will occur. The application must demonstrate how applicable state and federal effluent limitations through the use of alternative sediment controls (i.e., silt fences, etc.) will be achieved.

UMC 817.43 & 44 Hydrologic Balance: Diversion and Conveyance of Overland Flow, Shallow Ground Water Flow, and Ephemeral Streams - TM

The applicant must show that the channel lining for the ephemeral channels to be reclaimed are designed using standard engineering practices [UMC 817.43 (f)(1)]. The cross section given in the text as Figure III does not show a filter blanket under the riprap. The riprap gradation in Table 2 (p7A), does not give the D50 value or classify what the values (2.5, 1.8, 1.0, 0.1) mean. The cross section shown in Figure III is too generalized (see comments under 784.22). The plan must include a longitudinal profile with cross sections along that profile as requested in 784.22.

The application does not include any engineering calculations regarding the restored channel shown on Plate III where the ephemeral channel crosses the road nor for the diversions to be left above the portals. Design information must be included in a similar manner to the main mine site channel (i.e., longitudinal profile, riprap sizing with filter blanket calculations, and a cross section of the reclaimed channel).

UMC 817.47 Hydrologic Balance: Discharge Structures - TM

The applicant discusses the use of an energy dissipator located adjacent to Ivie Creek to handle discharge and control erosion at the outflow of the breached sediment pond. The applicant needs to include a drawing with cross sections of this energy dissipator and show how the reclaimed channel ties into it.

UMC 817.49 Hydrologic Balance: Permanent and Temporary  
Impoundments - TM

The applicant must show in the cross sections of the decommissioned sediment pond requested under UMC 784.16, that it will not impound water or the application must meet the requirements of this regulation.

UMC 817.52 Hydrologic Balance: Surface and Ground Water Monitoring  
- TM

The applicant has included four sets of sampling data in their original MRP. They currently are sampling the expanded parameter list as seen in their June 25, 1986 submittal. The water monitoring plan for the mine should be modified to adhere to the Division's post-mining water quality sampling requirements spelled out in the water monitoring guidelines, revised January 1986. Two water quality samples per annum at high and low flow for perennial streams is adequate for post mining. The guidelines include a list of parameters to be sampled.

UMC 817.57 Hydrologic Balance: Stream Buffer Zones - TM

The application must demonstrate that the water quantity and quality from the reclaimed area will not adversely affect Ivie Creek. Please include this information.

UMC 817.99 Slides and Other Damage - PGL

A commitment from the applicant must be included in the PAP that if a slide were to occur, the applicant will mitigate.

UMC 817.106 Regrading or Stabilizing Rills and Gullies - PGL

An explanation of how rills and gullies will be stabilized must be included (page 13).

UMC 817.111 Revegetation: General - KMM

Two areas of disturbance identified on a July 7, 1986 site visit are not addressed. The access road down-cast material appears to be of a quality equal or better than most of the proposed fill material. There is also a disturbed area adjacent to Ivie Creek at the sediment pond discharge pipe. Both of these steep slopes must be "seeded or planted to achieve a permanent vegetative cover." (UMC 817.111(b)(1).

### UMC 817.112 Revegetation: Use of Introduced Species - KMM

Introduced species - Introduced species comprise one third of the total seed mix and 70 percent of the grass seed to be planted. These introduced species are justified on the basis of not being weeds or pest species. This is not sufficient justification for use of introduced species if suitable natives, which all grow in the reference area, e.g., galleta (Hilaria jamesii), blue grama (Bouteloua gracilis) needle and thread grass (Stipa Comata), alkali sacaton and dropseed species (Sporobolus spp.), are available. Great basin or Salina wildrye could be substituted for Russian wildrye.

The applicant must justify the use of introduced species based upon the four criteria of UMC 817.112 or use native species. Yellow sweetclover and alfalfa used as 'nurse crops' and nitrogen fixers are acceptable without specific justification.

The following mix is recommended if broadcast seeding is proposed. The applicant should, however, consider the advantages of drill seeding in this harsh desert environment.

<u>Common Name</u>	<u>Species</u>	<u>#PLS/acre</u>
Alkali sacaton	<u>Sporobolus airoides</u>	1
Blue grama	<u>Bouteloua gracilis</u>	2
Galleta	<u>Hilaria jamesii</u>	4
Indian ricegrass	<u>Oryzopsis hymenoides</u>	3
Yellow sweetclover	<u>Melilotus officinalis</u>	3
Alfalfa	<u>Medicago sativa</u>	1
Palmer penstemon	<u>Penstemon palmeri</u>	2
Fourwing saltbush	<u>Atriplex canescens</u>	2
Mat saltbush	<u>Atriplex corrugata</u>	2
Shadscale	<u>Atriplex confertifolia</u>	2
Whitesage (Winterfat)	<u>Ceratoides lanata</u>	2

### UMC 817.113 Revegetation: Timing - KMM

Timing/Schedule - Based on the revegetation study cited in the applicant's plan, fall seeding of warm season grasses may not be successful unless greater than normal precipitation is received. The applicant should describe remedial actions (e.g., reseeding in spring or fall, irrigation, reseeding with a different seed mix, etc.) which may be used if vegetation monitoring indicates partial or complete revegetation failure. The applicant should indicate which monitoring period will prompt action (e.g. 1987 or 1988 monitoring).

UMC 817.114 Revegetation: Mulching and Other Soil Stabilizing Practices - KMM

Mulch - The application of 4000 pounds per acre of green alfalfa to increase organic matter in the soil is desirable if the material is incorporated into the soil or at least anchored adequately. The applicant must commit to using other methods of incorporation if dragging the area after mulch application is not sufficient.

The applicant should commit to using erosion control net on steep slopes (2:1).

UMC 817.116 Revegetation: Standards for Success - KMM

Success Standards - The proposed reference area is acceptable for revegetation of the pad area and the access road. Since the roadbase storage area is a small disturbance (less than an acre), it may be more practical to use the reference area as the standard for all revegetation rather than using baseline sampling of the Pinyon-juniper area for the roadbase area.

Bond release requires revegetation ground cover, shrub density and productivity of at least 90% of the reference area in the last two years of the responsibility period. The applicant should commit to quantitative sampling for cover, density and productivity in years 9 and 10 of the responsibility period. Quantitative cover and density sampling would also be valuable early in the responsibility period (e.g. years 2 and 4) to determine if remedial action is necessary since any revegetation work will restart the liability period.

Additional areas - The applicant states that the road fill slopes are "stable". Are they naturally revegetated? If not, revegetation of these slopes must be addressed.

UMC 817.160-166 Roads: Class II: Restoration - PGL/TM

The reference to the interim plan for the Class II road should contain a specific reference (section, page number, and/or figure or plate). The road surface material should be identified because it is part of the request for retention of the road; what type of fence will be constructed; how will it be maintained during the bond liability period; and how will the water bars be maintained during the bond liability period?

Recommendations were provided in a July 2, 1986 meeting with the Division staff to change the water bar designs proposed, for the access road. Revised designs should be included in the application.