

TECHNICAL ANALYSIS

Reclamation Plan

Summit Minerals Inc.  
Summit Minerals #1(Blackhawk) Mine  
PRO/043/001  
Summit County, Utah

July 2, 1987

UMC 800. Bonding and Insurance - JRH

Existing Environment and Applicant's Proposal

The operator has submitted a letter from Bennett Insurance indicating that liability insurance can and will be purchased during the term of this permit.

Summit Minerals, Inc. has provided to the Division, bond in the amount of \$120,300 which was approved by the Division on June 4, 1986. The operator has estimated the costs for reclamation to be in the amount of \$99,624.00. The cost estimate for reclamation is found in the Appendix to section 784.13(b)(2) on page 784.13-20 of the Reclamation Plan (RP).

Compliance

The operator is not considered to be in compliance with the requirements of this section in as much as the operator does not have evidence of liability insurance. The operator must obtain liability insurance in order to be in compliance with the requirements of this section.

The bonding estimate found in the Reclamation Plan is complete with respect to the reclamation plans proposed in the plan. Revisions to the reclamation cost estimate shall be required due to changes or conditions to approval of the Reclamation Plan as stipulated in this document. The Division has reviewed the reclamation costs and has adjusted the amount required to incorporate, to a degree, those revisions required by stipulations to the Reclamation Plan approval. Bonding estimate and determination of the bond amount is found attached to this review document.

The operator is not considered to be in compliance with the requirements of this section.

Stipulations

UMC 800. - (1-2) - JRH

1. Prior to permit approval, the operator shall obtain and provide evidence of adequate liability insurance as required under this section.
2. Prior to permit approval, the operator shall provide to the Division, bond in the form and amount as required.

UMC 817.11 Signs and Markers - SCL

Existing Environment and Applicant's Proposal

The applicant has placed signs as required to show property identification, permit area boundaries and stream buffer zones (page 784.11-1).

There is currently no stockpiled topsoil and no need for surface blasting is anticipated.

Signs and markers will remain in place through the bond release period.

Compliance

The Reclamation Plan complies with this section.

Stipulations

None.

UMC 817.13 Casing and Sealing of Exposed Underground Openings:  
General Requirements - JRH

UMC 817.14 Casing and Sealing of Exposed Underground Openings: Temporary - JRH

UMC 817.15 Casing and Sealing of Exposed Underground Openings: Permanent - JRH

Existing Environment and Applicant's Proposal

The operator has addressed the requirements of this section starting on page 784.13-3 of the Reclamation Plan. Two portals exist on the site which were closed in the fall of 1984 during cleanup operations onsite. The No. 1 portal was filled with 27 feet of incombustible material in accordance MSHA requirements. The No. 2 portal has been left basically intact and has only been backfilled to the extent so as to prevent access. During reclamation activities, permanent sealing of this portal will be accomplished as per drawing 784.13-1.

As noted on page 784.14-1, relative to the prevailing dip of the coal seam in the abandoned mine workings, the portals are generally up-dip from the workings. There is no visible drainage from the sealed workings.

### Compliance

The operator has addressed the requirements of these sections. The mine openings have or will be sealed in accordance with MSHA requirements and the operator has satisfactorily designed the closures to prevent discharge or inflow of water into or from the mine.

### Stipulations

None.

UMC 817.21 - .25 Topsoil - JSL

### Existing Environment and Applicant's Proposal

The Summit Minerals No. 1 Coal Mine soil resources are discussed in the November 7, 1986 submittal, section 783.21, pages 783.21-1 through 783.21-21. The soil survey was conducted in 1985 by the Soil Conservation Service (SCS) at an order one scale.

The soils at the No. 1 Coal Mine are derived from various parent materials. The soils in the lower valley are primarily glacial outwash and stream derived alluvium. The greater part of the surface disturbance lies in alluvium derived from sandstone, quartzite and shale. The soils at the higher elevations of the surface disturbance merge into residuum and colluvium derived primarily from andersite, sandstone and quartzite.

A xeric moisture with a frigid temperature regime prevail. Average annual precipitation is between 16 and 25 inches, with the average annual soil temperature lower than eight degrees centigrade. The topography of the area is gently sloping to steep with slopes ranging from 3 to 40 percent with inclusions up to 60 percent. Slopes range from convex to concave with a general north to west facing aspect. The capability subclass ranges from IVE and IVw irrigated to VIIs and VIIe nonirrigated.

Under native vegetation the erosion hazard associated with gentle and steep slopes vary from slight to severe, respectively. The largest portion of these soils are well drained while a small amount is poorly drained. The texture ranges from loam to clay loam and fine sandy loam. Permeability is moderately slow for all soils. The available water capacity ranges from 5 to 12 inches to a depth of 60 inches. Root growth is restricted in the wet soil due to high water table within 10-20 inches from the surface. Mottling, characteristic of high water tables and reductive conditions, is evident within this particular soil profile.

The native soils are medium textured and neutral in pH while the disturbed soils are cobbly, medium textured and alkaline in pH. The SCS indicates that five soil series, a complex of two of the series and two phases of a series exist in or adjacent to the disturbed area. These soils include: 1) Toehead loam, No. 76; 2) Kovich loam, No. 43; 3) Horrocks-Yeates Hollow Complex, No. 41; and, 4) Watkins Ridge loam, No. 82 and No. 83. The respective taxonomic

classifications are: 1) fine-loamy, mixed frigid, Cumulic Haploxerolls; 2) fine-loamy, mixed frigid, Cumulic Haplaquolls; 3) (Horricks) loamy-skeletal, mixed frigid, Typic Argixerolls, (Yeates Hollow) clayey-skeletal, montmorillonitic frigid, Typic Argixerolls; and, 4) fine-loamy, mixed frigid, Typic Calcixerolls.

Soil profile depths generally range from 42 to 60 inches. Topsoil pH ranges from 6.2 to 7.6 while the substratum pH ranges from 6.1 to 8.4. The disturbed soils pH ranges from 7.6 to 8.2. The electroconductivity ranges from 0.2 to 0.7 mmhos/cm. Percentage of rock fragments greater than two mm ranges from 14 percent in the topsoil to 41 percent in the substratum of the native soil material while the disturbed soils range from 34 to 60 percent. See table 783.21-2, page 783.21-14 for further soil analytical detail.

#### Removal

The surface disturbance occurred prior to the enactment of SMCRA in 1977 (Public Law 95-87). No topsoil was salvaged from the site. Of the 14.41 acres of disturbance, 1.77 acres will be left to support the post mining land use and the remaining 12.64 acres will be reclaimed with in-situ material. The suitability of the in-situ soil material as a substitute topsoil is discussed in section UMC 783.21(b), pages 783.21-11 through 783.21-15, and the soils appendix. Based on the submitted data and specified soil amendments no chemical problems are anticipated. Surface soils contaminated by coal will be scraped off and disposed of in the existing depression delineated on cross-section B-B', plate 784.23-3. The waste material will be buried under four feet of soil.

#### Compliance

The applicant's proposal adequately addresses the requirements of this section.

#### Stipulations

None.

#### Storage

The site was disturbed prior to SMCRA. No topsoil was salvaged. In-situ soil materials will be utilized as substitute topsoil.

#### Compliance

The applicant's proposal adequately addresses the requirements of this section.

#### Stipulations

None.

Redistribution

No topsoil was salvaged for final reclamation. The in-situ soil material will be utilized. This material will be ripped to an 18 inch depth and disk harrowed prior to seeding. Final configurations and topography are shown on plates 784.23-1, 784.23-2, and 784.23-3.

Compliance

The applicant's proposal adequately addresses the requirements of this section.

Stipulations

None.

Nutrients and Amendments

The applicant had submitted analyses of both disturbed and undisturbed soil (Table 783.21-2) with a discussion of the amendments and fertilizers within pages 783.21-11 through 783.21-15 and the Soil Appendix. The disturbed soils tend to be low in phosphorus, potassium, and nitrogen and high in pH and percent rock fragments. During field inspection it was evident that the soil materials were also highly compacted. Two tons/acre of alfalfa will be incorporated into the soil to alleviate the compaction and increase the physiochemical characteristics, stability, and microbiological communities of the soil. The incorporated alfalfa will meet the nitrogen fertilizer requirement and maintain a proper C:N ratio within the soil solum.

Compliance

The applicant has not adequately addressed this section. Page one of the Revegetation Plan (Revegetation Appendix) states that no fertilizers or amendments are planned. The soils report conducted by Utah State University Soils Lab indicates that nitrogen and phosphorus should be applied to the substitute material. The Division concurs with this recommendation. The alfalfa amendment will satisfy the nitrogen requirement but will not satisfy the phosphorus requirement.

Stipulation

UMC 817.25 - (1) - JSL

1. The in-situ topsoil substitute materials will be fertilized with 30 lbs/ac P<sub>2</sub>O<sub>5</sub> at the same time the alfalfa is incorporated into the soil.

The alluvium of Chalk Creek comprises the major ground water source for the area. The alluvium is quite permeable and can yield up to 2000 gallons per minute (gpm). Only a few wells exist in the vicinity which withdraw water from the alluvial aquifer and at low rates (approximately 2-10 gpm).

Pump tests were conducted on two wells in the vicinity of the mine (the Old well and the Mine well). During the pumping period water level data were collected using an electric water level indicator. Flow data were collected volumetrically using a one gallon bucket. Analyses describing the drawdown rates, recovery rates and transmissivities are described on pages 101-109, Attachment K and Addendum to mine plan for Boyer Mine well (April 21, 1987 by EarthFax Engineering, Inc.) of the Mining And Reclamation Plan, Summit Coal Co., Boyer Mine, ACT/043/008. Water quality and quantity from a few wells is available.

Surveys have been conducted to identify the locations and characteristics of seeps and springs in the vicinity of the permit area. Thirty-four seeps and springs were found within one mile of the permit boundary. Most seeps and springs found during this survey were located on the north side of Chalk Creek in the vicinity of the Boyer Mine permit area. Most issued from alluvium or colluvium overlying bedrock at shallow depth. During the June survey, 11 of the sources existed as seeps with water visible. Maximum measured flows were 10 gallons per minute (gpm). In October of 1985 seven of the seeps and seven of the springs were dry and flows at the other springs were unmeasurable (see spring and seep Table 4-19, p. 100, Vol. 2, Mining And Reclamation Plan, Summit Coal Co., Boyer Mine, ACT/043/008, DOGM offices).

Major chemical concentrations in the groundwater contained in bedrock near Chalk Creek consist of sodium (Na), calcium (Ca) and bicarbonate ( $\text{HCO}_3^-$ ). Closer to the ridges on either side of Chalk Creek groundwater contains higher concentrations of calcium, magnesium and chloride.

The reclamation plan and practices that the applicant has proposed preclude any potential impact to the ground water system in the permit and adjacent areas. The reclamation activities will essentially consist of surface disturbances (backfilling, regrading, and revegetation) with no required disposal or burial of toxic- or acid-forming materials. Therefore, the monitoring of the ground water system at the reclamation site is not warranted and will not be required.

#### Surface Water

Surface water sources in the adjacent area exist as perennial flow in Chalk Creek. Except for the potential ephemeral drainage discussed under UMC 817.44 of this document, there are no other intermittent or ephemeral drainages within or adjacent to the permit area. There are no springs located within the reclamation permit area (Exhibit 783.15-2).

No surface water impacts are expected to occur from mining. Implementation of a sedimentation pond equipped with an oil and grease skimmer at the lower end of the mine property will contain runoff from the disturbed surface facilities. The applicant has proposed alternative treatment

structures for treatment of drainage from small areas geographically unable to report to the sediment pond. Thus, discharges of sediments, oils, and greases from the permit area will be minimized during the project life.

A set of stations have been established to monitor the quantity and quality of surface waters above and below the mine site to gage any impacts from reclamation activities to Chalk Creek (Figure 783.16-1). The applicant has proposed to monitor locations up and downstream of the permit area on Chalk Creek for water quantity and quality quarterly until baseline monitoring requirements are met (i.e. two years of data). Division guidelines specify that flow measurements are to be collected monthly during the baseline monitoring period. A variance to this requirement is warranted due to a current study being conducted by a Division contracted consultant for the Boyer Mine (Summit Coal Co., ACT/043/008) under the Small Operator's Assistance Program (SOAP). The Boyer Mine is adjacent (north and across highway 133) from the reclamation site. Data collected for that study is directly applicable to the proposed reclamation site (i.e. sampling locations are identical for both monitoring programs). Following completion of the baseline data period, the applicant proposes to comply with Division guidelines and monitor the stations twice a year until termination of the bond.

Water quality samples will be analyzed for parameters as outlined in DOGM guidelines for the baseline and postmining phases of the mine. These parameters are presented in Tables 784.14-1 and 784.14-2 of the RP.

The applicant has proposed to monitor Chalk Creek up and downstream of the reclamation site during construction periods for settleable and total suspended solids (p. 784.14-3) to demonstrate that surface activities will not adversely affect the water quality of that stream system.

The applicant has committed to submitting the results of all samples to the Division within 90 days of receipt (quarterly reports). The applicant has committed to reporting the results that exceed the effluent limitations to the Division (p. 784.14-3).

Calcium and bicarbonate are the principal ions in surface water in the mine plan and adjacent areas. Total dissolved solids concentrations are less than 500 mg/l in Chalk Creek and less than 600 mg/l in the intermittent streams. Concentrations of trace metals in the area are within drinking water standards.

#### Compliance

The applicant is in compliance with this section.

#### Stipulations

None.

UMC 817.53 Transfer of Wells - DD

Existing Environment and Applicant's Proposal

Records from the Utah Division of Water Rights show a well developed by Utah Coal and Energy exists on the property, but no well could be found after a thorough search of the minesite. No wells will be transferred.

Compliance

The applicant complies with this section.

Stipulation

None.

UMC 817.55 Hydrologic Balance: Discharge of Water Into An Underground Mine - RPS

Existing Environment and Applicant's Proposal

The operator does not propose to develop any underground openings nor are there any current openings on the reclamation site.

Compliance

The applicant is in compliance with this regulation.

Stipulations

None.

UMC 817.56 Hydrologic Balance: Postmining Rehabilitation of Sedimentation Ponds, Diversions, Impoundments, and Treatment Facilities - RPS

Existing Environment and Applicant's Proposal

The applicant proposes to remove all sedimentation ponds and associated diversions following compliance with the criteria of UMC 817.46 (u) (p. 784.16-3 and p. RP-5 of the RP). No permanent hydrologic structures are proposed for the mine site.

Compliance

The application is in compliance with this regulation.

Stipulations

None.

UMC 817.57 Hydrologic Balance: Stream Buffer Zones - RPS

Existing Environment and Applicant's Proposal

The applicant proposes to reclaim the existing sedimentation pond which is located within 100 ft. of Chalk Creek. Chalk Creek is classified as a perennial stream and contains a biological community that meets the specification of subsection (c) of this regulation. The reclamation of the pond will insure compliance with subsection (a)(1) of this regulation (restoration of original stream channel). Best management practices including regrading, mulching, and revegetation will insure sediment contributions to Chalk Creek during the reclamation of this area will be minimized.

Past disturbances at the site have resulted in surface disturbance within 100 ft. of Chalk Creek at the access road and at the northern portion of the permit area near the existing building.

Compliance

Due to the extent of past disturbances at the site, a variance to the buffer zone requirements of this regulation are warranted. Reclamation of the above mentioned areas will result in stabilization of the site. The applicant is in compliance with this regulation.

Stipulations

None.

UMC 817.59 Coal Recovery - JRH

Coal recovery is not considered to be part of this plan. Only minimal initial development of the portals was made during operations and no significant amount or extent of coal reserves were affected. This section of the regulations is not considered to be applicable to the operator's Reclamation Plan.

UMC 817.61- .68 Use of Explosives - JRH

The operator has indicated on page 784.23-2 of the reclamation plan that no blasting activities have been planned as part of this reclamation plan. Therefore this section is considered to be not applicable.

UMC 817.71 Disposal of Excess Spoil and Underground Development Waste:  
General Requirements - JRH

Existing Environment and Applicant's Proposal

As indicated on page 784.13-3 of the reclamation plan, there is evidence of some surface spillage of coal and or coal waste materials. The appendix of the reclamation plan addresses the handling of these materials. Page RP-1 states that because a coal tipple has been used in the past on the site and was used as a coal loading facility that there is coal/coal waste spillage in the vicinity of the tipple. There is no reason to believe that the extent of the coal material is greater than this surface coal spillage. During grading, any coal or coal waste material will be used as backfill in a depression as

shown on section B-B' on plate 784.23-3. Suitable cover material will be compacted and placed over the coal waste material to a minimum depth of four feet. Should the extent of the coal material in the tipple area be greater than expected, it will be disposed of in a manner similar to that previously described.

#### Compliance

The operator has suitably addressed the requirements of this section. A commitment to cover coal and coal waste material with a minimum of four feet of material has been made by the operator. The location of the coal waste materials is such that this waste material shall be used in the backfilling and grading process of the site to the extent as needed to achieve approximate original contours.

#### Stipulations

None.

- UMC 817.81 Coal Processing Waste Banks: General Requirements - JRH
- UMC 817.82 Coal Processing Waste Banks: Site Inspection - JRH
- UMC 817.83 Coal Processing Waste Banks: Water Control Measures - JRH
- UMC 817.85 Coal Processing Waste Banks: Construction Requirements - JRH
- UMC 817.86 Coal Processing Waste: Burning - JRH
- UMC 817.87 Coal Processing Waste: Burned Waste Utilization - JRH
- UMC 817.88 Coal Processing Waste: Return to Underground Workings - JRH
- UMC 817.91 Coal Processing Waste: Dams and Embankments:  
General Requirements - JRH
- UMC 817.92 Coal Processing Waste: Dams and Embankments: Site Preparation - JRH
- UMC 817.93 Coal Processing Waste: Dams and Embankments:  
Design and Construction - JRH

The operator has indicated on page 784.23-2 of the reclamation plan that coal processing and coal processing waste is not considered to be part of this reclamation plan and therefore is not applicable.

- UMC 817.89 Disposal of Non-Coal Wastes - JRH

#### Existing Environment and Applicant's Proposal

Concrete foundations and asphalt materials are to be disposed of in conjunction with backfilling operations on the site. Scrap from the dismantling of the portal support is to be disposed of in the mine workings.

#### Compliance

The operator has not completely addressed the disposal of non-coal wastes in the reclamation plan. The operator needs to identify and commit to the disposal of other non-coal wastes such as wood, building debris, garbage and other miscellaneous materials that are or will be generated on the site. The plan should include a means for temporarily storing such materials on site and for permanent disposal such as to an approved sanitary landfill.

#### Stipulations

UMC 817.89 - (1) - JRH

1. Within 30 days from the date of approval, the operator shall submit to the Division, plans for the temporary and permanent disposal of non-coal waste materials currently on site or generated during reclamation construction activities.

UMC 817.95 Air Resources Protection - SCL

Existing Environment and Applicant's Proposal

The applicant proposes the following measures to control fugitive dust during reclamation (page 784.26-1):

1. The application of water when surface regrading and soil manipulation cause a significant increase in fugitive dust.
2. Restricting vehicular speed.
3. Promptly revegetating, mulching or otherwise stabilizing the surface of regraded areas.
4. Restricting travel off established roads.
5. Minimizing the amount of time required for reclamation.

Compliance

The applicant has proposed an acceptable fugitive dust control plan. No Air Quality Approval Order is required since no new facilities will be constructed. The applicant complies with this section.

Stipulations

None.

UMC 817.97 Protection of Fish, Wildlife, and Related Environmental Values - LK

Existing Environment and Applicant's Proposal

The mine plan area provides potential habitat for ca. 129 wildlife species, including 52 mammals, 62 birds, 3 amphibians and 12 reptiles (page 783.20-4). Results of low level studies and habitat affinities for these species are discussed in Section UMC 783.20 and on page 14, Vegetation Appendix. Of interest, the reclamation area is within the critical winter range for mule deer. The American Bald Eagle winters adjacent to the reclamation area along Chalk Creek and the Peregrine Falcon could potentially use the site. There are, however, no known roosting trees or nests sites for these species within the reclamation area (page 10-19).

Impacts to wildlife species of interest are discussed in section UMC 783.20, which are generally positive due to habitat restoration and enhancement of the site through the proposed reclamation plan. Plans to

minimize disturbances and adverse impacts and to enhance the wildlife values of the reclamation area are discussed in section UMC 784.21.

#### Compliance

The reclamation plan (see TA section UMC 817.111 - .117) is designed to enhance wildlife habitat values in the area by providing vegetation on an area that has been disturbed for over 100 years, and by creating shrub islands to increase edge effect. Species selection was based on their known value for wildlife. Reclamation activities are scheduled for the summer and fall, which is not within critical life cycle periods for wildlife species of interest.

Impacts to bald eagles are not expected since reclamation activities will occur during times when the eagles normally do not inhabit the area. Since this is a reclamation activity and no new disturbance will occur, impacts are not expected for any other threatened or endangered species.

The applicant will not use persistent pesticides during the reclamation and liability period without prior approval of the Division (page 11, Revegetation Appendix).

The proposal is in compliance with the reclamation standards of UMC 817.97.

#### Stipulations

None.

#### UMC 817.99 Slides and Other Damage - JRH

#### Existing Environment and Applicant's Proposal

No indication or reference to the requirements of this section could be found in the Reclamation Plan.

#### Compliance

The operator needs to provide in the Reclamation Plan, a commitment to notify the Division at any time a slide occurs which may have potential adverse effect on the public, property, health, safety, or the environment.

#### Stipulations

#### UMC 817.99 - (1) - JRH

1. Within 30 days from the date of approval of the Reclamation Plan, the operator shall provide and incorporate into the text of the Reclamation Plan a commitment to notify the Division in the event of a slide or other damage as required by this section.

UMC 817.100 Contemporaneous Reclamation - LK

Existing Environment and Applicant's Proposal

Interim stabilization plans for disturbed areas requiring such have been provided on pages 1-2, 7-9 and 11 in the Revegetation Appendix. A seed mix of quick-growing, non-noxious species for interim stabilization is provided on Table 1. Final revegetation will occur during the fall (mid to late October). Interim stabilization will occur either in the fall or early spring.

Compliance

The applicant has provided plans to revegetate disturbed areas as contemporaneously as possible during times normally accepted for revegetation. The applicant is in compliance with UMC 817.100.

Stipulation

None.

UMC 817.101 Backfilling and Grading: General Requirements - JRH/JSL

Existing Environment and Applicant's Proposal

The regraded surface configuration for the site is shown on plates 784.23-2 and 784.23-3. Approximately 25,000 cubic yards of material will be moved to achieve the final reclamation configuration. Backfilling and grading will be accomplished using a Cat D9U bulldozer. The highwall which traverses across the southern extent of the disturbed area will not be regraded. The toe of the highwall will be regraded however, to provide a uniform contact between the steep undisturbed slopes and the moderate reclaimed slopes.

A backfilling and grading plan is presented on pages 784.13-1 through 784.13-2. The material balance, surface grading and compacting methods, and discussion on soil stabilization is included in the Reclamation Plan and Bond Estimate Appendix in section 784.13. All final grading will be parallel to the contour where practical. Slopes greater than 15 percent will be prepared by hand. Exposed coal materials will be backfilled in the existing depression shown on cross-section B-B', plate 784.23-3 and covered with four feet of soil material.

Compliance

The highwall formed along the southern end of the disturbed area is either a naturally occurring phenomena or was a result of pre-law mining activities. Cliff forming members are found adjacent to the mine site. Total mitigation of this highwall is not considered to be either practical or economically feasible. The appearance of the highwall is such that it would tend to blend in with surrounding landscape. To achieve total reduction of the highwall, a significant amount of currently undisturbed area would also have to be affected, as the slope immediately above the highwall is so steep so as to not allow any cutting back of the ridge of the highwall. Steep slope conditions above the highwall also preclude the hillside immediately above the highwall for use as grazing and no livestock should encroach on or above the highwall.

The highwall consists of a massive sandstone formation topped by a varying thickness of unconsolidated alluvial gravels and soils. Natural vegetative invasion of the slopes cutting into this material is occurring and disturbing the area further is not warranted. However, contours over the No. 2 portal area indicate a highwall of approximately 20 feet of unconsolidated gravel material. From the nature of the materials, it is apparent that this configuration is not stable. The operator needs to provide more design and detail in this area such that the slopes are reclaimed in a stable condition.

To the south of the disturbed area indicated on the drawings, additional disturbances have been found which are also considered to be part of the disturbed area. These areas include an exploration trench cut above the highwall and a catch basin located above the access road to the southern portion of the landowner's property. These areas must be incorporated into the Reclamation Plan.

Final contours and grading of the sediment pond does not allow for the ingress and egress of sheep on the property as part of the post mining land use. Side slopes of the pad to be left where the sediment pond is to be located are sufficiently steep so as not to allow access by livestock to Chalk Creek.

The outslopes of pads and fills as proposed in the Reclamation Plan have not been reduced. These areas include but are not limited to, the outslopes of the pad surrounding the sediment pond, the outslopes of the pad to the north and west of the north building, including those areas which encroach into Chalk Creek, removal of fill used to construct the access road and the bridge abutments (if no landowner approval is received), and the outslopes following along ditch no. 2 on the western portion of the site. At a minimum, these slopes should be reduced to 2h:1v to ensure stability and to be sufficiently moderate in slope to promote revegetation. Fill or pad areas encroaching on the stream channel should be reclaimed in accordance with UMC 817.44.

The operator is not considered to be in compliance with the requirements of this section.

### Stipulations

#### UMC 817.101 - (1-4) - JRH

1. Within 30 days from the date of permit approval, the operator shall provide to the Division, suitable design and stability analysis for the final backfilling and grading to be accomplished along the southeastern portion of the highwall in the region where only unconsolidated materials and gravels exist. Final reclamation design for this area shall include mass balance for earthwork as well as other information regarding reclamation that may be affected as a result of the modifications to the plan.

2. Within 30 days from the date of permit approval, the operator shall provide to the Division, suitable reclamation design for those disturbed areas to the south and above the highwall, including but not limited to, the exploration trench dug above the highwall and the drainage cutoff basin excavated above the highwall and the access road.
3. Within 90 days from the date of permit approval, the operator shall submit to the Division, plans for regrading and recontouring the sediment pond area upon final reclamation in a manner that will allow ingress and egress of livestock to Chalk Creek as part of the post mining land use and in accordance with the easement along the eastern edge of the property line.
4. Within 60 days from the date of permit approval, the operator shall submit to the Division, plans for regrading and re-contouring the out slopes of pad areas on the site in a manner that will blend in with the adjacent contours of the site in order to meet approximate original contour requirements. Slopes shall be regraded to not exceed 2h:1v and shall be rounded in appearance to blend in with the surrounding contours. In particular, the pad encroaching on Chalk Creek shall be regraded in order to conform with this section and with UMC 817.44.

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

Existing Environment and Applicant's Proposal

A minimal quantity of coal materials surrounding the area adjacent to the tipple will be removed and buried. The data presented in table 783.21-3 indicates that the coal material is not acid- or toxic- forming. The material will be buried under four feet of soil material. Refer to TA section UMC 817.101 for further discussion on backfilling and grading.

Compliance

The applicant's proposal adequately addresses the requirements of this section.

Stipulation

None.

UMC 817.106 Regrading Or Stabilization Of Rills And Gullies - JSL

Existing Environment and Applicant's Proposal

The applicant commits to fill, regrade, stabilize and revegetate rills and gullies greater than nine inches deep (page 784.13-2).

Compliance

The applicant's proposal adequately addresses the requirements of this section.

Stipulation

None.

UMC 817.111 - .117 Revegetation - LK

Existing Environment and Applicant's Proposal

Vegetation studies were conducted at the Summit Minerals #1 Mine site during August of 1986 to establish a vegetation reference area to characterize the surrounding vegetation and to use as a standard for revegetation success. Results of these studies are included in Section UMC 783.19 of the RP.

A mountain shrub complex surrounds the reclamation site and is presumed to have existed prior to mining (map 783.19-1). A reference area was located to the southwest of the disturbed area and quantitatively sampled for total plant cover and woody plant density using acceptable methodology and achieving adequate statistical sample adequacy (pages 1-3 & 12-13, Vegetation Appendix) Productivity and range condition was assessed by the Soil Conservation Service in September, 1986 (SCS report). Results of sampling indicated a 42.5% total vegetation cover (page 8-11), woody plant density of 11,869 plants/acre and productivity ranging from 1100-1200 lbs dry wt./ac on the sagebrush dominated sites to 1900-2300 lbs dry wt./ac on the oak dominated sites. Range condition of the reference area is 'good' (SCS report). No threatened or endangered species were found on the reclamation site or in the reference area (pages 3 & 13).

Revegetation plans are detailed in the Revegetation Appendix. The seed mix (Table 2) will be drilled on ca. 9.0 acres and broadcast on ca. 3.6 acres at the appropriate drill or broadcast rate (page 7). Seeding will occur in the fall (mid to late October). All seeded areas will be mulched with 2000 lbs/acre and 3000 lbs/acre of native hay on slopes less than 15% and greater than 15% respectively. Mulch will be anchored by crimping or by stapling polypropylene netting over the hay on the steep slopes (page 8). In addition to seeding, 400 containerized shrubs/acre will be planted in the early spring following seeding as identified on Table 3.

Monitoring of reclaimed areas will consist of an annual qualitative assessment and quantitative sampling as outlined on Table 4. The monitoring plan will assure an adequate statistical sample for cover, woody plant density and productivity for both the reference area and the reclaimed area during years 9 and 10 of the liability period (pages 9 & 10). The applicant has proposed a contingency and maintenance plan which includes fencing both the reclaimed area and the reference area, if needed, to correct any problems that may develop and are identified through monitoring (pages 11 - 13).

Compliance

UMC 817.111 Revegetation: General Requirements

The revegetation plans have been designed to encourage a permanent diverse vegetative cover which will restore or enhance the pre-mine land use of wildlife habitat. The applicant is in compliance with UMC 817.111.

UMC 817.112 Revegetation: Use of Introduced Species

All species to be utilized for reclamation are native species with the exception of Melilotus officinalis (yellow sweetclover) and Poa pratensis (Kentucky bluegrass). M. officinalis is being used because of its erosion control and nitrogen fixing properties. It is a short-lived biennial plant, it is not noxious or poisonous and is compatible with the plant and animal species of the region. Poa pratensis is included because it is an important component of the adjacent lands, is not noxious or poisonous and is compatible with the plant and animal species of the region. The applicant is in compliance with this section.

UMC 817.113 Revegetation: Timing

Final seeding will be done during the first favorable planting season following regrading (mid to late October). The applicant is in compliance with UMC 817.113.

UMC 817.114 Revegetation: Mulching and Other Soil Stabilizing Practices.

All revegetated areas will be mulched with 2000 to 3000 pounds per acre of native hay, depending on slope. Mulch will be anchored by crimping or polypropylene netting stapled in place. The applicant is in compliance with UMC 817.114.

UMC 817.116 Revegetation: Standards for Success

The applicant has established a reference area for determining revegetation success for the entire disturbed area. The corners of the reference area have been permanently marked in the field with metal posts. The location of the reference area is shown on map 783.19-1.

The reference area was determined to be in good range condition by the SCS (letter dated 9/9/86). The reference area will be qualitatively monitored annually and quantitatively sampled during years 5, 9 and 10 of the liability period.

Sampling methods to determine revegetation success are described on page 10 and are acceptable to the Division. Monitoring frequency during the liability period is acceptable. The applicant is in compliance with UMC 817.116.

UMC 817.117 Revegetation: Tree and Shrub Stocking - LK

The applicant has provided a seeding and planting plan to establish a woody plant density that is compatible with and should enhance the postmining land use of grazing and wildlife habitat. The applicant has requested a variance to establishing the reference area woody plant density of 11,869 and has requested an alternative standard of 2000 shrubs per acre. The applicant has provided documentation to support the variance (pages 3-7). The Division has found the variance acceptable in providing adequate woody plants to enhance the wildlife use after reclamation as per UMC 817.97(a).

An adequate monitoring plan will be implemented to assure woody plant density standards are being met. The applicant is in compliance with UMC 817.117.

Stipulations

None.

Determination of Reclamation Feasibility

The applicant has provided a revegetation plan that utilizes standard acceptable methods, and the species selected for revegetation are highly recommended for re-establishing vegetation on native ranges in Utah. The plan provides for seeding and planting during the seasons which are best suited for revegetation success for the area where the mine is located. The permit area is located in an area which receives over 20 inches average annual precipitation, which is also favorable for establishing vegetation. While there is no site-specific data from past plantings or test plots, reclamation is determined to be feasible under the plan for the reasons discussed.

UMC 817.121 - .124 Subsidence Control - DD

Existing Environment and Applicant's Proposal

Mine development has occurred at the site. No secondary mining has taken place. Regulations governing advance mining are not applicable.

The surface land above the mine is owned by one Fern J. Boyer who will be informed if adverse effects from subsidence should occur.

Compliance

The applicant has committed to perform annual visual inspections of the surface area above the mine workings to determine any effects from subsidence during the reclamation period.

The applicant complies with this section.

Stipulation

None.

UMC 817.126 Subsidence Control: Buffer Zone - DD

Existing Environment and Applicant's Proposal

The Summit Minerals Mine does not violate the buffer zone standards. No perennial streams overly or exist adjacent to the mine that will be affected by subsidence. Chalk Creek, a perennial stream, is 900 feet from portal P #1 (Plate 783.14-4). Chalk Creek lies down slope from the mine and away from the drift of the mine.

Compliance

The applicant complies with this section.

Stipulation

None.

UMC 817.131 - .132 Cessation of Operations - SCL

These sections are not applicable to a reclamation plan.

UMC 817.133 Post-Mining Land Use - LK

Existing Environment and Applicant's Proposal

The applicant has provided land use information and plans in sections UMC 783.22 and UMC 784.15 of the RP.

The premining land use of the permit area is believed to be grazing and wildlife habitat. Summit County has zoned the area for residential and agricultural grazing (page 784.15-1). The applicant has provided a discussion of the potential and historic land uses of the region and how they relate to the mine site. Mining for coal and sand & gravel has occurred since 1879 (Section UMC 783.22).

The applicant has proposed to restore the assumed premining land use of grazing and wildlife habitat after mining is completed (page 784.15-1).

Compliance

The applicant's proposal to restore the premining land use of grazing and wildlife habitat is acceptable to the Division. It is compatible with local land use plans and long-range land use objectives (page 784.15-1). The revegetation plan is designed to achieve the postmining land use (Revegetation Appendix). The applicant is in compliance with UMC 817.133.

Stipulations

None.

UMC 817.150-.156 Class I Roads - JRH

UMC 817.160-.166 Class II Roads - JRH

UMC 817.170-.176 Class III Roads - JRH

Existing Environment and Applicant's Proposal

Road width, gradient and surfacing criteria are shown in cross section on drawing number 784.24-1. Plan views are shown on plate number 784.23-2. Plate number 784.23-2 shows the locations of drainageways in and around the roads.

The access road will not be significantly regraded during reclamation activities. The road configuration after reclamation is completed is shown on plate 784.23-2. The main access road and secondary roads to the buildings will be left after reclamation to support the post mining land use of grazing. The access road adjoins an east-west road which serves to join other roads to grazing and a gas pipeline to the west and roads servicing grazing areas to the southwest of the site. All of these roads are to be left for post mining land use to serve as access roads.

#### Compliance

The roads facilitated by the operator in conjunction with the site were pre-existing roads as a consequence of grazing access and pre-law mining activities on the site. These roads have not been previously approved in accordance with the requirements of this section and no designation or classification of these roads exist with regard to this section of the regulations. These roads, however, have been upgraded by the operator during the course of activities on the site. The roads and bridge serve not only the disturbed area for post mining land use, but are also needed for access for adjacent land use. The retention of these facilities for post mining land use is considered to be in accordance with the requirements of this section. This section is considered to be technically adequate.

#### Stipulations

None.

#### UMC 817.180 Other Transportation Facilities - JRH

##### Existing Environment and Applicant's Proposal

No other transportation facilities exist on the site as a result of activities by this operator. Foundations, and remnants of an old tipple and conveyor exist on the site and the operator has committed to reclaim these facilities in conjunction with other reclamation activities on the site. This section is considered to be not applicable with regard to the Reclamation Plan presented by the operator and therefore the operator is in compliance with this section of the regulations.

#### UMC 817.181 Support Facilities and Utility Installations - JRH

##### Existing Environment and Applicant's Proposal

In the Reclamation Plan appendix on page RP-1, it is indicated that the surface landowners wish to have all site improvements such as the bridge over Chalk Creek, the culvert crossing for the irrigation ditch, the access roads, and the two metal buildings left in place following reclamation to support the post mining land use of grazing.

Compliance

No surface owner consent for the facilities to remain as a post mining land use is found within the plan. The operator has indicated to the Division that they have requested but did not receive such landowner consent for post mining land use.

Stipulations

UMC 817.181 - (1) - JRH

1. Without surface owner's consent and Division approval, surface facilities including the buildings, roads, culverts, bridge, etc. cannot remain as part of the post mining land use. Reclamation of the bridge shall be in accordance with UMC 817.44. The Division shall require reclamation of all of these facilities unless landowner consent and landowner assumption of liability for these facilities are made.

UMC 822 Alluvial Valley Floors - JSL

The submitted application is for reclamation operations only. The permit application does not propose any underground coal mining activities.

Compliance

The applicant's proposal adequately addresses the requirements of this section.

Stipulation

None.

UMC 823 Prime Farmland - JSL

The Soil Conservation Service has submitted a negative determination of Prime Farmland for the No. 1 Coal Mine (page 783.27-2). Prime farmlands are addressed within the permit application on page 783.27-1.

Compliance

The applicant's proposal adequately addresses the requirements of this section.

Stipulation

None.