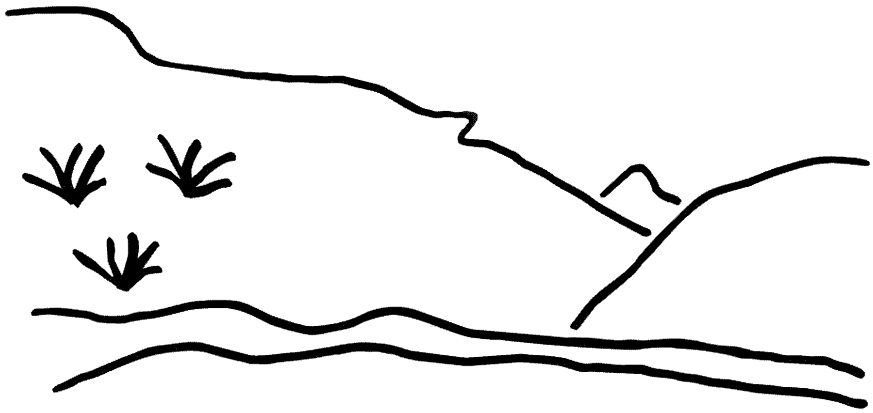
State of Utah



Utah Oil Gas and Mining

Coal Regulatory Program

Cottonwood/ Wilberg Mine
Phase I Bond Release
C/015/019-BR00D-3
Technical Analysis
January 17, 2002

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TECHNICAL ANALYSIS

INTRODUCTION

The Cottonwood Fan Portal site was initially disturbed under an exploration permit in anticipation of constructing a fan portal; however, construction of the fan portal was abandoned when extensive burnt coal was found. Cast-off material below the site was reclaimed in 1981. Reclamation of the Cottonwood Fan Portal area was initiated in November of 1998. The reclaimed cast-off material below the site was not re-disturbed in 1998.

A historical abandoned mine (Old Johnson Mine) is located within the Cottonwood Fan Portal reclamation area. Historical remnants included an old wagon road and two sealed portals. The old wagon road was upgraded and utilized for hauling topsoil during reclamation of the fan portal area in 1998 and afterwards was reclaimed, leaving an access trail to the two historical Johnson portals.

The Phase 1 bond release application was submitted on July 7, 2000.

A chronology of the Phase I Bond Release Application

Phase I Bond Release application rec'd	July 7, 2000	
Initial Division review		September 27, 2000
Energy West Mining Co. response	December 8, 2000	
Division review		March 7, 2001
Energy West Mining Co. response rec'd	August 8, 2001	
Division review		October 10, 2001
Query about status	Dec. 14, 2001	
Division review		December 31, 2001

The Phase 1 bond release can be approved pending a Division inspection of the site as per R645-301-880.210.

One particular location in the vicinity of the Johnson Mine site requires monitoring by the Permittee and Division to protect the soil from further erosion. This is a straight drop chute which carries water from above the reclaim site into the disturbed area with great force. This is in the vicinity of the disturbed area perimeter as it comes west and then north above the Johnson Mine Site. This also happens to be the location of the Johnson Mine Site Coal Chute. During a site visit on January 4, 2001, the Permittee agreed to monitor this location frequently and take steps to ensure that a large gully does not form. The Permittee is expecting that as plants take root, the erosion will cease.

RECLAMATION PLAN

APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -301-270, -301-271, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, -301-542, -301-731, -301-732, -301-733, -301-764.

Minimum Regulatory Requirements:

Note :The following requirements have been suspended insofar as they authorize any variance from approximate original contour for surface coal mining operations in any area which is not a steep slope area.

Criteria for permits incorporating variances from approximate original contour restoration requirements.

The Division may issue a permit for nonmountaintop removal mining which includes a variance from the backfilling and grading requirements to restore the disturbed areas to their approximate original contour. The permit may contain such a variance only if the Division finds, in writing, that the applicant has demonstrated, on the basis of a complete application, that the following requirements are met:

1.) After reclamation, the lands to be affected by the variance within the permit area will be suitable for an industrial, commercial, residential, or public postmining land use (including recreational facilities).
2.) The criteria for the proposed post mining land use will be met.
3.) The watershed of lands within the proposed permit and adjacent areas will be improved by the operations when compared with the condition of the watershed before mining or with its condition if the approximate original contour were to be restored. The watershed will be deemed improved only if: the amount of total suspended solids or other pollutants discharged to ground or surface water from the permit area will be reduced, so as to improve the public or private uses or the ecology of such water, or flood hazards within the watershed containing the permit area will be reduced by reduction of the peak flow discharge from precipitation events or thaws; the total volume of flow from the proposed permit area, during every season of the year, will not vary in a way that adversely affects the ecology of any surface water or any existing or planned use of surface or ground water; and, the appropriate State environmental agency approves the plan.
4.) The owner of the surface of the lands within the permit area has knowingly requested, in writing, as part of the application, that a variance be granted. The request shall be made separately from any surface owner consent given for right-of-entry and shall show an understanding that the variance could not be granted without the surface owner's request.

If a variance is granted, the requirements of the post mining land use criteria shall be included as a specific condition of the permit, and, the permit shall be specifically marked as containing a variance from approximate original contour.

A permit incorporating a variance shall be reviewed by the Division at least every 30 months following the issuance of the permit to evaluate the progress and development of the surface coal mining and reclamation operations to establish that the operator is proceeding in accordance with the terms of the variance. If the permittee demonstrates to the Division that the operations have been, and continue to be, conducted in compliance with the terms and conditions of the permit, the review specified need not be held. The terms and conditions of a permit incorporating a variance may be modified at any time by the Division, if it determines that more stringent measures are necessary to ensure that the operations involved are conducted in compliance with the requirements of the regulatory program. The Division may grant variances only if it has promulgated specific rules to govern the granting of variances in accordance with the provisions of this section and any necessary, more stringent requirements.

Analysis:

The requirements for approximate original contour restoration are couched in terms of backfilling and grading requirements. Those requirements include the following:

- Minimize off-site effects

- Achieve a final surface configuration that closely resembles the general surface configuration of the land before mining

- Provide a subsurface foundation for a vegetative cover capable of stabilizing the surface from erosion

- Support the postmining land use

Off-site effects usually involve hydrologic issues. If the permittee meets the general hydrologic requirements then the Division usually considers that the off-site impacts will be minimized.

The two hydrologic issues that affect AOC at this site are do the drainage patterns blend into and complement the drainage pattern of the surrounding terrain and will the exposed coal seams impact surface and groundwater. A full analysis of the hydrologic requirements will not be done in this section. See the hydrology section of the TA for additional information.

The Division found that the reclaimed surface blends. The general shape of the reclaimed surface is similar to that of the surrounding areas. The surrounding areas have steep slopes with rock outcrops that form near vertical cliffs. See drawing KS1699D sheets 1 and 2 for more details.

The reclaimed surface must closely resemble the general surface configuration of the land before mining. This requirement does not have specific standards that must be met. The Division makes this determination by using the judgment of it staff members. The staff has reviewed the postmining landscape and found that it resembles the surrounding terrain.

The Division usually considers the requirements that the subsurface foundation can support vegetative and is capable of stabilizing the surface from erosion are met if the reclamation plan meets the revegetation requirements. The ability for the reclaimed site to support the postmining land use is discussed in other sections of this TA.

Findings:

The information in the submittal meets the minimum regulatory requirements of this section.

BACKFILLING AND GRADING

Regulatory Reference: 30 CFR 785.15, 817.102, 817.107; R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

Minimum Regulatory Requirements:

General

Disturbed areas shall be backfilled and graded to: achieve the approximate original contour; eliminate all highwalls, spoil piles, and depressions; achieve a postmining slope that does not exceed either the angle of repose or such lesser slope as is necessary to achieve a minimum long term static safety factor of 1.3 and to prevent slides; minimize erosion and water pollution both on and off the site; and, support the approved postmining land use.

The postmining slope may vary from the approximate original contour when approval is obtained from the Division for a variance from approximate original contour requirements, or when incomplete elimination of highwalls in previously mined areas is allowed under the regulatory requirements. Small depressions may be constructed if they are needed to retain moisture, minimize erosion, create and enhance wildlife habitat, or assist revegetation.

If it is determined by the Division that disturbance of the existing spoil or underground development waste would increase environmental harm or adversely affect the health and safety of the public, the Division may allow the existing spoil or underground development waste pile to remain in place. Accordingly, regrading of settled and revegetated fills to achieve approximate original contour at the conclusion of underground mining activities shall not be required if: the settled and revegetated fills are composed of spoil or nonacid- or nontoxic-forming underground development waste; the spoil or underground development waste is not located so as to be detrimental to the environment, to the health and safety of the public, or to the approved postmining land use; stability of the spoil or underground development waste must be demonstrated through standard geotechnical analysis to be consistent with backfilling and grading requirements for material on the solid bench (1.3 static safety factor) or excess spoil requirements for material not placed on a solid bench (1.5 static safety factor); and, the surface of the spoil or underground development waste shall be vegetated in accordance with the revegetation standards for success, and surface runoff shall be controlled in accordance with the regulatory requirements for diversions.

Spoil shall be returned to the mined-out surface area. Spoil and waste materials shall be compacted where advisable to ensure stability or to prevent leaching of toxic materials. Spoil may be placed on the area outside the mined-out surface area in nonsteep slope areas to restore the approximate original contour by blending the spoil into the surrounding terrain if the following requirements are met: all vegetative and organic materials shall be removed from the area; the topsoil on the area shall be removed, segregated, stored, and redistributed in accordance with regulatory requirements; the spoil shall be backfilled and graded on the area in accordance with the general requirements for backfilling and grading.

Disposal of coal processing waste and underground development waste in the mined-out surface area shall be in accordance with the requirements for the disposal of spoil and waste materials except that a long-term static safety factor of 1.3 shall be achieved.

Exposed coal seams, acid- and toxic-forming materials, and combustible materials exposed, used, or produced during mining shall be adequately covered with nontoxic and noncombustible materials, or treated, to control the impact on surface and ground water, to prevent sustained combustion, and to minimize adverse effects on plant growth and the approved postmining land use.

Cut-and-fill terraces may be allowed by the Division where: needed to conserve soil moisture, ensure stability, and control erosion on final-graded slopes, if the terraces are compatible with the approved postmining land use; or, specialized grading, foundation conditions, or roads are required for the approved postmining land use, in which case the final grading may include a terrace of adequate width to ensure the safety, stability, and erosion control necessary to implement the postmining land-use plan.

Preparation of final-graded surfaces shall be conducted in a manner that minimizes erosion and provides a surface for replacement of topsoil that will minimize slippage.

Previously mined areas

Remining operations on previously mined areas that contain a preexisting highwall shall comply with all other reclamation requirements except as provided herein. The requirement that elimination of highwalls shall not apply to remining operations where the volume of all reasonably available spoil is demonstrated in writing to the Division to be insufficient to completely backfill the

reaffected or enlarged highwall. The highwall shall be eliminated to the maximum extent technically practical in accordance with the following criteria:

1.) All spoil generated by the remining operation and any other reasonably available spoil shall be used to backfill the area. Reasonably available spoil in the immediate vicinity of the remining operation shall be included within the permit area.
2.) The backfill shall be graded to a slope which is compatible with the approved postmining land use and which provides adequate drainage and long-term stability.
3.) Any highwall remnant shall be stable and not pose a hazard to the public health and safety or to the environment. The operator shall demonstrate, to the satisfaction of the Division, that the highwall remnant is stable.
4.) Spoil placed on the outslope during previous mining operations shall not be disturbed if such disturbances will cause instability of the remaining spoil or otherwise increase the hazard to the public health and safety or to the environment.

Backfilling and grading on steep slopes

Underground mining activities on steep slopes shall be conducted so as to meet other applicable regulatory requirements and the requirements of this section. The following materials shall not be placed on the downslope: spoil; waste materials of any type; debris, including that from clearing and grubbing; abandoned or disabled equipment; land above the highwall shall not be disturbed unless the Division finds that this disturbance will facilitate compliance with the environmental protection standards and the disturbance is limited to that necessary to facilitate compliance; and, woody materials shall not be buried in the backfilled area unless the Division determines that the proposed method for placing woody material within the backfill will not deteriorate the stable condition of the backfilled area.

Special provisions for steep slope mining

No permit shall be issued for any operations covered by steep slope mining, unless the Division finds, in writing, that in addition to meeting all other regulatory requirements, the operation will be conducted in accordance with the requirements for backfilling and grading on steep slopes. Any application for a permit for surface coal mining and reclamation operations covered by steep slope mining shall contain sufficient information to establish that the operations will be conducted in accordance with the requirements for backfilling and grading on steep slopes.

This section applies to any person who conducts or intends to conduct steep slope surface coal mining and reclamation operations, except: where an operator proposes to conduct surface coal mining and reclamation operations on flat or gently rolling terrain, leaving a plain or predominantly flat area, but on which an occasional steep slope is encountered as the mining operation proceeds; where a person obtains a permit under the provisions for mountaintop removal mining; or, to the extent that a person obtains a permit incorporating a variance from approximate original contour restoration requirements.

Analysis:

For purposes of backfilling and grading, 5 main terraces have been identified on the hillside of the Cottonwood Fan Portal area. These have been designated, from lowest to highest, Terrace 1, Terrace 2, Terrace 3, Terrace 4 and Terrace 4A. Terraces 1 and 2, the lowest terraces, are the areas of most concern.

The Hiawatha coal seam outcrops at Terrace 1. When the Division reviewed the approved reclamation plan, the location of the Hiawatha coal seam outcrop was noted. The Division required that the Permittee completely backfill the exposed Hiawatha coal seam. During backfilling and regarding the Permittee did completely cover the Hiawatha coal seam. See drawing KS16999D sheet 1 and 2 for details.

After the Permittee completed backfilling and grading, the Division's staff inspected the site. They noticed what appeared to be several outcrops of coal above the first and second terraces. The Permittee tested two of the suspect outcrops and found that one met the ASTM requirements for coal.

R645-301-553.300 requires that all coal seams be either covered or treated to control the impact on surface and groundwater and to prevent sustained combustion. The rider coal seams were found to be non-acid and non-toxic forming. See the soils and hydrology sections of the TA for more details about how the rider coal seams could affect surface and groundwater, and vegetation.

The Division is concerned that the rider seams could be subject to sustained combustion. The Permittee states that sustained combustion is unlikely because of the because of the low BTU rating (4,911 BTU/lb.) The Division does not have a standard for determining when coal is capable of sustained combustion.

MSHA has standards for combustible material stored in or around coal seams. Those regulations CFR 77.1915 deal mostly with shaft and mined coal seams, not rider seams.

The rider seams are not exposed to heavy vegetation cover. The Division assumes that if a wildfire were to occur the surrounding vegetation would not provide enough fuel to ignite the rider seams. Several rider seams are exposed in the surrounding area and none are sustaining combustion.

A direct lighting strike could ignite the rider seams. The Division considers the chances of a direct lighting strike remote. Even if a lighting strike were to ignite a rider coal seam the changes of the fire spreading to the Hiawatha seam are remote, and even if that were to occur that area of the Hiawatha seams is not scheduled to be mined.

Terrace 1 received enough fill material to completely cover the Hiawatha coal seam and backfill most of the overlying ledge. The fill was placed at a maximum slope of 1.5h:1v, which will provide a static stability safety factor of 1.3. Gravel drains were incorporated into the fill to drain water from seeps. Boulder-size rocks were placed along the toe of this fill to further enhance its stability. This is important because the fill was placed on a solid rock stratum that slopes away from the face of the ledge.

Terrace 2 received enough material to backfill all but the upper 1 or 2 feet of the overlying ledge. This fill was placed at a maximum slope of 1.5h:1v in order to provide a static stability safety factor of 1.3.

Terraces 3, 4 and 4A each received 1 to 2 feet of material. This material was used to fill the voids at the base of the cuts and will provide a layer of suitable plant growth medium for revegetation.

A diversion along the entire length of the upper boundary of the site collects undisturbed runoff and discharges it into a nearby natural drainage. At its lower end, it makes a right-angle turn on unconsolidated material in order to reach that natural drainage. This diversion has been stable for many years and will thus be left in place.

Findings:

The information in the submittal meets the minimum regulatory requirements of this section.

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR 817.22; R645-301-240.

Minimum Regulatory Requirements:

Redistribution

Topsoil materials shall be redistributed in a manner that: achieves an approximately uniform, stable thickness consistent with the approved postmining land use, contours, and surface-water drainage systems; prevents excess compaction of the materials: and, protects the materials from wind and water erosion before and after seeding and planting.

Before redistribution of the material, the regarded land shall be treated if necessary to reduce potential slippage of the redistribution material and to promote root penetration. If no harm will be caused to the redistributed material and reestablished vegetation, such treatment may be conducted after such material is replaced.

The Division may choose not to require the redistribution of topsoil or topsoil substitutes on the approved postmining embankments of permanent impoundments or of roads if it determines that placement of topsoil or topsoil substitutes on such embankments is inconsistent with the requirement to use the best technology currently available to prevent sedimentation, and, such embankments will be otherwise stabilized.

Nutrients and soil amendments shall be applied to the initially redistributed material when necessary to establish the vegetative cover.

The Division may require that the B horizon, C horizon, or other underlying strata, or portions thereof, removed and segregated, stockpiled, be redistributed as subsoil in accordance with the requirements of the above if it finds that such subsoil layers are necessary to comply with the revegetation requirements.

Analysis:

The five-acre Cottonwood Fan Portal site was initially disturbed under an exploration permit in anticipation of constructing a major portal facility. However, this site was never developed. After the exploratory disturbance, the cast-off material below the site was contemporaneously reclaimed in 1981. Final reclamation of the Cottonwood fan portal area was initiated and completed in November of 1998. The slope reclaimed in 1981 was not re-disturbed and remains as part of the final configuration.

An historical abandoned mine (Old Johnson Mine) is located within the Cottonwood fan portal reclamation area. Historical remnants include an old wagon road and two sealed portals. The old wagon road was upgraded and utilized for hauling topsoil during reclamation of the fan

portal area in 1998. Afterwards, the roadway was reclaimed. The portals remain exposed at the landowner's request.

Redistribution

Backfilling and grading consisted of placing soil on each of the five terraces and the access road to the Old Johnson Mine site (see Drawing KS1710D). The topsoil and subsoil were used interchangeably. The topsoil stockpile was completely utilized and its location was reclaimed. A mass-balance table provided with this submittal on Plate 5-5 indicates that 2,819 cubic yards of topsoil and subsoil were used in the reclamation of the fan portal (48 more yards than previously estimated on 12/14/00), leaving approximately 6,975 cubic yards of subsoil stored in the subsoil pile. (The subsoil remaining has been recontoured and revegetated.)

Volume of Soil used in the Cottonwood Fan Portal Reclamation
(in cubic yards)

	Projected (07-08-00)	As- Built (7/27/01)
Topsoil	1061	1061
Subsoil (includes access road)	2412	1759
Total	3473	2819

The information in the topsoil/subsoil distribution table on Plate 5-5 is presented in two ways:

1. There were 3,129.03 cubic yards of topsoil and subsoil used to reclaim Terrace 1 through 4a and the CFP access road.
2. There were 2,820.18 cubic yards of topsoil and subsoil used in the project.

The difference between the two numbers 3129 cu yds and 2820 cu yds is approximately 10% or 380 cu yds. In a telephone conversation with Mr. Dennis Oakley of Energy West Mining on October 29, 2001, he explained that the 10% difference was within the accuracy of the method of surveying. The 10% difference in accounting may also be due to the fact that approximately 264 cubic yards of cut from the access road was utilized as fill in the final reclamation of the access road, contributing to the total fill volume. A mass balance table on Plate 5-7 supports this point, that 506.10 cubic yards was used to back fill the CFP access road, of this approximately 242 cubic yards came from the topsoil/subsoil pile and was accounted for in the mass balance calculation on Plate 5-5. The rest of the fill for the road came from cuts along the road.

The approved MRP shows cross-sectional views for soil placement on the reclaimed terraces (Plate 5-3, Sheets 1 and 2) and the Old Johnson portal access road (Plate 5-7) which correspond to stations on Plate 5-5. The manner in which this information is presented makes it

extremely difficult to cross-check the information in the narrative and with that provided on the plates. There is no horizontal or vertical scale for the cross sections. There are no tick marks to indicate where elevation markings belong on the cross-section line.

Soil Stabilization and Erosion Control

Various size rocks and boulders were used on the surface for erosion control and slope stability as well as for aesthetics. No evidence of slope sloughing was noted in a field visit on January 4, 2001.

The soil was treated with a tackifier and straw mulch on level ground and with hydromulch and tackifier on steep slopes (as indicated on page 6).

One particular location in the vicinity of the Johnson Mine site requires monitoring by the Permittee and Division to protect the soil from further erosion. This is a straight drop chute which carries water from above the reclaim site into the disturbed area with great force. This is in the vicinity of the disturbed area perimeter as it comes west and then north above the Johnson Mine Site. This also happens to be the location of the Johnson Mine Site Coal Chute. During a site visit on January 4, 2001, the Permittee agreed to monitor this location frequently and take steps to ensure that a large gully does not form. The Permittee is expecting that as plants take root, the erosion will cease.

Remaining Subsoil Piles

Both the topsoil and subsoil piles are shown with soil volumes calculated using baseline cross-section stations as shown on the MRP Plate 5-4. The salvaged topsoil pile contained approximately 1,061 cubic yards, all of which was used in the final reclamation of the fan portal. The subsoil pile contained approximately 8,733 cubic yards of soil. Approximately 6,975 cubic yards of soil remains in the subsoil stockpile after reclaiming the Cottonwood fan portal area.

The remaining subsoil stockpile was pocked and revegetated. It was not treated with a tackifier.

This submittal indicates that the remaining stored soil will be used to reclaim the Cottonwood overland tube conveyor, intake and diesel portals, and Trail Mountain Mine if needed.

Findings:

Information provided in the application meets the minimum required information for Phase I bond release as per R645-301-880.310, completion of backfilling and regrading and drainage control of a bonded area in accordance with the approved reclamation plan.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR 701.5, 784.24, 817.150, 817.151; R645-100-200, -301-513, -301-521, -301-527, -301-534, -301-537, -301-732.

Minimum Regulatory Requirements:

Reclamation

A road not to be retained under an approved postmining land use shall be reclaimed in accordance with the approved reclamation plan as soon as practicable after it is no longer needed for mining and reclamation operations. This reclamation shall include: closing the road to traffic; removing all bridges and culverts unless approved as part of the postmining land use; removing or otherwise disposing of road-surfacing materials that are incompatible with the postmining land use and revegetation requirements; reshaping cut and fill slopes as necessary to be compatible with the postmining land use and to complement the natural drainage pattern of the surrounding terrain; protecting the natural drainage patterns by installing dikes or cross drains as necessary to control surface runoff and erosion; and, scarifying or ripping the roadbed, replacing topsoil or substitute material and revegetating disturbed surfaces.

Retention

A road to be retained for an approved postmining land use shall be classified as a primary road and designed constructed and maintained in accordance with the requirements for primary roads and in consideration of the approved postmining land use.

Analysis:

Reclamation

The access road to the Cottonwood fan portal area was reclaimed; see cross sections on drawing KS1729C. The access road was reclaimed as a trail for access to the Old Johnson mine site. The trail does not have many of the typical features of an engineered road such as ditches and slide that slope away from the centerline. However, the trail has been designed to be stable and there are no signs of instability or erosion.

The trail is needed for access to the Old Johnson site because 1) the portals seals at the Old Johnson mine are failing and AML needs access to the site for repairs and 2) the public needs access to the historical mine site. Thus, the trail is compatible with the postmining land use.

Retention

No roads will be retained at the Cottonwood fan portal. The access road to the site that went through the Old Johnson mine site was reclaimed to a foot trail.

Findings:

The information in the submittal meets the minimum regulatory requirements of this section.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

Minimum Regulatory Requirements:

Hydrologic reclamation plan

The application shall include a plan, with maps and descriptions, indicating how the relevant regulatory requirements will be met. The plan shall be specific to the local hydrologic conditions. It shall contain the steps to be taken during mining and reclamation through bond release to minimize disturbance to the hydrologic balance within the permit and adjacent areas; to prevent material damage outside the permit area; and to meet applicable Federal and State water quality laws and regulations. The plan shall include the measures to be taken to: avoid acid or toxic drainage; prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow; provide water treatment facilities when needed; and control drainage. The plan shall specifically address any potential adverse hydrologic consequences identified in the PHC determination and shall include preventive and remedial measures.

Each application shall contain descriptions, including maps and cross sections, of stream channel diversions and other diversions to be constructed within the proposed permit area to achieve compliance with the performance standards for those structures.

Postmining rehabilitation of sedimentation ponds, diversions, impoundments, and treatment facilities

Before abandoning a permit area or seeking bond release, the operator shall ensure that all temporary structures are removed and reclaimed, and that all permanent sedimentation ponds, diversions, impoundments, and treatment facilities meet the requirements of this Chapter for permanent structures, have been maintained properly and meet the requirements of the approved reclamation plan for permanent structures and impoundments. The operator shall renovate such structures if necessary to meet the requirements of this Chapter and to conform to the approved reclamation plan.

Analysis:

Discharges into an Underground Mine

No underground mine openings exist in the Cottonwood fan portal site. Therefore, water does not discharge into underground mine openings at this site. However, sealed portals do exist in the Johnson mine site.

Gravity Discharges

There are no underground mine openings in the Cottonwood Fan Portal Phase 1 reclamation site. Therefore, water does not discharge from underground mine openings at this site. However, sealed portals do exist in the Johnson mine site.

Diversions

No modification or reclamation has been done to the two diversion ditches, the undisturbed drainage ditch (UD3) across the top of the site and the disturbed drainage ditch (DD4) through the area reclaimed in 1981.

UD3 will remain as a permanent diversion. DD4 will be removed when the sedimentation pond is removed.

Sediment Control Measures

Plate 5-5 in the MRP shows a silt fence (also described on Soils - page 6) at the top of the area revegetated in 1981. The revised Plate 5-5 no longer shows this silt fence, but this is in agreement with Plate 3-13, the Hydrological Map, which does not show this silt fence.

Hydroseed and hydromulch or blanket mulch were placed on slopes and benches where soils were redistributed, as committed to in the MRP.

Impoundments

Two sediment basins will remain on the site until erosion is control by vegetation.

Findings:

This section of the proposed Phase I Bond Release is considered adequate in regard to the requirements of the regulations.

MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS

Regulatory Reference: 30 CFR 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

Minimum Regulatory Requirements:

Each application shall contain maps, plans, and cross sections which show the reclamation activities to be conducted, the lands to be affected throughout the operation, and any change in a facility or feature to be caused by the proposed operations, if the facility or feature was shown and described as an existing structure.

The permit application must include as part of the reclamation plan information, the following maps, plans and cross sections:

Affected area boundary maps

The boundaries of all areas proposed to be affected over the estimated total life of all mining activities and reclamation activities, with a description of size, sequence, and timing of phased reclamation activities and treatments. All maps and cross sections used for reclamation design purposes shall clearly show the affected and permit area boundaries in reference to the reclamation work being accomplished.

Bonded area map

The permittee shall identify the initial and successive areas or increments for bonding on the permit application map and shall specify the bond amount to be provided for each area or increment. The bond or bonds shall cover the entire permit area, or an identified increment of land within the permit area upon which the operator will initiate and conduct surface coal mining and reclamation operations during the initial term of the permit. As surface coal mining and reclamation operations on succeeding increments are initiated and conducted within the permit area, the permittee shall file with the Division an additional bond or bonds to cover such increments. Independent increments shall be of sufficient size and configuration to provide for efficient reclamation operations should reclamation by the Division become necessary.

Reclamation backfilling and grading maps

Contour maps and cross sections to adequately show detail and design for backfilling and grading operations during reclamation. Where possible, cross sections shall include profiles of the pre-mining, operations, and post-reclamation topography. Contour maps shall be at a suitable scale and contour interval so as to adequately detail the final surface configuration. When used in the formulation of mass balance calculations, cross sections shall be at adequate scale and intervals to support the mass balance calculations. Mass balance calculations derived from contour information must demonstrate that map scale and contour accuracy are adequate to support the methods used in such earthwork calculations. Detailed cross sections shall be provided when required to accurately depict reclamation designs which include, but are not limited to: terracing and benching, retained roads, highwall remnants, slopes requiring geotechnical analysis, and embankments of permanent impoundments.

Reclamation facilities maps

Location of each facility that will remain on the proposed permit area as a permanent feature, after the completion of underground mining activities. Location and final disposition of each sedimentation pond, permanent water impoundment, coal processing waste bank, and coal processing water dam and embankment, disposal areas for underground development waste and excess spoil, and water treatment and air pollution control facilities within the proposed permit area to be used in conjunction with phased reclamation activities or to remain as part of reclamation.

Final surface configuration maps

Sufficient slope measurements to adequately delineate the final surface configuration of the area affected by surface operations and facilities, measured and recorded according to the following: each measurement shall consist of an angle of inclination along the prevailing slope extending 100 linear feet above and below or beyond the coal outcrop or the area disturbed or, where this is impractical, at locations specified by the Division; where the area has been previously mined, the measurements shall extend at least 100 feet beyond the limits of mining disturbances, or any other distance determined by the Division to be representative of the post-reclamation configuration of the land; and, slope measurements shall take into account variations in slope, to provide accurate representation of the range of slopes and reflect geomorphic differences of the area disturbed through reclamation activities.

Reclamation monitoring and sampling location maps

Elevations and locations of test borings and core samplings. Elevations and locations of monitoring stations used to gather data on water quality and quantity, subsidence, fish and wildlife, and air quality, if required, to demonstrate reclamation success.

Reclamation surface and subsurface manmade features maps

The location of all buildings in and within 1,000 feet of the proposed permit area, with identification of the current or proposed use of the buildings at the time of final reclamation. The location of surface and subsurface manmade features within, passing through, or passing over the proposed permit area, including, but not limited to, major electric transmission lines, pipelines, fences, and agricultural drainage tile fields. Each public road located in or within 100 feet of the proposed permit area and all roads within the permit area which are to be left as part of the post-mining land use. Buildings, utility corridors, and facilities to be used in conjunction with reclamation or to remain for final reclamation.

Reclamation treatments maps

The location and boundaries of any proposed areas for reclamation treatments including but not limited to: location, extent and depth of materials used for resoiling; location, extent and types of treatments for revegetation including soil preparation, soil amendments, mulching, seeding, variations in seed mixtures, and other revegetation treatments. Each water diversion, collection, conveyance, treatment, storage and discharge facility to be used during reclamation. Each facility to be used to protect and enhance fish and wildlife related environmental values. other treatments or applications which are specifically designed or required as part of phased or final reclamation activity.

Certification Requirements.

Cross sections, maps, and plans required to show the design, location, elevation, or horizontal or vertical extent of the land surface or of a structure or facility used to conduct mining and reclamation operations shall be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, a professional geologist, or in any State which authorizes land surveyors to prepare and certify such cross sections, maps, and plans, a qualified, registered, professional land surveyor, with assistance from experts in related fields such as landscape architecture.

Each detailed design plan for an impounding structure that meets or exceeds the size or other criteria of the Mine Safety and Health Administration, 30 CFR Section 77.216(a) shall: be prepared by, or under the direction of, and certified by a qualified registered professional engineer with assistance from experts in related fields such as geology, land surveying, and landscape architecture; include any geotechnical investigation, design, and construction requirements for the structure; describe the operation and maintenance requirements for each structure; and, describe the timetable and plans to remove each structure, if appropriate.

Each detailed design plan for an impounding structure that does not meet the size or other criteria of 30 CFR Section 77.216(a) shall: be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, or in any State which authorizes land surveyors to prepare and certify such plans, a qualified, registered, professional land surveyor, except that all coal processing waste dams and embankments shall be certified by a qualified, registered, professional engineer; include any design and construction requirements for the structure, including any required geotechnical information; describe the operation and maintenance requirements for each structure; and, describe the timetable and plans to remove each structure, if appropriate.

Analysis:

Affected Area Boundary Maps

Plate 5-5, Drawing KS1710D Cottonwood Fan Portal Surface Facilities Map Phase I Reclamation, shows the area for which the permittee request Phase I bond release. The permittee shows the areas that have interim revegetation, final vegetation and final reclamation. The drainage controls, French drains, have also been shown.

Drawing KS17170D shows the areas for which Phase I bond release has been sought. The undisturbed Johnson Mine site is clearly shown as an undisturbed island.

On Drawing KS17170D, the permittee lists the dates for some reclamation activities. The revegetated area had final reclamation done in 1981 and the terraces were backfilled on November 1998.

Bonded Area Map

The Division considers the affected area map to be equivalent to the bonded area map for the Cottonwood Fan Portal.

Reclamation Backfilling and Grading Maps

Drawing KS1729C shows the as-built for the reclaimed road at the Cottonwood fan portal. Drawing KS1715D sheet 1 and 2 shows the as-built for the reclaimed fan portal area. Those drawings are adequate for the Division to used to determine if the site meets the minimum reclamation requirements.

Reclamation Facilities Maps

The facilities associated with the Cottonwood Fan Portal area are shown on drawing KS1742D. The retained facilities include the undisturbed drainage ditch, ditch DD4 and a 24-inch culvert that passes beneath the Emery County road.

Final Surface Configuration Maps

The final surface configuration is shown on drawing KS1700D.

Reclamation Monitoring and Sampling Location Maps

The permittee did not show any monitoring or sampling locations on the maps.

Findings:

The information in the submittal meets the minimum regulatory requirements of this section.

BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: 30 CFR 800; R645-301-800, et seq.

Minimum Regulatory Requirements:

General

After a permit application has been approved, but before a permit is issued, the applicant shall file with the Division, on a form prescribed and furnished by the Division, a bond or bonds for performance made payable to the Division and conditioned upon the faithful performance of all the requirements of the Act, the regulatory program, the permit, and the reclamation plan.

The bond or bonds shall cover the entire permit area, or an identified increment of land within the permit area upon which the operator will initiate and conduct surface coal mining and reclamation operations during the initial term of the permit. As surface coal mining and reclamation operations on succeeding increments are initiated and conducted within the permit area, the permittee shall file with the Division an additional bond or bonds to cover such increments.

The operator shall identify the initial and successive areas or increments for bonding on the permit application map and shall specify the bond amount to be provided for each area or increment. Independent increments shall be of sufficient size and configuration to provide for efficient reclamation operations should reclamation by the Division become necessary.

An operator shall not disturb any surface areas, succeeding increments, or extend any underground shafts, tunnels, or operations prior to acceptance by the Division of the required performance bond.

The applicant shall file, with the approval of the Division, a bond or bonds under one of the following schemes to cover the bond amounts for the permit area as determined: a performance bond or bonds for the entire permit area; a cumulative bond schedule and the performance bond required for full reclamation of the initial area to be disturbed; or, an incremental-bond schedule and the performance bond required for the first increment in the schedule.

Form of bond

The Division shall prescribe the form of the performance bond. The Division may allow for: a surety bond; a collateral bond; a self-bond; or a combination of any of these bonding methods.

Performance bond liability shall be for the duration of the surface coal mining and reclamation operation and for a period which is coincident with the operator's period of extended responsibility for successful revegetation or until achievement of the reclamation requirements of the Act, regulatory programs, and permit, whichever is later.

With the approval of the Division, a bond may be posted and approved to guarantee specific phases of reclamation within the permit area provided the sum of phase bonds posted equals or exceeds the total amount required. The scope of work to be guaranteed and the liability assumed under each phase bond shall be specified in detail.

Isolated and clearly defined portions of the permit area requiring extended liability may be separated from the original area and bonded separately with the approval of the Division. Such areas shall be limited in extent and not constitute a scattered, intermittent, or checkerboard pattern of failure. Access to the separated areas for remedial work may be included in the area under extended liability if deemed necessary by the Division.

The bond liability of the permittee shall include only those actions which he or she is obligated to take under the permit, including completion of the reclamation plan, so that the land will be capable of supporting the postmining land use approved. Implementation of an alternative postmining land use which is beyond the control of the permittee, need not be covered by the bond. Bond liability for prime farmland shall be specific to include productivity requirements.

Determination of bond amount

The amount of the bond required for each bonded area shall: be determined by the Division; depend upon the requirements of the approved permit and reclamation plan; reflect the probable difficulty of reclamation, giving consideration to such factors as topography, geology, hydrology, and revegetation potential; and, be based on, but not limited to, the estimated cost submitted by the permit applicant.

The amount of the bond shall be sufficient to assure the completion of the reclamation plan if the work has to be performed by the Division in the event of forfeiture, and in no case shall the total bond initially posted for the entire area under 1 permit be less than $10,000.

An operator's financial responsibility for repairing material damage resulting from subsidence may be satisfied by the liability insurance policy required in this section.

Terms and conditions for liability insurance

The Division shall require the applicant to submit as part of its permit application a certificate issued by an insurance company authorized to do business in the United States certifying that the applicant has a public liability insurance policy in force for the surface coal mining and reclamation operations for which the permit is sought. Such policy shall provide for personal injury and property damage protection in an amount adequate to compensate any persons injured or property damaged as a result of the surface coal mining and reclamation operations, including the use of explosives, and who are entitled to compensation under the applicable provisions of State law. Minimum insurance coverage for bodily injury and property damage shall be $300,000 for each occurrence and $500,000 aggregate.

The policy shall be maintained in full force during the life of the permit or any renewal thereof and the liability period necessary to complete all reclamation operations under this Chapter.

The policy shall include a rider requiring that the insurer notify the Division whenever substantive changes are made in the policy including any termination or failure to renew.

The Division may accept from the applicant, in lieu of a certificate for a public liability insurance policy, satisfactory evidence from the applicant that it satisfies applicable State self-insurance requirements approved as part of the regulatory program and the requirements of this section.

Analysis:

Determination of Bond Amount

The permittee states that they want to reduce the bond amount for the area from $114,708 to $45,883.

Findings:

The requirements of this section of the regulations are considered adequate concerning the proposed Phase I bond release.

RULES INDEX