STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

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October 29, 1985

Mr. Richard Michael, President
Painted Rocks Mining and Mill, Inc.
646 West 300 North
Clearfield, Utah 84015

Dear Mr. Michael:

Re: Permit Review, Painted Rocks Mining and Mill Inc., PRO/023/009, Juab County, Utah

The Division has reviewed the MR-1 Form which you submitted for the above-referenced mine. The plan has been found to be deficient in many areas, as detailed in the attached review document. Due to the numerous deficiencies the Division suggests that a meeting at the minesite be held between yourself and some of our technical reviewers. This should facilitate finalization of a complete mine plan. Please contact me at your earliest convenience to schedule such a meeting.

Sincerely,

Susan C Linner

Susan C. Linner
Reclamation Biologist/
Permit Supervisor

jvb
Attachment
cc: L. Braxton
D. Cline
D. Darby
R. Harden
L. Kunzler
J. Leatherwood
0028R-57

MR-1 Review
Painted Rocks Mining and Mill, Inc.
PRO/023/009
Juab County, Utah

October 29, 1985

General - JRH

It is recommended by the Division that the operator file for a permit based on a 5-year term basis. This allows both the operator and the Division to review and revise the reclamation plan based on changes or development progress in the mining operation or to improve the potential for reclamation success based on new or proven reclamation practices developed during the permit term. A permit term will also allow modification or adjustment of the surety amount to reflect such changes in the reclamation plan and to adjust the discrepancy between estimated inflation rate by revising the bond to current dollars.

Rule M-3(1)(a) - JRH, DD

The operator has provided the location of the land but has not included a detail map indicating the area and the acreage affected. The applicant needs to submit a geologic map of the area, which shows the location and present status of known test borings or core holes.

Rule M-3(1)(e) - DC

The applicant should submit a detailed plan for controlling the drainage for all disturbed areas. The plan should indicate the directional flow of water, constructed drainways, natural waterways used for drainage, and the streams or tributaries receiving or to receive this discharge.

Rule M-3(2)(e) (f) - LK

The applicant must provide a plan to reclaim disturbed areas related to the mining operation. This plan must include:

1. Species to be used and the amount of seed (in terms of pure live seed) and/or seedlings to be used;

2. a description of seeding and planting methodology;

3. mulching techniques to be used;

4. a description of any management practices to be employed such as irrigation pest/weed control, fencing, etc.;

5. a time table for completing each major task of reclamation (exact dates are not needed, however, the expected time to complete each task and the approximate month or season for beginning and completing each task is needed).

Rule M-3(2)(c) - DD

The applicant shall evaluate and provide information as to the amount and type of toxic and/or unsuitable mineral present on site.

Rule M-3(5) - JRH

All exploratory drilling and related functions shall be included in the application under the requirements of M-3(5) and specific information related to all holes presently drilled or proposed as detailed in M-3(5)(a) through (d). If no exploratory drilling was accomplished or required as part of the mining operation, the applicant should indicate so in their permit application package.

Report form MR-9 shall also be filed with the Division for all mineral exploration work undertaken and approved within the limits of this rule. It shall not be filed in lieu of reporting requested under Rule M-8.

All holes made as step outs to an initial proposed drilling program should be described as in Rule M-3(5)(a) through (d) to the Division as soon as possible. The additional information may be filed as an addendum to the original notice and will not require approval.

Rule M-5 Surety Guarantee - JRH

Under the intent of the Mined Land Reclamation rules and regulations, the operator must provide a contingency for abandonment of the mine site in the form of a Surety Guarantee as prescribed in Rule M-5.

Design, estimates and drawings for reclamation activities should be made for at least the term of the mine permit, and if possible for the life of the mine. Regardless of the expected life of the mining operations, reclamation plans and cost estimates must be provided.

In order for the Division to determine the amount of surety to be provided, the operator must first submit a complete reclamation plan. Bonding requirements for the permit will be based on the worst case conditions during the permit term. In order to determine

the worst case conditions during the permit term the operator must provide sufficient plans of operations as detailed under Rule M-3. Quantities of various reclamation activities should be based on and provided in information given in Form MR-1.

The basis for the surety amount will be the quantities and the scope of work as required in the reclamation plan. In order to determine the amount required for reclamation, productivity calculations for equipment and unit costs must be determined.

Reference materials used by the Division in bond cost estimating are; the "RENTAL RATE BLUE BOOK," the "MEANS SITE WORK COST DATA" and "CATERPILLAR PERFORMANCE HANDBOOK". These documents will be the source of data for finalizing cost estimates. The Cat Book gives the productivity rates for each size of equipment manufactured by Caterpillar. The Cat Book also gives a selection of operational factors that affect machine production. Each of these adjustment factors must be considered for use in the final calculations. Likewise, the Blue Book presents the cost of renting various pieces of equipment used in the mining industry, particularly those used for earthwork in reclamation activities. These costs range from hourly to monthly costs. In addition, the hourly operation costs must be included to account for fuel consumption and maintenance costs. The Blue Book cost does not include operator costs. The Means Book is used to determine labor and operator costs. As with the Blue Book rental rates for equipment, labor costs must also be estimated at subcontractor rates with overhead and profit included. The Means Book provides labor rates with these factors included. Additionally, inflation factors for bond estimates are derived from Means Cost Data. Inflation rates for construction during the previous three years are averaged and applied to the cost estimate as an inflation factor.

The operator may use other sources of information to determine reclamation cost. The basis or methodology used by the operator should be referenced and sufficient calculations should be provided by the operator so that a final cost estimate can be made and a fixed amount determined for the surety.

See the attached copy of the General Bonding Instructions for information as to the types and conditions under which different types of bonding arrangements can be made.

Rule M-6 Plans and Maps - JSL

The submitted maps are deficient for permit approval. The following must be implemented in the map designs: Scale 1" = 500' and inclusion of, all overburden and topsoil removal and storage areas, a clean and concise legend, and the post mining contour.

Rule M-10 Reclamation Standards

(1) Land Use - JRH

The operator must include in the reclamation plan, provisions for post-mining land use compatible with probable land uses on abandonment. Realizing the nature and the magnitude of the disturbance, the operator will need to detail specific areas for land use.

(2) Public Safety and Welfare - JRH

(a) The operator should state or determine if there are any hazards or remnants from past mining operations which will pose a safety problem during operations. If hazardous conditions are present from mining, the operator should so state and offer a plan or commitment to mitigate these circumstances.

(b) The operator needs to address the disposal of trash and debris in the mine plan. The operator should propose a plan for and commit to a disposal plan for waste materials incidental to mining and that plan should be in accordance the the Rules and Regulations of the Division of Health. The operator should also provide evidence by a letter from the county that the landfill used or operated by the operator is in compliance with applicable federal, state and local laws.

(e) The operator should provide information as to what safety measures are being implemented for protection above highwalls, benches and other excavations at the site.

(4) Slopes - JRH

As part of the reclamation plan, the operator shall, if possible, regrade all waste piles and fills to a rounded configuration and at such slopes so as to minimize safety hazards and erosion. Such fills or waste piles need to be identified by the operator. The operator should also estimate and quantify final size and configuration of both the pits and the waste piles for at least the permit term.

Fills and waste piles should also include a description of proposed drainage control, surface erosion control, and vegetation will to be used for stabilization of the slopes.

(5) Highwalls - JRH, DD

Reclamation standards for highwalls and open cuts consist of backfilling against or cutting back the wall to achieve a slope angle of 45 degrees or less. However, much of the open cuts proposed are solid rock and if the operator can show sufficient design criteria, the above standards may be waived. The operator should also consider those areas above the cuts which consist of unconsolidated material that may have to be graded to achieve stability.

The applicant shall provide slope stability information for the slopes that will be developed during mining.

(7) Roads and Pads - JRH

The operator needs to provide information as the the type and procedures used for developing and maintaining roads within the permit area. Although the expected mine life makes it difficult to determine final configuration and details, the operator should consider existing and proposed roads and pads for the permit term.

(7) Roads and Pads - JSL, DC

The applicant must have a more specific plan for the reclamation of the pad areas. The applicant must submit a plan on how pad compaction will be eliminated, the rate and mix of seed (See MR-1, 25(E)) to be used for revegetation, the rate of fertilizer to be applied and the measures to be taken to guard against water, wind erosion, compaction and contamination. The reclamation plan should include provisions for adequate surface drainage, erosion protection, and unrestricted drainage crossings. The applicant states in MR-1, 23(b), "Roads There at Present". This statement does not state if roads will be reclaimed or not. Please elaborate.

(8) Drainages - DC

The applicant must submit plans for all areas where natural channels or valley bottoms are to be altered or used as a disposal site.

(9) Structures and Equipment - JRH

The operator needs to identify and commit to demolition and removal of all structures, utility connections, equipment and debris prior to regrading and abandonment. Approval may be granted for continuing or post mining land use.

(11) Sediment Control - DC

The applicant must submit a drainage and sediment control plan.

(12) Revegetation - LK

A survey of surrounding vegetation must be completed using professionally accepted sampling methods that are approved by the Division. This survey will be the basis for establishing the criteria for revegetation success and ultimate release of the reclamation bond.

(14) Soils - JSL

The applicant must include a plan for the protection of topsoil and subsoil stockpiles from water, wind erosion, contamination and compaction. The applicant must include additional detailed surface preparation plans for drainage, erosion and sediment control measures. The applicant must also include the maximum slope characteristics of the site and highwall reclamation plans. Contemporaneous reclamation plans must also be included.

The applicant states that 6 inches to 1.5 feet of topsoil material will be removed. The applicant must include verification for the depth of topsoil removed. A soil survey and map (scale 1" = 500') of the mine site would be adequate for the verification of soil depth removal. All proposed facilities and structures including stockpile sites attendant to the mining operation for the term of the permit should be shown on this map. Each sample point should be identified and the actual data for each point presented in the application. For all areas to be disturbed, an order two (2) soil survey is required. The applicant must give a more detailed plan for the method of spreading topsoil. Please include the type of machinery to be used, the time of year, and procedures to eliminate potential compaction of the topsoil.

The applicant must perform standard soil tests to insure vegetation reclamation success. The following must be evaluated: total nitrogen, available nitrogen, available phosphorus, potassium, calcium, magnesium, sodium, sodium absorption ratio, alkalinity, electrical conductivity, saturation percentage, soil texture, organic matter and pH. The Sudsbury Corporation Test Kit is not an approved method. Suggested methods for the soil analysis are enclosed. The analysis must be from a Division-approved

laboratory. Based on the analytical soil data obtained by the above mentioned factors, a soil amendment or fertilizer recommendation can be obtained. The applicant must contact the Division for the approval of such recommendations. The applicant must define "Asomite" and include its chemical composition, morphology and its ability to react as a soil amendment or fertilizer. Also, include the percentage of total nitrogen, N, available phosphorus as phosphorus pentoxide, P_2O_5, and the water soluble potassium as potassium oxide, K_2O.

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