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Norman H. Bangerter
Governor
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State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340

November 6, 1992

Mr. Richard H. Allison, Jr. P.E.
AMAX Coal Company, Belle Ayr Mine
P. O. Box 3005
2273 Bishop Road
Gillette, Wyoming 82717-3005

Dear Mr. Allison:

Re: Conditional Approval for Sowbelly Canyon Reclamation Plan, AMAX Coal Company, Castle Gate Mine, ACT/007/004/, Folder #3, Carbon County, Utah

The Division has completed a review of your Sowbelly Canyon submittal intended to satisfy the requirements of the settlement agreement under Docket 91-001. The submittal is considered adequate to satisfy the requirements of the Division Order and subsequent NOV N91-28-2-1 for the Sowbelly Canyon Area. The NOV and Division Order are still in effect for other areas of the mine. The Sowbelly Canyon submittal is hereby approved as part of your reclamation plan and AMAX is approved to proceed with reclamation as outlined in the plan with the following condition.

> Prior to regrading of the Pond 5 location of Sowbelly Canon, AMAX Coal Company, in consultation with the Division, should determine the extent and location of saline-sodic overburden, and provide for special handling or burial of this toxic material to comply with the requirements of R645-301-553.252.

Please review the enclosed technical memos by Paul Baker, Priscilla Burton and Randy Harden, which discuss compliance in Sowbelly Canyon in more detail. You should be aware that additional submittals are required for remaining areas of the mine. The Division looks forward to working with you on the remaining issues.

Reclamation of Sowbelly Canyon should proceed as weather allows, and as expeditiously as possible. Please keep us informed. Thank you for your efforts in resolving these matters. If you have questions, please call me or the appropriate technical review person.

Sincerely

Daron R. Haddock

Daron R. Haddock
Permit Supervisor

Enclosure
cc: P. Baker
P. Burton
R. Harden
R. Summers
SOWBCANY.APP

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TO: Daron Haddock, Permit Supervisor

FROM: Paul Baker, Reclamation Biologist

DATE: November 4, 1992

RE: October 28, 1992, Resubmittal of the Reclamation Plan for Sowbelly Gulch, AMAX Coal Co., Castle Gate Mine, Folder #2, ACT/007/004, Carbon County, Utah

SUMMARY

The Sowbelly Gulch reclamation plan and Chapter 9 have been revised to conform to the requirements of my September 16, 1992, memorandum.

ANALYSIS

R645-301-341 **Revegetation Plan**

Deficiency:

1. The mulching plan presented in the revised Chapter 9 must be used at Sowbelly Canyon, and Section 3.2 of the plan must be revised to be consistent with Chapter 9. Universal Soil Loss Equation calculations contained in the appendices must also be revised to reflect the plan in Chapter 9.

Response and Analysis:

The revised Chapter 9 received October 26, 1992, and Chapter 3.2 are consistent, and no further changes to the Chapter 9 mulching plan need to be made.

Deficiencies:

None.

Deficiency:

2. The statement on page 3.2-26 that reclaimed areas will be seeded with grasses and legumes needs to be clarified to be consistent with plans to use shrubs and non-leguminous forbs.

Response and Analysis:

Section 3.2-5(4) has been revised to state that grasses, legumes, forbs, and shrubs will be planted.

Deficiencies:

None.

Deficiency:

3. The seed mix to be used at Sowbelly Canyon must meet the requirements of the performance standards. Seed mix 1 may not be used unless Amax can demonstrate that the introduced species in it are necessary and desirable to achieve the postmining land use. The use of the revised seed mix 3 is recommended.

Response and Analysis:

The seed mixes in Chapter 9 have been revised so that they are acceptable, and Chapter 3.2 references the correct seed mixes.

Deficiencies:

None.

Deficiency:

4. This section must include plans to restore riparian vegetation within 20 feet of stream channels. The existing plan to use planting mix 2 or a modified version of the seedling planting list in species mix 4 of the proposed Chapter 9 are suggested.

Response and Analysis:

Areas within 20 feet of channels SBRD-1 (A, B, C, and D) will be seeded with species list 3 from Chapter 9. Species list 3 is a riparian area mixture and is acceptable for these areas. AMAX may want to exclude willows from the planting mix as willows will probably not grow in these drainages.

Deficiencies:

None.

Deficiency:

5. In accordance with R645-301-353, all areas within the range of seeding equipment must be seeded.

Response and Analysis:

Exhibit 3.2-5 states that cut slopes to remain will be treated as described in Chapter 9. The newest submittal of Chapter 9 specifically includes highwall and cut slope areas.

Deficiencies:

None.

RECOMMENDATIONS

All of the deficiencies outlined in the previous review of this chapter have been responded to satisfactorily. Approval is recommended.

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November 6, 1992

TO: Daron Haddock, Permit Supervisor

FROM: Priscilla Burton, Senior Reclamation Soils Specialist

RE: Final Review. Sowbelly Canyon Reclamation Plans. AMAX Coal Co. ACT/007/004-92C Permit Stipulation under Docket 91-001. Folder #2. Carbon Co. Utah.

SUMMARY:

In a technical review dated 9/18/92, I commented upon a area of sodic soils reported with Sowbelly sampling conducted in 1990 and 1991. The present reclamation plan does not identify the area of concern on a map or in the narrative. The present plan does indicate that the existing soils will be evaluated for toxicity of saline-sodic overburden with 9 samples (1 per 2.3 acres). The reclamation plan is written in accordance with R645-301-731.300. No requests for exemption from the general requirements of R645-301-553.250 have been submitted.

ANALYSIS:

R645-301-243. Soil Nutrients and Amendments.

Proposal:

The plan calls for fertilization based upon soil testing as described on page 3.2-17. Testing includes an analysis of nitrogen, phosphorus and potassium. Sampling is included in weeks 1-6 in the reclamation time table (sec 3.2-6).

Analysis:

The applicant is in compliance with this rule. The additional cost of sampling during reclamation will be addressed in a separate submittal (page 5, 10/28/92, Response Summary).

553.250. Refuse Piles.

Proposal:

Special handling and sampling of the regraded site is discussed on pages 3.2-16 and 3.2-17 of the reclamation plan. Acid and Toxic forming materials will be buried no less than four feet deep. One sample per 2.3 acres will be taken. Sampling depths are not specified. Segregation of samples is not specified. Specific plans for the sodic material identified through sampling to date is not mentioned. The location of the sodic material is not identified in the narrative or on a map. Field sampling to determine the extent of the material is not indicated in the plan.

Analysis (by Itemized Deficiency):

Deficiency

1. *Prior to regrading of the Pond 5 location of Sowbelly Canyon, AMAX Coal Co., in consultation with the Division, should determine the extent and location of saline-sodic overburden, and provide for special handling or burial of this toxic material to comply with the requirements of R645-301-553.252.*

The present plan does not adequately address this stipulation. Although a general commitment to follow the regulations was found. A discussion of isolation and handling of the sodic material known to be present on the site has been avoided.

Previous testing (1990) of Sowbelly canyon soils from 0 - 4' illuminated an area of potential revegetation difficulty: the location of sample S-7 (near the existing pond 5). The plan states on page 3.2-1 that *"some coal or coal waste has in the past, been dumped on the embankment slopes in this area."* Site S-7 was further investigated in 1991 and the results indicate that area U-7 (30' downstream) from site S-7 is extremely saline-sodic. The site was investigated at intervals down to four feet. The Electrical Conductivities (EC) reported ranged from 30 to 103 mmhos/cm and increased with depth. The Sodium Absorption Ratios also increased with depth from 110 to 361. The Exchangeable Sodium Percentages (ESP) were analyzed for the site and ranged from 40 to 100% of the total Cation Exchange Capacity. (ESP values were not repeatable in this study, although the SAR and EC values were. The high values of sodium may have exceeded the confidence interval of the sodium replacement method for analysis of ESP. This possibility was discussed with Ms. Linda Spencer of Intermountain Laboratories in Farmington, NM, 9/18/92.)

A saline-sodic soil by definition is one with an EC of greater than 4 mmhos/cm and an ESP greater than 15% of the total exchange capacity. Over time, leaching of these soils will likely create increases in pH and concentrations of available sodium which is toxic to plant growth and detrimental to soil structure. The low level of calcium and magnesium salts in the soil will exacerbate the situation.

Prior to the onset of regrading in this location, the plan must include measures to determine the extent and location of this saline-sodic material and insure burial or removal of the material from the site. Burial must be out of the plant root zone (at a minimum below four feet) and sufficiently distant from surface waters and out of reach of ground waters. To determine the extent of the material, field sampling of pH and EC can be conducted in the location of Pond 5. Any EC levels greater than 8 mmhos/cm will be considered suspect and greater than 15 mmhos/cm will be considered unacceptable (see Division Guidelines). Values of pH 5.0 and/or 8.5 will be considered suspect and values of pH 4.5 and less and of 9.0 or more will be considered unacceptable. Intensifying sampling in areas suspect will enable field mapping of the toxic material. If removal of the material is the preferred alternative to burial, sampling for pH and EC will be required to a depth four feet below the proposed final reclamation contours in the area of the toxic material, to ensure complete removal within the root zone.

Deficiency

2. *AMAX Coal Co. should provide a commitment in the Sowbelly Canyon reclamation plan to identify and cover all acid/toxic forming materials with a minimum of four feet of the best available, nontoxic and noncombustible material in accordance with Regulation R645-301-553.252 and R645-301-731.300.*

The Sowbelly reclamation plan states that acid/toxic material will be buried no less than four feet in accordance with R645-301-731.300. The Division should emphasize that all refuse must be buried four feet deep in accordance with R645-301-553.252. Although this practice is not explicitly stated within the Sowbelly reclamation plan, no request for an exception to this rule/performance standard has been received. Therefore, the Division will hold the Permittee responsible for compliance with the regulations and performance standards of R645-301-553.250: *...coal mine waste will be covered with a minimum of four feet of the best available, nontoxic and noncombustible material* ....This requirement should be stated in the approval document for the Sowbelly reclamation.

Deficiency

3. *AMAX Coal Co. should include field sampling for pH and EC, and special handling provisions for toxic overburden in the Reclamation Timetable (Section 3.2-6) and Reclamation Cost Estimates (Section 3.1-10).*

The intention of this stipulation was to ensure identification of acid and toxic forming material in the top four feet of root zone. Pages 3.2-16 and 3.2-17 cover these commitments. The intention of this stipulation appears to have been met, however several comments should be made clear on conducting soil sampling.

1. Laboratory rather than field sampling seems implied by the text. Lab generated information will delay grading decisions, therefore, field sampling by a qualified individual is recommended for pH and EC.

2. Sampling for pH and EC should be conducted to a depth of four feet and samples should be depth segregated as follows: 0-6", 6-12", 12-24", 24-36", 36-48", resulting in four subsamples for every location sampled.

3. Locations of samples will be recorded on a map for review.

These specifics are mentioned to enable AMAX to present adequate information to the Division for evaluation of the present grading plan and any field changes to the present plan.

RECOMMENDATIONS:

AMAX Coal Co has not adequately addressed Deficiency #1 of this regulation. The deficiency remains as written and should be included as a condition of approval for reclamation.

Deficiency #2 has been addressed. No request for exemption to the performance standard of four feet of cover over coal mine waste has been received by the Division. The regrading plan will be evaluated according to the general requirement of R645-301-553.250 in the absence of this request.

Deficiency #3 has been addressed. Suggestions for sampling are proposed to facilitate the Divisions' understanding and evaluation of reclamation progress.

One deficiency remains to be addressed and is restated below, this deficiency should

One deficiency remains to be addressed and is restated below, this deficiency should be included as a condition of approval of the Sowbelly reclamation plan.

1. Prior to regrading of the Pond 5 location of Sowbelly Canyon, AMAX Coal Co., in consultation with the Division, should determine the extent and location of saline-sodic overburden, and provide for special handling or burial of this toxic material to comply with the requirements of R645-301-553.252.

The Division must ensure that the requirements of R645-301-553.250 are met. Upon subsequent reclamation or bond release inspections, the Division will employ simple techniques (field pH and EC) to verify the non-toxic, non-acidic nature of the top four feet of regraded spoils.

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November 4, 1992

TO: Daron Haddock, Permit Supervisor

FROM: Randy Harden

RE: **Sowbelly Submittal, AMAX Coal Company, Castle Gate Mine, ACT/007/004-92C, Folder #2, Carbon County, Utah**

Summary:

In accordance the with Stipulation under Docket 91-001, AMAX Coal Company has submitted revised plans for the Sowbelly Canyon Area. These plans were received by the Division on August 18, 1992. After review by the Division, a second submittal of information was made on October 29, 1992.

The following review in consideration of the outstanding information as a result of the Division Order issued to AMAX and the information incorporated into those proposed changes to the mining and reclamation plan.

Comments and completeness of the information within the text of this review is in regard only to those areas described in Sowbelly Canyon unless noted otherwise in the comments. Determination of completeness of the response to the Division Order and Compliance of those requirements for approval cannot be made until such time that all of the required information has been submitted as required by the Division Order.

Analysis:

Division Order 2)

> ***R614-301-122. Permit Application Format and Contents.*** *The information contained within the permit must be organized to ensure that each Figure, Plate, Diagram, Analysis etc. that is referenced is included within the Permit Application. The language used in the permit application must accurately differentiate existing and proposed facilities, activities, treatments, etc. This information shall be provided on or before June 1, 1991.*

Proposal:

Information submitted for the Sowbelly Canyon area is specific only to that section of the plan. A new table of contents for section 3.2 of the plan has been provided.

Analysis:

With respect to section 3.2 of the plan, the operator has revised the plan. However, requirements of this section of the Division Order apply to the plan in its entirety.

The operator has committed to revise the organization and content of this section of the plan in conjunction with the information to be provided for the Remaining areas as part of the Settlement Agreement.

Deficiencies:

None.

Division Order 3)

> ***R614-301-140. Maps and Plans.*** *The PERMITTEE shall submit to the DIVISION, a schedule for providing complete and accurate maps and drawings to depict the current existing conditions for all facilities, and, proposed reclamation treatments. This schedule shall be provided on or before March 1, 1991.*

Proposal:

In accordance with the terms and conditions of the Stipulation (Settlement Agreement), the operator has committed to a schedule for the submittal of the information required in this section of the Division Order.

Analysis:

The schedule submitted in conjunction with the Stipulation will be administered, revised and completed under the terms and conditions of the Stipulation.

Deficiencies:

None.

Division Order 4)

R614-301-142. Maps and Plans. *The PERMITTEE has not provided maps and plans with the permit application which distinguish among each of the phases during which coal mining and reclamation operations were or will be conducted at any place within the life of operations. At a minimum, distinctions will be clearly shown among those portions of the life of operations in which coal mining and reclamation operations occurred: prior to August 3, 1977; after August 3, 1977, and prior to either May 3, 1978; after May 3, 1978 and prior to the approval of the State Program; and, after the estimated date of issuance of a permit by the Division under the State Program. The PERMITTEE must provide identification as to the date and the use of those areas and facilities within the permit area which have been incorporated into the underground mining activities. Those areas affected by previous mining operations (including cutslopes and outslopes of pads and roads) and used in conjunction with current underground coal mining facilities are to be included in the disturbed areas. This information shall be provided on or before March 1, 1991.*

Proposal:

The operator has provided revised drawings for the Sowbelly Canyon Area. The Post Mining Reclamation Treatments Map, Exhibit 3.2-5 shows the proposed final contours of the area, cross section locations and watershed areas used for reclamation drainage area calculations.

Exhibit 3.2-1A has been revised to show the location and the extent of the areas previously disturbed by mining (pre-SMCRA) and those portions of the previously disturbed area which are incorporated into the disturbed area boundary for current mining operations. This exhibit is also used to identify surface facilities within the Sowbelly Canyon Area.

Analysis:

Exhibit 3.2-1A has been modified to delineate the pre-SMCRA areas. The drawing shows the areas which were previously affected by mining operations (pre-SMCRA), and identifies those areas which lay within the disturbed area boundaries which have been used in conjunction with current mining operations. In the text of the mining and reclamation plan, the operator has indicated that essentially all of the disturbed area shown with the exception of drainage controls, occurred prior to 1976. In context with the requirements of this section of the regulations, it can be assumed that these disturbances occurred prior to August 3, 1977, and drawing has been revised to show the pre-SMCRA disturbed areas both within the disturbed and adjacent areas.

The disturbed area boundary shown on Exhibit 3.2-1A has been modified to coincide with the disturbed area boundary delineated on the operations contour map or the reclamation contour drawings. Due to distortion of the orthophoto, some distortion of the disturbed area boundary is evident due to scaleability of the drawings. Disturbed area boundaries for all drawings have been made to coincide with each other.

Deficiencies:

None.

Division Order 13)

R614-301-340. Reclamation Plan. *The PERMITTEE must provide plans to protect reclaimed areas for a minimum 2-year period. The PERMITTEE will revise the MRP to show 1) seedbed preparation plans(i.e. deep ripping to 18-24 inches), 2) that seed and fertilizer will not be mixed in the hydroseeder, 3) plans for the use of the supplemental planting mix for ephemeral/intermittent drainages, including locations(shown on the reclamation maps) and timing of the planting operations, 4) the final revegetation plans (as identified in the July 1990 correspondence) for the cut and fill slopes associated with the Crandall Canyon access road, 5) Clear plans for the reclamation of Gravel Canyon. This information must be provided on or before March 1, 1991.*

Proposal:

This Division Order was not specifically addressed as part of the Sowbelly Canyon area submittal.

Analysis:

The requirements of this section of the Division Order apply to the plan in its entirety.

Deficiencies:

This information should be provided with the information provided for the Remaining Areas as part of the Settlement Agreement.

Division Order 17)

> ***R614-301-550. Reclamation Design Criteria and Plans.*** *The permit application must include site specific plans that incorporate the design criteria for reclamation activities. These design criteria and plans shall include but not be limited to: phased reclamation treatments and designs throughout the permit liability period, designs for temporary and permanent surface features, including diversions, impoundments, sediment control structures, and other facilities which will require construction throughout the reclamation process; specific plans and details for all permanent facilities to remain as part of or in conjunction with post mining land use, including roads, utilities, and structures; and, maps and drawings which clearly show the areal and vertical extent of the existing facility areas and those areas throughout all phases of reclamation. This information shall be provided on or before June 1, 1991.*

Proposal:

The operator has indicated in section 3.2-5(1) that all structures have been removed except for the lower substation which will remain for the life of the mine complex. Upon final reclamation of all other mining facilities, the lower substation will be removed and disposed of accordingly.

The operator has stated that grading will we done in order to establish drainage. The operator states that the disturbed areas are to be graded to approximate the original contours by blending into the surrounding area and creating landforms which resemble the surrounding terrain. Cutslope areas which are left, resemble the cliffs in the surrounding topography and were analyzed for slope stability.

Design criteria for slope stability was conducted by EarthFax as found in Appendix 3.2F. Many of the existing cut slopes will be completely backfilled or buttressed at the base of the cuts to allow these areas to bend in with the surrounding area.

Roads inside of the disturbed area boundary will be removed as part of the reclamation plan.

Phases of reclamation are discussed in section 3.2-6 of the proposal. The timing of the reclamation activities calls for reclamation work to occur in Sowbelly Canyon in the fall of 1992.

Discussion of the pre- and post-mining land use has been added to section 3.2-2 and 3.2-5(1) of the plan.

Analysis:

Information found in the plan has been revised to discuss the post mining land use. The operator has stated that the pre-mining land use was undeveloped land and that the intended post-mining land use is wildlife.

The reclamation timetable and the drawings have been revised to indicate that the substation and the access road to the substation will not be reclaimed concurrently with the rest of the Sowbelly Canyon area. The operator has delineated these areas on the drawings and discussed the sequence of these reclamation operations in the plan. The operator has also indicated separate mass balance calculations for the substation area work for bonding purposes.

Deficiencies:

None.

Division Order 18)

> ***R614-301.553. Backfilling and Grading.*** *Backfilling and grading design criteria must be described in the permit application. Disturbed areas must be backfilled and graded to: achieve the approximate original contour, except as provided in R614-301-553.600 through R614-301-553.642; eliminate all highwalls, spoil piles, and depressions, except as provided in R614-301-552.100 (small depressions); R614-301-553.620 (previously mined highwalls); and in R614-301-553.650 (retention of highwalls); 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. Information within the plan does not specifically address the above requirements. This information shall be provided on or before June 1, 1991.*

Proposal:

Information regarding backfilling and grading is found in section 3.2-5 of the mining and reclamation plan. The operator has indicated that backfilling and grading will be done in order to establish drainage and stabilize highwalls and cutslopes. The postmining topography is found on Exhibits 3.2-4, 3.2-5 and 3.2-9.

The operator has indicated that the disturbed areas will be graded to approximate the original contours by blending spoil into the surrounding area and creating landforms which resemble the surrounding terrain. Cutslope areas which are left, resemble the

cliffs in the surrounding topography. The retained cutslopes were analyzed by EarthFax Consulting Engineers for slope stability. This information is found in Appendix 3.2F of the plan.

The reclamation plan calls for a maximum grade of 2h:1v. In general, the fill material used at 2h:1v(26.6°) is less than the internal angle of friction for the materials to be used for backfilling which range from 30°to 45°.

The operator has further revised the plans to locate and identify the highwalls within the sowbelly Canyon area. Information regarding highwalls is found in section 3.2-2 and are located on Exhibit 3.2-3.

Analysis:

Areas shown on the Post Mining Reclamation Treatment Map, Exhibit 3.2-5, have been revised in the second submittal to more clearly depict all cut slope areas to remain within the disturbed area boundaries. The plan calls for the complete elimination of portal highwalls within the Sowbelly Canyon area by backfilling over the area to a slope of 2h:1v.

The Reclamation Grading Cut/Fill Grid and mass balance calculations have been modified as shown on Exhibit 3.2-9 to indicate that these highwall areas will be eliminated.

The operator has not requested a variance for any structures of facilities to be left upon completion of reclamation or as part of an alternative postmining land use. In order to demonstrate compliance with AOC requirements the operator has conducted stability analysis of the slopes to be left for final reclamation, and, has found those slopes to be designed to have a static factor of safety of 1.3 or greater. Cutslopes associated with roads and pads within the Sowbelly Canyon area have been proposed to be left in some areas and are included in the stability analysis previously described.

The highwall area is included in the stability analysis and can be seen in Picture #1 of Appendix 3.2F-A and a part of the highwall is depicted in Section A-A'. Although the area was found stable by analysis, elimination of the highwall area by backfilling is proposed. No portal highwalls within the Sowbelly Canyon area is proposed by the operator and consequently, no variance for the retention of highwalls is required.

The operator has provided maps and drawings for backfilling and grading of the area. Mass balance calculations indicate that there is a small excess of cut material which could be available to further reduce cut slopes in some of the areas, but not a sufficient amount to be utilized to eliminate all highwalls and cut slopes within the

disturbed area. None of the areas analyzed for stability indicated a factor of safety of less than 1.3 even prior to the addition of backfill materials at the toe of the cuts. The operator has provided additional materials at the base of these slopes to buttress the hillsides which would further increase the factors of safety shown in the geotechnical analysis. Information shown on map 3.2-5 indicate that much of the area will be returned to approximate original contour, except that cut slopes found within portions of the site will not be completely reduced or eliminated and are delineated on the drawing. Constraints which limit these areas are primarily the lack of excess materials which can effectively be used to eliminate these cuts, and, in some cases, fill required to eliminate such cut slopes would not be considered stable. All cut slopes areas within the facilities will be backfilled or eliminated except for those areas as shown on Exhibit 3.2-5.

Information regarding the cut slopes has been expanded in the plan to incorporate other reclamation treatments that are proposed. The operator has committed to revise and rewrite Chapter IX, Revegetation, to add reclamation treatments, methods of monitoring, and evaluation of the cut slope areas in conjunction with the midterm permit review. Discussion of these cut slope areas needs to be provided in the plan in conjunction with vegetation monitoring and the criteria used to measure the disturbed area for density and diversity prior to any final determination for AOC adequacy.

Deficiencies:

None.

Division Order 19)

R614-301-553.500. Previously Mined Areas. *The PERMITTEE shall demonstrate in writing, that the volume of all reasonably available spoil material is insufficient to completely backfill the reaffected or enlarged highwalls to be retained throughout the mine facilities. The PERMITTEE must also demonstrate that the remaining highwalls 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 will 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 PERMITTEE shall demonstrate, to the satisfaction of the regulatory authority (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. This information shall be provided on or before June 1, 1991.

Proposal:

In the Slope Stability Analysis, Appendix 3.2F, part 3.5, the operator has incorporated discussion and analysis of the highwalls in Sowbelly Canyon. The operator has proposed complete elimination of these portal highwalls.

Analysis:

The operator has identified the highwalls associated with the No. 5 Mine fan portal and adjacent portal located to the southeast of the main No. 5 Mine portal access. The operator has incorporated these highwall areas into the text of the mining and reclamation plan and discusses the elimination of these highwall as part of the reclamation activities.

Based on the current information found in the plan regarding backfilling and grading of the Sowbelly Canyon area, the Division considers that these highwall can be completely eliminated by backfilling of the area and that no request for a highwall variance is necessary.

Reclamation contours and the backfilling and grading plans have been revised to allow for the elimination of the highwall by backfilling. Present contour information shows sufficient backfilling of the area for elimination of the highwalls.

Deficiencies:

None.

Division Order 21)

> ***R614-301-731. Operation Plan. General Requirements.*** *The operational plan must be specific to the local hydrologic conditions and will contain steps to be taken during coal mining and reclamation operation through bond release. The PERMITTEE needs to correct the MRP to include monitoring plans specific to ground water and surface water during reclamation through bond release. These monitoring plans should reflect the requirements of R614-301-731.200, and must reflect the language of R614-301-731.212, R614-301-731.233, R614-301-731.214, and R614-301-731-224. The PERMITTEE shall submit a reclamation plan for all phases of reclamation indicating how the relevant requirements for R614-301-730. through R614-301-760. will be met. This shall be required on or before June 1, 1991.*

Proposal:

No comments regarding the above division order are part of this review.

Division Order 25)

> ***R614-301-800. Bonding and Insurance.*** *The PERMITTEE shall provide to the DIVISION, the Certificate of Liability Insurance Form which is incorporated into the Reclamation Agreement. Bonding calculations do not include the following information: a map specifying each area of land for which bond will be posted; mass balance calculations presented in sufficient detail to show backfilling and grading requirements for distribution and disposal of excess spoil and mine development waste, backfilling to meet AOC requirements, subsoil, topsoil and substitute topsoil distribution and quantities for each sub area of the permit; calculations for determination of quantities, equipment selection and productivity used in determining the bond amount which reflect the quantities determined in the mass balance calculations; determination of Phase I and Phase II reclamation activities including a map showing those facilities to be constructed and/or removed during each phase of reclamation. This information shall be required on or before June 1, 1991.*

Proposal:

Bonding information previously found in section 3.2 has been eliminated.

Analysis:

It is anticipated that the bonding information previously provided for Sowbelly Canyon will be incorporated into the final plan and that calculations will be provided on or before the due date for the submittal of all remaining areas in June 15, 1992. Mass

balance calculations, especially in regard to Gravel Canyon cannot be completed until all topsoil distribution requirements are determined for the entire permit area.

Reclamation costs associated with the reclamation planned for the Sowbelly Canyon area must be factored into the bond amount until such time as Phase I bond release is accomplished and approved by the Division. Until such time, the reclamation costs associated for the work planned must be incorporated into the bond amount. Bond cannot be reduced and adjusted by reclamation work accomplished without following bond release criteria. Costs associated with each phase of reclamation should be segregated and identifiable to ease in the implementation of phased bond release for each separate area.

The operator has committed to provide revised bonding calculations in conjunction with the submittal of information for the remaining areas as required in the Settlement Agreement.

Deficiencies:

None.

RECOMMENDATIONS:

No outstanding deficiencies within this review remain with the exception of those items in which the operator has committed to provide the information in conjunction with future revisions to the plan in accordance with the Settlement Agreement.