



GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

State of Utah

DEPARTMENT OF NATURAL RESOURCES

BRIAN C. STEED
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

August 21, 2019

Karin Madsen, Resident Agent
Genwal Resources, Inc.
P.O. Box 910
East Carbon, Utah 84520-0190

Subject: Final Reclamation Plan (DO-19B), Genwal Resources, Inc., Crandall Canyon Mine, C/015/0032, Task #5968

Dear Ms. Madsen:

The Division has reviewed your application. The Division has identified deficiencies that must be addressed before final approval can be granted. The deficiencies are listed as an attachment to this letter.

The deficiencies authors are identified so that your staff can communicate directly with that individual should questions arise. The plans as submitted are denied. Please resubmit the entire application by no later than November 22, 2019.

I would strongly recommend that we schedule a meeting where we can discuss the deficiencies with you and your staff face to face. After you've had a chance to read through our analysis and the corresponding deficiencies, please let me know when you'd be ready to meet and we'll get something scheduled (i.e. in coming weeks). In light of the magnitude of this amendment, we recognize that this will be an iterative process and that there are many moving parts to this. Our job is to help you navigate through this as best we can.

If you have any questions, please call me at (801) 538-5350.

Sincerely,

Steve Christensen
Coal Program Manager

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Technical Analysis and Findings

Utah Coal Regulatory Program

PID: C0150032
TaskID: 5968
Mine Name: CRANDALL CANYON MINE
Title: FINAL RECLAMATION PLAN, DO-19B

General Contents

Right of Entry

Analysis:

The amendment does not meet the State of Utah R645 requirements for Right of Entry.

The Permittee has stated that an application for a special use permit has been submitted to the Forest Service for right-of-entry required for the proposed pipeline that will run under Forest Service road #0248 (Crandall Canyon Road). This must be provided to the Division prior to approval of the mine-water discharge pipeline.

The Permittee references appendix 5-27 *Crandall Canyon Mine Memorial, Emery County, Memorandum of Agreement* but did not submit this as part of the application. This Quit Claim Deed documentation will need submitted to the Division for incorporation in to the MRP.

Deficiencies Details:

The amendment does not meet the State of Utah R645 requirements for Right of Entry. The following deficiency must be addressed prior to final approval:

R645-301-114 The Forest Service Special Use Permit for the proposed mine-water pipeline must be submitted to the Division before approval can be given for the proposed application.

R645-301-114 The missing documentation from the proposed Appendix 5-27 regarding the memorandum of agreement with Emery County for the Crandall Canyon Mine Memorial must be submitted to the Division before approval can be given for the proposed application.

adaniels

Permit Application Format and Contents

Analysis:

The amendment does not meet the State of Utah R645 requirements for Permit Application, Format and Contents.

Chapter 5 page ix, in the List of Appendices calls out appendices 5-27 *Crandall Canyon Mine Memorial, Emery County, Memorandum of Agreement*, 5-28 *Slope Stability Analysis Report, RB&G Engineering*, and 5-29 *Burma Evaporation Pond*. These appendices are not in the approved MRP and were not submitted as part of the application even though 5-27 and 5-28 are referred to multiple times throughout the additions to Chapter 5.

Deficiencies Details:

The amendment does not meet the State of Utah R645 requirements for Permit Application, Format and Contents. The following deficiency must be addressed prior to final approval:

R645-301-120 The Chapter 5 List of Appendices incorrectly list 3 appendices (5-27, 5-28, and 5-29) that were not in the approved MRP, or were not submitted as part of this application. These appendices must be submitted through the application process if they are to be incorporated into the MRP.

adaniels

Maps and Plans

Analysis:

The amendment does not meet the State of Utah R645 requirements for Maps and Plans.

The Permittee has submitted revisions to approximately 28 Plates. Many of these are updates to include the new permit area necessary for the proposed mine-water pipeline to Huntington Creek. However, due to the scope of these existing drawings it is not possible to see the exact extent of the proposed permit boundary and disturbed area necessary for the pipeline and its discharge facilities at Huntington Creek. The Permittee should submit plates that show the detail necessary to distinguish where these boundaries are proposed.

Deficiencies Details:

The amendment does not meet the State of Utah R645 requirements for Maps and Plans. The following deficiency must be addressed prior to final approval:

R645-301-140 The Permittee must submit detailed maps that show the exact extent of the proposed permit boundary and disturbed areas required for the mine-water pipeline and the discharge facilities proposed at Huntington Creek.

adaniels

Environmental Resource Information

Historic and Archeological Resource Information

Analysis:

The amendment does not meet the State of Utah R645-301-411 requirements for Historic and Archeological Resource Information. The amendment proposes to add 0.95 acres of new land to the permit area and 0.16 acres of new disturbance. This area appears to have been covered by cultural resource surveys included in the MRP, however, these surveys were conducted over 30 years ago. Consultation with the Manti-La Sal Forest Service, and possibly SHPO, will need to be completed to ensure that cultural resources have been appropriately identified and protected. This consultation is likely to take place following, or as part of, the Forest Service issuing its Special Use Permit.

Deficiencies Details:

The amendment does not meet the State of Utah R645-301-411 requirements for Historic and Archeological Resource Information. The following deficiency must be addressed prior to final approval:

R645-301-411: The Permittee must demonstrate current clearances from Manti-La Sal National Forest and SHPO regarding the expanded project area and plan.

tmiller

Fish and Wildlife Resource Information

Analysis:

The amendment does not meet the State of Utah R645-301-322 requirements for Fish and Wildlife Resource Information. Threatened and endangered species information included in the MRP dates back to 1995 and must be updated to account for impacts that final reclamation, including the implementation of the pipeline discharge into Huntington Creek, may have on T&E species. Consultation with the Manti-La Sal National Forest biologists will take place following their issuance of the required Special Use Permit and these issues will be addressed at that time.

Deficiencies Details:

The amendment does not meet the State of Utah R645-301-322 requirements for Fish and Wildlife Resource Information. The following deficiency must be addressed prior to final approval:

R645-301-322: The Permittee must provide updated fish and wildlife resource information related to the proposed project. This information may be provided as part of securing a Special Use Permit from the USFS.

tmiller

Soils Resource Information

Analysis:

The application does not meet the State of Utah R645 requirements for soil survey because there is no Order 1 soil survey information for the proposed disturbed area.

Appendix 5-30 describes the construction of a pipeline and a concrete energy dissipator adjacent to Huntington Creek (proposed relocation of outfall 002). the location of this disturbance is shown on Plate 5-3 Surface Facilities.

This activity would disturb 0.16 acres of land adjacent to the road and creek. The disturbance falls within Map unit 100 on Regional soils map Plate 2-6. These soils are in the Gralic-Behanin-Elwood Families Complex (App. 5-30, p. 3). A U.S. Forest Service soil survey describes Map Unit 100 as 40% Typic Cryorthents, loamy-skeletal, mixed (nonacid), cobbly fine sandy, loam on 50% slopes; 25% Pachic Cryoborolls, loamy-skeletal, mixed, loam, 30-60% slopes; 20% Argic Cryoborolls, loamy-skeletal, mixed, loam, 30-60% slopes; 20% Argic Cryoborolls, loamy-skeletal, mixed, loam 40 - 70% slopes; with inclusions of 7% Typic Cryoborolls, fine loamy mixed; 6% Typic Cryorthents, fine-loamy, mixed, (calcareous) shallow, 40 - 60% slopes; and 2% rock outcrops.

The Valley engineering Soil Types Study Map, Plate 2-1 may provide further information, but I could not find it in the electronic MRP.

A recent photograph of the soils shows accumulated organic matter in a surface horizon adjacent to the creek (App. 5-30, p. 4). Appendix 5-30 plan describes the salvage of 12 - 18 inches of soil. To know whether that salvage depth is appropriate, a soil survey investigation of the area is required before disturbance in accordance with R645-301-222.

Deficiencies Details:

The application does not meet the R645-301-222, soil survey requirements, The following deficiency must be addressed prior to final approval:

R645-301-222, A soil survey investigation of the area is required in accordance with R645-301-222.

pburton

Maps Archeological Site Maps

Analysis:

The amendment does not meet the State of Utah R645-301-411 requirements for Archeological Site Maps. The amendment does not include a map that depicts how the additional permit acreage will lie in relation to known cultural resources. According to the Chapter 1: Legal section of Appendix 5-30 of the amendment, a temporary 20-foot wide right-of-way will be requested as part of the Special Use Permit. This will temporarily add 2.07 acres to the area of the pipeline right-of-way which, when combined with the requested 1.52 acres of permanent right-of-way, will result in a total of approximately 3.59 acres of permitted right-of-way during construction.

Deficiencies Details:

The amendment does not meet the State of Utah R645-301-411 requirements for Archeological Site Maps. The following deficiency must be addressed prior to final approval:

R645-301-411: The Permittee must include a map showing the changes in the permit boundary relative to known cultural resource sites.

Operation Plan

Road System Plans and Drawings

Analysis:

The amendment does not meet the State of Utah R645 requirements for Road System Plans and Drawings.

The application does not satisfy the requirements of R645-301-527.200 and R645-301-534.140 because the narrative lacks a description of where the proposed pipeline will reside along the length of USFS road 0248. Plate 5-3 offers an overview of this stretch of road but does not clarify where the pipeline will reside in relation to the paved surface. The inset cross-section illustrates a scenario where it appears the pipeline resides on the surface, but the narrative confirms that the pipeline will be buried. The narrative also states that air vents will be placed at intervals along the length of buried pipeline, but does not specify the dimensions of the vents and where they will be located in relation to the paved surface and how they will be protected from traffic, snow plows, etc.

Additionally, the narrative on pages 5-45 thru 5-46 and page 15 of Appendix 5-22 is confusing and makes mixed claims as to whether or not FR 0248 will be paved upon reclamation. Permittee states that they will adjust the reclamation plan as necessary if the Special Use Permit with the Forest Service changes in the future. This uncertain approach does not enable the Permittee to commit to any specific activities upon reclamation. Permittee must clarify what the final dimensions of the road will be as well as the anticipated surface of the road upon reclamation.

Deficiencies Details:

The amendment does not meet the State of Utah R645 requirements for Road System Plans and Drawings. The following deficiency must be addressed prior to final approval:

R645-301-527.200, -534.140: Permittee must include a narrative that clarifies the location of the proposed pipeline in relation to FR 0248, and describe how the pipeline will be maintained through reclamation. The narrative should be accompanied by appropriate maps and cross sections that illustrate the placement of air vents, manholes, and other features along its length. Additionally, the Permittee must clarify what the final dimensions of the road will be as well as the anticipated surface of the road upon reclamation.

jeatchel

Road System Performance Standards

Analysis:

The amendment does not meet the State of Utah R645 requirements for Road System Performance Standards.

The application does not satisfy the requirements of R645-301-527.230 because the narrative lacks a description of long term maintenance for the road as well as the pipeline once the proposed pipeline has been installed. Permittee should include a narrative that addresses how maintenance and/or repairs will be performed on the pipeline given that it will be buried beneath the Forest Service road. Conversely, the narrative should discuss how the placement of the pipeline might affect the long term maintenance of the road. Since Forest Road 0248 is considered a permanent road, the maintenance considerations for both the road and the pipeline should plan through reclamation and beyond since the ownership of the pipeline will likely be transferred to a third party upon bond release.

Deficiencies Details:

The amendment does not meet the State of Utah R645 requirements for Road System Performance Standards. The following deficiency must be addressed prior to final approval:

R645-301-527.230: Permittee must address the long term maintenance of FR 0248 once the pipeline has been installed, addressing how the location of the pipeline might affect the maintenance of the road. Conversely, the narrative must address the long term maintenance and/or repairs to the pipeline, and how that will be achieved beyond bond release.

jeatchel

Spoil Waste Disposals of Noncoal Mine Wastes

Analysis:

The amendment does not meet the State of Utah R645 requirements for Disposal of Noncoal Waste.

The application does not satisfy the requirements of R645-301-542.741 because there is no narrative in the reclamation plan that addresses the removal and disposal of the accumulated iron sludge in the water treatment facility upon reclamation. The reclamation plan should include a commitment to remove all accumulated iron sludge in the water treatment basin for disposal in the Burma Pond.

Deficiencies Details:

The amendment does not meet the State of Utah R645 requirements for Disposal of Noncoal Waste. The following deficiency must be addressed prior to final approval:

R645-301-524.741: The Permittee must provide a narrative in the reclamation plan that commits to the removal of all accumulated iron sludge within the water treatment facility for disposal in the Burma Pond.

jeatchel

Hydro Surface Water Monitoring

Analysis:

The amendment does not meet the State of Utah R645 requirements for Surface Water Monitoring.

The Permittee has proposed a pipeline to carry mine-water discharge from the current UPDES outfall 002 to a discharge point directly into Huntington Creek at the bottom of Crandall Canyon. This will require a revision to the Permittee's current UPDES permit outfall 002 location. In addition to this the Permittee has proposed installing a Parshall Flume within the concrete vault outlet structure that would part of the energy dissipater feature at the outfall of the new pipeline. The Permittee has not proposed new surface water monitoring sites that would facilitate the monitoring of potential impacts to Huntington Creek. This should be added to the MRP.

Deficiencies Details:

The amendment does not meet the State of Utah R645 requirements for Surface Water Monitoring. The following deficiency must be addressed prior to final approval:

R645-301-731.220 The Permittee must provide an updated Surface Water Monitoring Plan, including update relevant maps, to include monitoring of Huntington Creek that would detect impacts from the proposed relocated mine-water discharge point.

adaniels

Hydrologic Water Quality Standards

Analysis:

The amendment does not meet the State of Utah R645 requirements for Water Quality Standards.

The Permittee has proposed a pipeline to carry mine-water discharge from the current UPDES outfall 002 to a discharge point directly into Huntington Creek at the bottom of Crandall Canyon. This will require a revision to the Permittee's current UPDES permit outfall 002 location. By changing the receiving waters of the mine-water discharge, it is likely that the Total Iron limit (currently 1.24 mg/l at the Crandall Creek discharge point) will increase due to the increased flow of Huntington Creek. However, until the appropriate studies have been completed by the Utah Division of Water Quality this new limit has not been established. The Permittee must apply for this revision to their current UPDES permit and provide a draft permit to the Division prior to approval can be made to the change in mine-water discharge location.

Although the mine-water discharge will not be routed through the treatment system once the new pipeline has been installed, the Permittee has proposed leaving the mine water treatment system in place until final reclamation. At the time of this application the mine-water has not been compliant with the UPDES permit established total iron limit for long. Prior to the removal of the treatment system, the Permittee should submit a report to the Division for incorporation into the MRP analyzing the compliance trends of the discharge waters.

Deficiencies Details:

The amendment does not meet the State of Utah R645 requirements for Water Quality Standards. The following deficiencies must be addressed prior to final approval:

R645-301-751 The Permittee must provide the Division a revised UPDES permit for the proposed discharge location of the mine-water pipeline.

R645-301-751 The Permittee must include a commitment in the MRP that a report will be submitted to the Division for approval and incorporation into the MRP which analyzes the mine-water compliance to UPDES standards prior to the removal of the treatment system.

adaniels

Hydrologic Diversion General

Analysis:

The amendment does not meet the State of Utah R645 requirements for Diversion, General.

The Permittee is proposing a pipeline to be buried under the Crandall Canyon road that would transport raw mine water discharge to an outfall directly into Huntington Creek instead of at its current discharge point to Crandall Creek at the outfall of the mine water treatment system. This pipeline is considered a permanent diversion as it will remain in place indefinitely to handle the discharge coming from the Crandall Canyon Mine. To ensure the stability of this pipeline the Permittee needs to provide more specific design features and supportive calculations.

The Permittee states that an 8 inch diameter HDPE pipeline will be buried under the road right-of-way with air vents installed approximately every 1000 feet along the length, and discharge into Huntington Creek through a concrete energy dissipater. The Permittee has stated that along the length of the pipeline there may be areas where they will encounter sandstone as they trench. In this area they have stated that instead of burying the pipeline 5 feet deep, the proposed normal depth of the pipe, it will be placed 3.5 feet deep. The Permittee should provide justification for the depths of the pipe to ensure there won't be problems with the frost line reaching the pipe system.

Crandall Canyon Road will remain in place through the life of the surface facilities and after reclamation to provide access to the canyon and the mine memorial. The Permittee should specifically discuss how the pipeline vents will be protected from road maintenance damage such as protection from plowing in the winter months. As well as vent protection specifics, there is not an engineered detail of the venting feature provided in the amendment. This should be called out in the design drawings.

It is unclear from the application where the pipeline will be aligned in relation to the road. This should be defined more specifically in the MRP.

Deficiencies Details:

The amendment does not meet the State of Utah R645 requirements for Diversions, General. The following deficiency must be addressed prior to final approval:

R645-301-742.312 The proposed pipeline is lacking supportive detailed design features, design drawings, and supportive calculations. Justification and/or specific design calculations must be provided for pipeline depths, designed pipeline venting detail callouts, how venting features will be protected on a public road, and the exact alignment of the pipeline in relation to the roadway. Design of the discharge structure is also lacking in design drawings and supportive calculations, including rip-rap placement and sizing.

adaniels

Hydrologic Stream Buffer Zones

Analysis:

The amendment does not meet the State of Utah R645 requirements for Stream Buffer Zones.

The Permittee has proposed a pipeline to carry mine-water discharge from the current UPDES outfall 002 to a discharge point directly into Huntington Creek at the bottom of Crandall Canyon. Huntington Creek is a perennial stream and a

tributary to the San Rafael River. In addition to the mine-water discharging directly in to Huntington Creek, the Permittee is proposing an energy dissipater structure to minimize erosion on the banks of the receiving creek. This work will require a stream alteration permit from the Utah Division of Water Rights prior to the beginning of work. The Permittee must provide the Division with details of how work taking place during installation of the discharge feature will not degrade the receiving stream or contribute to the addition of suspended solids leaving the permit area.

Deficiencies Details:

The amendment does not meet the State of Utah R645 requirements for Stream Buffer Zones. The following deficiency must be addressed prior to final approval:

R645-301-731.600 A detailed plan, including detailed design drawings, must be submitted that ensures that the quantity or quality of Huntington Creek waters will be protected during the installation of the discharge structure. This may include a stream alteration permit.

adaniels

Hydrologic Sediment Control Measures

Analysis:

The amendment does not meet the State of Utah R645 requirements for Sediment Control Measures.

The Permittee has proposed a pipeline to carry mine-water discharge from the current UPDES outfall 002 to a discharge point directly into Huntington Creek at the bottom of Crandall Canyon. Chapter 2 of Appendix 5-30 states that sediment control structures, (i.e., silt fences, excelsior logs) will be installed below all construction areas to prevent loose sediment from entering either Huntington Creek or Crandall Canyon Creek, and that they will remain in-place until all reclamation and revegetation (or paving) is complete. No details were provided giving specific control measures taken and where they would be located.

Deficiencies Details:

The amendment does not meet the State of Utah R645 requirements for Sediment Control Measures. The following deficiency must be addressed prior to final approval:

R645-301-732.100 Sediment control measures for the installation of the pipeline and its outfall structures must be clearly defined in the MRP and be detailed on design drawings.

adaniels

Signs and Markers

Analysis:

The amendment does not satisfy the State of Utah R645 requirements for Signs and Markers.

The application does not satisfy the requirements of R645-301-521.251 because the narrative is lacking a commitment to post signage or otherwise clearly mark disturbed area boundaries along the newly proposed pipeline.

Deficiencies Details:

The amendment does not satisfy the State of Utah R645 requirements for Signs and Markers. The following deficiency must be addressed prior to final approval:

R645-301-521.251: Permittee must provide narrative committing to post signage or otherwise clearly mark disturbed area boundaries along the newly proposed pipeline.

jeatchel

Reclamation Plan

General Requirements

Analysis:

The amendment does not meet the State of Utah rules for General Requirements.

The amendment does not satisfy the requirements of R645-301-541.100, 541.400 and 542.500 because the timetable proposed on pages 24 and 25 of Appendix 5-22 is lacking a description of the removal of the sediment pond. The narrative on page 5-45 proposes to remove the sediment pond during regrading and recontouring in the latter stages of reclamation, but the timetable provided in Appendix 5-22 does not lend any detail or clarification to that narrative.

Deficiencies Details:

The amendment does not meet the State of Utah rules for General Requirements. The following deficiency must be addressed prior to final approval:

R645-301-541.100, 541.400 and 542.500: Permittee must provide a timetable and plans for the removal of the sediment pond as proposed on Page 5-45.

jeatchel

WildLife Protection

Analysis:

The amendment does not meet the State of Utah R645-301-342 requirements for Fish and Wildlife Protection and Enhancement Plan. In previous consultation with the Utah Division of Wildlife Resources, the need for inclusion of a fish barrier to remain in place in Crandall Creek was identified (see DOGM Division Order DO-19b, Item 2, under Design Considerations). The barrier must be at least 6 feet high and not be designed in a way that would result in a pool forming at its base. The barrier must be in Crandall Creek within the permit area.

Deficiencies Details:

The amendment does not meet the State of Utah R645-301-342 requirements for Fish and Wildlife Protection and Enhancement Plan. The following deficiency must be addressed prior to final approval:

R645-301-342: The amendment must include the placement of a fish barrier in Crandall Creek. The barrier must be at least 6 feet tall and designed in order to prevent pooling at its base.

tmiller

Approximate Original Contour Restoration

Analysis:

The amendment does not meet the State of Utah R645 requirements for Approximate Original Contour Restoration.

The application does not satisfy the requirements of R645-301-553.520 because the narrative on page 8 of Appendix 5-22 fails to describe how the water drainage system will adequately provide drainage and long term stability of the backfilled highwall within the vicinity of the Old Loadout Area. The narrative describes a backfilling method that builds up lifts horizontally against a sandstone ledge that is actively seeping water continually. As the cut slope is built up a drainage system will be installed concurrently that is intended to provide the seepage a means of escape from behind the backfilled slope. The reclamation plan lacks supporting drawings and designs that demonstrate that the drainage system will be robust enough to ensure long term stability.

Deficiencies Details:

The amendment does not meet the State of Utah R645 requirements for Approximate Original Contour Restoration. The following deficiency must be addressed prior to final approval:

R645-301-553.520: Permittee must provide engineered drawings and/or diagrams that demonstrate the proposed drainage system will be robust enough to ensure long term stability of the backfilled highwall within the vicinity of the Old Loadout Area.

jeatchel

Backfill and Grading General

Analysis:

The amendment does not meet the State of Utah R645 requirements for General Backfilling and Grading.

The amendment does not satisfy the requirements for general backfilling and grading because on page 10 of Appendix 5-22 the narrative proposes to almost triple the reclamation volumes required to backfill the Portal, Shop, and Loadout areas but does not offer any explanation as to how or why these volumes were increased. The backfill volumes were increased from 20,410 to 52,000 loose cubic yards but no explanation is offered for this increase. The old narrative referenced Table 5-20-10 in Appendix 5-20 but there is no such table in Appendix 5-20. The application goes on to state that the 52,000 loose cubic yards is fill that is in excess of what is required to reclaim and will be disposed of in the mined out Princess Mine workings. The Princess Mine is currently not mined out and would require the Permittee to move the mine out of cessation status and reopen the mine in order to create the volume necessary to backfill the excess 52,000 yards. In the event that scenario does not happen, the Permittee must address where the excess fill yards will be disposed of and account for this contingency within the reclamation bond.

Deficiencies Details:

The amendment does not meet the State of Utah R645 requirements for General Backfilling and Grading. The following deficiency must be addressed prior to final approval:

R645-301-553.100 thru -553.110, -121.200: Permittee must clarify why the backfill volumes on page 10 of Appendix 5-22 almost tripled, as well as discuss where the volumes will be disposed of in the event the Princess Mine is not reopened.

jeatchel

Backfill and Grading on Steep Slopes

Analysis:

The amendment does not meet the State of Utah R645 requirements for Backfilling and Grading.

The amendment does not satisfy the requirements of R645-301-553.520 because a detailed plan has not been provided describing the construction of the proposed drainage system that will be installed to address the water seeping from the sandstone ledge beneath the north portals mentioned in Appendix 5-22. The narrative on page 8 of Appendix 5-22 states that the backfilled slopes in the Old Loadout Area will contain a drainage system to capture seeping water as the cut slope is built up. Due to the sophisticated nature of this rock drain, the Permittee should provide drawings and/or diagrams illustrating how this feature will be built and provide a description of where the captured water will go once it flows through the drainage system.

Deficiencies Details:

The amendment does not meet the State of Utah R645 requirements for Backfilling and Grading. The following deficiency must be addressed prior to final approval:

R645-301-553.110 thru -553.140, -553.520, -542.200, -541.400: Permittee must provide detailed engineering plans that describe the construction and expected performance of the rock drainage system proposed on page 8 of Appendix 5-22.

jeatchel

Mine Openings

Analysis:

The amendment does not meet the State of Utah requirements for Mine Openings.

The amendment does not satisfy the requirements of R645-301-529 because there are no designs for the final closure of the north and south portals. According to narrative on page 5-41, a final sealing plan must be approved by the BLM prior to permanent closure. The application proceeds to offer a description of the formal portal closure methods on page 5-47. Presently all of the portals within the permit area have been sealed with a temporary block wall, although it is not clear to the Division whether or not these seals are permanent. If any of the portals within the permit area have been permanently sealed then the Permittee must provide written documentation from the BLM as well as the accompanying design drawings that were drafted at the time of closure. If the current seals are temporary, then the Permittee must provide design drawings and supporting narrative describing permanent closure of all portals.

Deficiencies Details:

The amendment does not meet the State of Utah requirements for Mine Openings. The following deficiency must be

addressed prior to final approval:

R645-301-529: Permittee must provide design drawings and supporting narrative describing the permanent closure of all portals. If the north portals have been permanently sealed then documentation from the BLM with the final closure design drawings must be provided to that effect.

jeatchel

Topsoil and Subsoil

Analysis:

The application does not meet the State of Utah R645 clear and concise requirements, because the acreage of each reclamation area is not provided. The plan does not meet the State of Utah R645 soil redistribution requirements because under this plan, there will be excess stored topsoil. The plan does not meet the State of Utah R645 requirements for testing plan for nutrients and amendments, because the in-situ topsoil must be tested.

The disturbed area is reported in the GENWAL DISTURBED ACREAGE table to be 34.39 acres (Chap 1, p. 1-10). The mine site disturbed area is the sum of the FS Special Use permit and the Dellenback Fee acreage or 13.616 acres. An additional 0.16 acres will be disturbed for the mine water discharge at the mouth of Crandall Creek. Additional acreage is itemized for the four topsoil stockpiles and the rescue drill holes, SITLA rescue road and the Burma evaporation basin. An asterik states that the 7.53 acres included in the FS Special Use Permit "Includes all areas within the "permitted" disturbed area. Not all acreage is presently disturbed. See Figure 8C. Figure 8C could not be found.

Redistribution volumes at the mine facilities area are reported in Section 2.42, page 2-10. Specifically, a 12 inch replacement depth at the original surface facilities area (portal, shop, old substation, old loadout) and at the Coal pile area, SW corner of mine yard, Nose cut area, upper coal pile area and loadout pond area. A sixteen inch replacement depth is stated for the North slope area, S. Slope Bench area, and the South Portals. Areas not topsoiled are also called out on this table.

The amended reclamation plan replaces the current plan found in Appendix 5-22. The amended plan describes redistribution of 12 inches over the old loadout area, the portal area, the old substation area, the shop area, and the expansion area. By comparing the topsoiled areas with the Chapter 2 soil redistribution table, I calculated the total topsoiled area to be 5.84 acres. This would require 9,422 CY of soil. The total stored topsoil volume is 12,912 cu yds as reported in on page 2-11. This leaves 3,490 CY to be redistributed.

The final reclamation contours are shown on Plate 5-17. Cross sections are shown on cross-sections 5-17 A through D. Areas such as the South slope expansion area, the culvert inlet, and the stream channel would not received topsoil.

This amended reclamation plan would be enhanced by providing acreage of each reclamation area and showing the areas of topsoil redistribution on a map. This plan must call for redistribution of all salvaged topsoil.

"Genwal has committed to adding nutrients as determined by laboratory analysis conducted on topsoil samples taken before topsoil redistribution and during final reclamation" is repeated throughout the reclamation plan (App. 5-22 pgs 8, 12, 14, 17, 21). In addition, samples of the adjacent undisturbed soil will be taken for comparison. This is commendable and meets the requirements of R645-301-231.300.

For soils stored in situ, the condition of the soil will be observed after it is unearthed (App. 5-22, p. 18-19). Re-vitalizing in-situ soil is an experimental practice, as such, in-situ soil on the re-exposed South facing slope must also be sampled and tested for nutrients to determine whether amendments are required, prior to the application of polyacrilimide.

Deficiencies Details:

The application does not meet the R645-301-121.200, clear and concise requirements, The following deficiency must be addressed prior to final approval:

R645-301-121.200, 1) Please state the acreage of each reclamation area so that the reclamation areas can be reconciled with the area acreage table found in the MRP Chapter 2, p. 2-10. 2) Please provide a location for Figure 8C which referenced in a footnote to the GENCWAL DISTURBED ACREAGE table in Chapter 1, p. 1-10.

R645-301-242.100, The amended plan describes redistribution of 12 inches over the old loadout area, the portal area, the old substation area, the shop area, and the expansion area, which I calculate to be 5.84 acres. This would require 9,422 CY of soil. The total stored topsoil volume is 12,912 cu yds as reported in on page 2-11. This leaves 3,490 CY to be redistributed. This plan must call for redistribution of all salvaged topsoil. This amended reclamation plan would be enhanced by providing acreage of each reclamation area and showing the areas of topsoil redistribution on a map.

R645-301-231.300, Re-vitalizing in-situ soil is an experimental practice, as such, in-situ soil on the re-exposed South facing slope must also be sampled and tested for nutrients to determine soil quality and whether amendments are require, prior to the application of polyacrilimide.

pburton

Hydrological Information Reclamation Plan

Analysis:

The application does not meet the State of Utah R645 requirements for Hydrology Information Reclamation Plan.

The currently approved reclamation plan has two phases to the reclamation work where earthwork, Crandall Creek re-establishment and seeding take place in phase one and the sediment pond is removed in phase two after approval from the Division. The Permittee is now proposing to remove the sediment pond as reclamation work in the canyon takes place instead of the current plan of keeping it in place until vegetation is established on the reclaimed slopes up canyon. The Permittee has not provided any analysis to justify why the sediment pond can be removed prior to the establishment of new vegetation in the disturbed area.

The highwall seep above the current mine-water treatment system will need an engineered design to ensure the successful reclamation and drainage of the area. This needs to be submitted as part of the reclamation plan.

Deficiencies Details:

The application does not meet the State of Utah R645 requirements for Hydrology Information Reclamation Plan. The following deficiency must be addressed prior to final approval:

R645-301-763.100 The Permittee must provide justification through soil loss modeling or similar analysis that the proposed reclamation work and timing of the removal of the sediment pond will prevent additional suspended solids from leaving the permit area throughout the reclamation work and until the disturbed area has been stabilized and revegetated.

R645-301-762.200 The Permittee must provide a detailed P.E. stamped engineering design, including supportive drawings and calculations, of the restoration of the approximate original contour in the area of the water treatment system that will ensure successful mitigation and reclamation of the highwall seep drainage.

adaniels

Revegetation Timing

Analysis:

The amendment does not meet the State of Utah R645-301-354 requirements for Revegetation Timing. The amendment includes a plan to sequentially demolish surface facilities, backfill and grade, place topsoil, and revegetate and mulch multiple locations in the permit area. According to the plan, the Old Loadout Area will be demolished, backfilled and graded, have topsoil placed, and be hydroseeded and hydromulched prior to beginning demolition of the Portal Area. The Portal Area will likewise be demolished, backfilled and graded, have its topsoil placed, and be hydroseeded and hydromulched after the Old Loadout Area but before moving on the Old Substation Area, which will then be demolished, backfilled, graded, have topsoil placed, then be revegetated and mulched. Following the Old Substation Area revegetation, the Shop Area will be reclaimed, then the south and north slopes of the Expansion Area, then the stream channel. In the midst of this, the road north of the Expansion Area will be reclaimed. The plan indicates that all of these areas will be done sequentially but they will all be seeded and mulched in September or October. The Division is concerned that the timing of demolishing, backfilling and grading, placing of topsoil for six different areas will not allow for each area to be hydroseeded and hydromulched in the timeline presented. R645 rules state that revegetation must be done in the first normal period for favorable planting conditions following the placement of the growth medium.

Deficiencies Details:

The amendment does not meet the State of Utah R645-301-354 requirements for Revegetation Timing. The following deficiency must be addressed prior to final approval:

R645-301-354: The Permittee must clarify the timing, sequence, and practicability of the currently proposed revegetation plan.

tmiller

Stabilization of Surface Areas

Analysis:

The application does not meet the State of Utah R645 requirements for Soils Stabilization because, the plan states that topsoil will be left in a roughened condition until the final steps of reclamation and revegetation, which will not be done until September - October. The final steps are the erosion control steps. They are described similarly for each reclamation area as follows:

1. Application of fertilizer (if needed)
2. hydroseed
3. hydromulch with wood fiber to stabilize soil and control runoff

Under the proposed plan, the Division is concerned 1) that there will be an un-necessary delay in mulching and 2) that if erosion control is not applied to reclaimed areas as each area is completed, access will be cut off to that area for the hydro-truck. Reclamation projects routinely schedule hydroseed and hydromulch as work progresses, so that a graded topsoiled area is treated while access to the area remains, regardless of season. (i.e. Des Bee Dove, Cottonwood, Deer Creek have all been seeded in increments in July, August and September - March). This is a "best practice" because the use of hydromulch is the preferred method of stabilizing soils on steep slopes.

Deficiencies Details:

The application does not meet the R645-301-244.200, soil stabilization requirements, The following deficiency must be addressed prior to final approval:

R645-301-244.200, Erosion control must be provided for all reclaimed areas as they are completed. Under the proposed plan, the Division is concerned 1) that there will be an un-necessary delay in mulching and 2) that if erosion control is not applied to reclaimed areas as each area is completed, access will be cut off to that area for the hydro-truck. This is a "best practice" because the use of hydromulch is the preferred method of stabilizing soils on steep slopes. Reclamation projects routinely schedule hydroseed and hydromulch as work progresses, so that a graded topsoiled area is treated while access to the area remains, regardless of season. (i.e. Des Bee Dove, Cottonwood, Deer Creek have all been seeded in increments in July, August and September - March).

pburton

Bonding Determination of Amount

Analysis:

The amendment does not meet the State of Utah R645 requirements for Determination of Bonding Amount.

The reclamation plan does not satisfy the requirements of R645-301-830 because a reclamation bond summary has not been included. This submittal has several reclamation items that are relatively new that have not been contemplated in the latest bonding calculations. The following items need to be specifically addressed in the reclamation bond: The costs associated with the construction of the backfilled drainage system in the Old Loadout area, the construction of the pedestrian footbridge spanning Crandall Creek to access the Miner's Memorial, the haulage of expansion area fill off-site as opposed to being secreted in old mine workings as proposed in the narrative, the cleanup and disposal of accumulated iron sludge within the water treatment pond, and the costs associated with the construction and long term operation and maintenance of the proposed pipeline redirecting mine drainage from the north portals to Huntington Creek.

Deficiencies Details:

The amendment does not meet the State of Utah R645 requirements for Determination of Bonding Amount. The following deficiency must be addressed prior to final approval:

R645-301-830: Permittee must provide an updated reclamation bond that addresses the costs associated with the following items outlined in the recently submitted reclamation plan:

- The construction of the backfilled drainage system in the Old Loadout area.
- The construction of the pedestrian footbridge spanning Crandall Creek to access the Miner's Memorial.
- The haulage and disposal of excess expansion area fill off-site.
- The cleanup and disposal of accumulated iron sludge within the mine water treatment pond.
- The construction and long term operation and maintenance of the proposed pipeline redirecting mine drainage from the north portals to Huntington Creek.

jeatchel