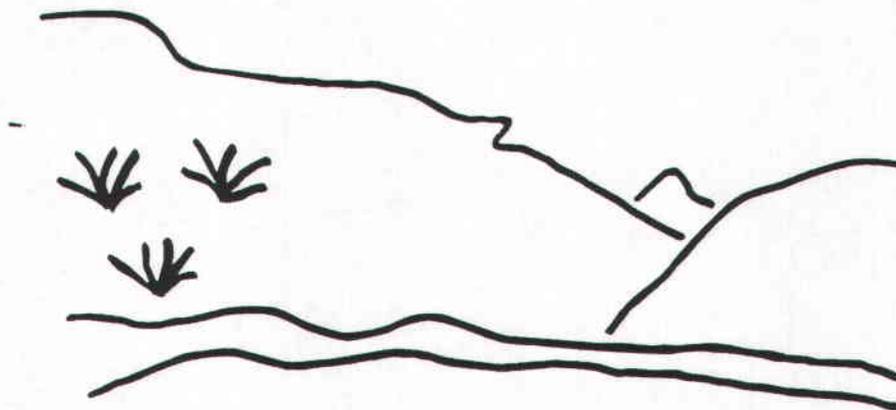


# State of Utah



## Utah Oil Gas and Mining

### Coal Regulatory Program

Bear Canyon  
Tank Seam  
C/015/025-AM02B  
Technical Analysis  
April 29, 2002

File in:

Confidential

Shelf

Expandable

Refer to Record No. 0009

Date 05022002

In C 01500252002

For additional information

*Outgoing*

0009



State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

**COPY**

OK

Michael O. Leavitt  
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PO Box 145801  
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801-359-3940 (Fax)  
801-538-7223 (TDD)

May 2, 2002

Wendell Owen, Mine Manager  
Co-Op Mining Company  
P. O. Box 1245  
Huntington, Utah 84528

Re: Tank Seam, Co-Op Mining Company, Bear Canyon Mine, C/015/025-AM02B, Outgoing File

Dear Mr. Owens:

The above-referenced amendment has been reviewed. There are deficiencies that must be adequately addressed prior to approval. A copy of our Technical Analysis is enclosed for your information. In order for us to continue to process your application, please respond to these deficiencies by July 26, 2002.

If you have any questions, please call me at (801) 538-5325 or Susan at (801) 538-5258.

Sincerely,

Daron R. Haddock  
Permit Supervisor

db/an  
Enclosure  
cc: Price Field Office  
O:\015025.BCN\FINAL\DEF02B.DOC

File in: C0150025 2002 Outgoing  
Refer to:  
 Confidential  
 Shelf  
 Expandable  
Date: 5/2/02 additional information

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INTRODUCTION

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## TECHNICAL ANALYSIS

### INTRODUCTION

On February 19, 2002 the Division received an amendment to extend the existing road in the right canyon of Bear Canyon. This would extend the road about 2,000 feet in order to access the Tank Seam coal outcrop on Wild Horse Ridge (WHR) and conduct mining. There will be a pad at the top end of the road to accommodate mining activities. The existing road is within the disturbed area and the extension would be an addition to the disturbed area. The total increase in area is about 2.5 acres. Because many of the findings that apply to this amendment were made in the initial permitting of the WHR, those findings (refer to TA\_SR98(1)-5b) are included by reference and repeated findings are not necessary.

Page 2  
C/015/025-AM02B  
April 29, 2002

**INTRODUCTION**

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**SUMMARY OF DEFICIENCIES**

**SUMMARY OF DEFICIENCIES**

*The Technical Analysis of the proposed permit changes cannot be completed at this time. Additional information is requested of the permittee to address deficiencies in the proposal. A summary of deficiencies is provided below. Additional comments and concerns may also be found within the analysis and findings made in this Draft Technical Analysis. Upon finalization of this review, any deficiencies will be evaluated for compliance with the regulatory requirements. Such deficiencies may be conditioned to the requirements of the permit issued by the Division, result in denial of the proposed permit changes, or may result in other executive or enforcement action as deemed necessary by the Division at that time to achieve compliance with the Utah Coal Regulatory Program.*

*Accordingly, the permittee must address those deficiencies as found within this Draft Technical Analysis and provide the following, prior to approval, in accordance with the requirements of:*

**Regulations**

- R645-301-120**, Correct the labeling for Attachment B on page 3P-17 to read Slope Stability Analyses. Include a statement on page 3-7 and page 8-35 that the location of the Wild Horse Ridge Tank Seam Soil Resource Inventory and Assessment is in Appendix 8-G. Correct the first sentence of the second paragraph on page 8-44 to accurately state the location of the description of the methods of chemical analysis after grading of soils. Provide a finalized copy of Appendix 8G Wild Horse Ridge Tank Seam Soil Resource Inventory and Assessment. .... 5
  
- R645-301-121.200**, 1) All pages stamped "DRAFT" will need to have that designation removed, 2) The Operator must clarify whether a retaining wall is used or not, and show that appropriately with changes to text and/or plates, and 3) The text on page 7-88 simply ends abruptly in mid-sentence. The missing continuation could not be found and this needs to be corrected..... 29
  
- R645-301-121.200**, The Permittee needs to submit a C1 form with the correct information about the change in the permit acres. The Permittee stated in the C1 form that 2.5 acres would be added to the permit area and the disturbed area instead of just the disturbed area. .... 7
  
- R645-301-232.100**, Where the road will be widened in TS-16 to accommodate mine traffic, account for topsoil removal in Tables 8.9-5. .... 19
  
- R645-301-232.200**, Consider the salvage and storage of sixteen inches of soil (the A and B horizons) from the Guben and Datino soils. .... 19
  
- R645-301-242**, Check itemization of total disturbed acreage on Table 8.3-2 and Table 8.9-1 for agreement. .... 41
  
- R645-301-333**, The details of the completion of the prey base study required for mitigation for loss of habitat must be provided. .... 18
  
- R645-301-341**, The application must include a seed mixture suitable for the mountain

**SUMMARY OF DEFICIENCIES**

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<b>R645-301-356.231</b> , The application must contain a success standard for woody plant densities as described above.....	46
<b>R645-301-521.152 and R645-301-521.190</b> , The Permittee must give the Division cross-sections that show the following: 1) the areas 100 feet outside the disturbed area boundaries, 2) areas on the No.4 Mine Access Road that will be widened. The Division would prefer, that the cross-sections have the same horizontal and vertical scales. ....	14
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<b>R645-301-521.152 and R645-301-553.120</b> , The Permittee must describe in the text the highwall elimination plan. ....	36
<b>R645-301-521.165</b> , Label the area of topsoil storage on Surface Facilities Plate 2-4G. ....	19
<b>R645-301-542.600</b> , The Permittee must 1) address the reclamation of the portal pad or the turn off road in the text and 2) why the No. 4 Mine Access Road will remain as part of the post-mining land use. ....	42
<b>R645-301-553.130</b> , The Permittee must show that all reclaimed slopes in the WHR Tank Seam will have static safety factors of 1.3 or greater. ....	39
<b>R645-301-553.300</b> , The Permittee must describe how the exposed coal seams will be covered to prevent impacts on surface and ground water and prevent sustained combustion. The location of coal seam on the cross-sections would help show that the reclamation plan is adequate. ...	39
<b>R645-301-731.300</b> , Provide information on roof and floor sampling for the #3 Blind Canyon and #4 Tank Seam Mines to update Appendix 6C (geologic sampling) and update Plate 3-4 with sampling locations. ....	12
<b>R645-301-742</b> , A trashrack and debris basin will be required for C-40U as explained in R645-301-742.423.3. ....	29
<b>R645-301-830.130 and R645-301-830.140</b> , The Division cannot reduce the reclamation cost estimate for structures that have been removed until the work has been completed and a finding made by the Division. Therefore, the bond estimate must include 4 fans instead of 3 until the work has been completed and the Division makes a finding that the reclamation work has been completed. ....	49

GENERAL CONTENTS

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## GENERAL CONTENTS

### PERMIT APPLICATION FORMAT AND CONTENTS

Regulatory Reference: 30 CFR 777.11; R645-301-120.

#### Analysis:

Attachment B contains the slope stability analyses conducted by URS Corporation. This attachment is mistakenly labeled Soil Resource Inventory and Assessment on page 3P-17.

Page 3-7 and page 8-35 indicate that the Wild Horse Ridge Soil information is found in Appendix 8-F. Appendix 8-G Wild Horse Ridge Tank Seam Soil Resource Inventory and Assessment should also be mentioned.

Table 8.11-1 Final Grading Test Sample Density indicates the number of samples that will be taken of the soils after grading for analysis as outlined in Table 8.9-1. Table 8.9-1 is a reclamation area summary and does not suggest analytical methods.

Page 8G-6 of Appendix 8G Wild Horse Ridge Tank Seam Soil Resource Inventory and Assessment appears to be in rough form and should be finalized before submittal. For instance, Section 3.2 comes before section 3.0 on the page and Section 3.2 is not complete.

#### Findings:

The information provided is not clear and concise. Before approval, the Permittee must provide the following in accordance with:

**R645-301-120**, Correct the labeling for Attachment B on page 3P-17 to read Slope Stability Analyses. Include a statement on page 3-7 and page 8-35 that the location of the Wild Horse Ridge Tank Seam Soil Resource Inventory and Assessment is in Appendix 8-G. Correct the first sentence of the second paragraph on page 8-44 to accurately state the location of the description of the methods of chemical analysis after grading of soils. Provide a finalized copy of Appendix 8G Wild Horse Ridge Tank Seam Soil Resource Inventory and Assessment.

### REPORTING OF TECHNICAL DATA

Regulatory Reference: 30 CFR 777.13; R645-301-130.

#### Analysis:

URS Corporation; 756 East Winchester Street, Suite 400, Salt Lake City, conducted the

**GENERAL CONTENTS**

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slope stability analyses for the Tank Seam expansion at Wild Horse Ridge (Attachment B of Appendix 3P).

Mr. Dan Larsen of EIS Environmental & Engineering Consulting, 31 North Main St., Helper Utah conducted the Wild Horse Ridge Tank Seam Soil Reserves Investigation and Assessment (Appendix 8-G).

**Findings:**

The information provided is adequate for reporting of Technical Data.

ENVIRONMENTAL RESOURCE INFORMATION

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## ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

### PERMIT AREA

Regulatory Requirements: 30 CFR 783.12; R645-301-521.

Minimum Regulatory Requirements:

Describe and identify the lands subject to surface coal mining operations over the estimated life of those operations and the size, sequence, and timing of the subareas for which it is anticipated that individual permits for mining will be sought.

### Analysis:

The Permittee stated on the C1 form that the permit area would increase by 2.5 acres. The Division reviewed the location of the No. 4 Mine access road and the WHR Tank Seam portal pad area and determined that they are within the permit boundaries. However, neither the No. 4 Mine access road nor the WHR Tank Seam portal pad areas are within the disturbed area boundaries. The Permittee should change the C1 form to avoid confusion.

No additional acres will be added to the permit area. However, 2.5 acres will be added to the disturbed area boundaries.

### Findings:

The information provided in the proposed amendment is not considered adequate to meet the requirements of this section of the regulations. Before approval, the Permittee must provide the following in accordance with:

**R645-301-121.200**, The Permittee needs to submit a C1 form with the correct information about the change in the permit acres. The Permittee stated in the C1 form that 2.5 acres would be added to the permit area and the disturbed area instead of just the disturbed area.

## HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.12; R645-301-411.

Minimum Regulatory Requirements:

Describe and identify the nature of cultural historic and archeological resources listed or eligible for listing on the National Register of Historic Places and known archeological sites within the proposed permit and adjacent areas. The description shall be based on all available information, including, but not limited to, information from the State Historic Preservation Officer and local archeological, historical, and cultural preservation groups.

Identify and evaluate important historic and archeological resources that may be eligible for listing on the National Register of Historic Places, through the collection of additional information, conduct of field investigations, or other appropriate

## ENVIRONMENTAL RESOURCE INFORMATION

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analyses.

### **Analysis:**

Sagebrush Consultants, L.L.C, conducted a cultural resource survey of the proposed portal and road area. The site survey was conducted in October 19, 2001 and the National Register of Historic Places was also consulted for listed or determined eligible properties. No cultural resource sites or isolates were identified during this inventory (Appendix 5-C).

### **Findings:**

The information provided meets the minimum Historic and Archeological Resource Information section of the regulations.

## VEGETATION RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.19; R645-301-320.

### Minimum Regulatory Requirements:

Provide a map that delineates existing vegetative types and a description of the plant communities within the area affected by surface operations and facilities and within any proposed reference area. The description shall include information adequate to predict the potential for reestablishing vegetation. The map or aerial photograph is required, sufficient adjacent areas shall be included to allow evaluation of vegetation as important habitat for fish and wildlife for those species of fish and wildlife as identified under the fish and wildlife resource information.

### **Analysis:**

The addition of the Tank Seam WHR portals and road will increase the disturbed area by 2.5 acres. A mountain brush/conifer reference area was established to represent this disturbance for bond release standards. Prior to disturbance the WHR Tank Seam area had 62 percent total vegetative cover comprised of 25 percent overstory and 37 percent understory cover. Dominant species were Douglas fir, white pine, pinyon pine, curl-leaf mountain mahogany, and Salina wildrye. Woody species density was 1,117 trees or shrubs per acre.

### **Findings:**

The information provided meets the minimum Vegetation Resource Information Requirements of the regulations.

## FISH AND WILDLIFE RESOURCE INFORMATION

Regulatory Reference: 30 CFR 784.21; R645-301-322.

### Minimum Regulatory Reference:

The application shall include fish and wildlife resource information for the permit area and adjacent area. The scope and level of detail for such information shall be determined by the Division in consultation with State and Federal agencies with

## ENVIRONMENTAL RESOURCE INFORMATION

responsibilities for fish and wildlife and shall be sufficient to design the protection and enhancement plan required under the operation and reclamation plan.

Site-specific resource information necessary to address the respective species or habitats shall be required when the permit area or adjacent area is likely to include:

- (1) Listed or proposed endangered or threatened species of plants or animals or their critical habitats listed by the Secretary under the endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.), or those species or habitats protected by similar State statutes;
- (2) Habitats of unusually high value for fish and wildlife such as important streams, wetlands, riparian areas, cliffs supporting raptors, areas offering special shelter or protection, migration routes, or reproduction and wintering areas; or
- (2) Other species or habitats identified through agency consultation as requiring special protection under State or Federal law.

### Analysis:

No additional resource information was provided for this permit amendment. Information provided in the initial Wild Horse Ridge permitting is considered adequate, including threatened and endangered plant and animal information. A helicopter survey of raptor nests is scheduled for mid-May 2002. This information is needed prior to start of construction activities.

### Findings:

The information provided meets the minimum Fish and Wildlife Resource Information section of the regulations. However, as a standard operating procedure the Permittee will conduct a raptor survey prior to the beginning of construction. If any birds are found at an active nest site construction may be delayed until August.

## SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.21; 30 CFR 817.22; 30 CFR 817.200(c); 30 CFR 823; R645-301-220; R645-301-411.

### Minimum Regulatory Requirements:

Provide adequate soil survey information on those portions of the permit area to be affected by surface operations or facilities consisting of a map delineating different soils, soil identification, soil description, and present and potential productivity of existing soils.

Where selected overburden materials are proposed as a supplement or substitute for topsoil, provide results of the analysis, trials and tests required. Results of physical and chemical analyses of overburden and topsoil must be provided to demonstrate that the resulting soil medium is equal to or more suitable for sustaining revegetation than the available topsoil, provided that trials and tests are certified by an approved laboratory. These data may be obtained from any one or a combination of the following sources: U.S. Department of Agriculture Soil Conservation Service published data based on established soil series; U.S. Department of Agriculture Soil Conservation Service Technical Guides; State agricultural agency, university, Tennessee Valley Authority, Bureau of Land Management or U.S. Department of Agriculture Forest Service published data based on soil series properties and behavior; or, results of physical and chemical analyses, field site trials, or greenhouse tests of the topsoil and overburden materials (soil series) from the permit area. If the permittee demonstrates through soil survey or other data that the topsoil and unconsolidated material are insufficient and substitute materials will be used, only the substitute materials must be analyzed.

**Analysis:**

A soil survey for the Tank Seam area expansion on Wild Horse Ridge was conducted in October 2001 (Appendix 8G). Soils of the portal were classified as loamy-skeletal, mixed, Typic Calciborolls (Guben) and loamy-skeletal, mixed Typic Haploborolls (Datino) on the basis of two pits TSP-1 and TSP-2. These classifications were supported by eleven hand dug holes (N11 – N21). Ten hand dug holes (N1 – N10) were used to verify the Guben Pathead soils and Doney-Cabba-Podo soils along the access road. Locations of the pits and shallow excavations are shown on the Soils Map that accompanies Appendix 8G.

Samples of the A and B horizons were collected and analyzed by Inter-Mountain Laboratory, Farmington, New Mexico. Pit TSP-2 is located in Datino soil adjacent to the road along the second hairpin turn above the Blind Canyon Seam portals. TSP-2 was sampled down to 20 inches (sample number P5).

Pit TSP-1 was located in Guben soil alongside the road just below the third hairpin turn above the Blind Canyon Seam portals. TSP-1 was sampled down to 40 inches (samples numbered P1 – 3). Calcic horizons were identified in the field at 9 inches and 24 inches and verified by analysis.

A composite of soil from Notesite 21 at the pad area was combined with the surface soils from TSP-1 and labeled P4.

The nutrient status of the top eight inches of soil at TSP-1 with 5.0 mg/kg Nitrate-N, 3.0 mg/Kg Phosphorous, and 170 mg/Kg Potassium. The nutrient status of the top eight inches of soils at TSP-2 were not sampled separately, but were added to a composite of soils in the pad area (P4). The P4 sample was less fertile than the top eight inches of TSP-1 with 1.0 mg/kg Nitrate-N, 3.2 mg/Kg Phosphorous, and 310 mg/Kg Potassium in the upper seven inches. (This analytical result does not reflect the quality of the soil in TSP-2.) In both pits, SAR values were 0.2 or less and Electrical Conductivity was under 0.9 mmhos/cm.

The TSP-2 samples are noticeably lower in carbonates than those of TSP-1. Neutralization Potential of the calcic horizon in TSP-1 was over 300 t/kt compared with less than 10 t/kt at the 10 inch depth in TSP-2. (The calcic horizon was not indurated and did not restrict root growth.)

The field notes support the salvage of eight inches of topsoil (A horizon) along the road and at locations of pad development and switchback widening. Field notes and the NRCS soil description indicate that the A and B horizon for the Guben and Datino soils could be salvaged to a depth of sixteen inches.

**Findings:**

The information provided is adequate for the Soils Resource requirements of the Regulations.

**ENVIRONMENTAL RESOURCE INFORMATION**

## **GEOLOGIC RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 784.22; R645-301-623, -301-724.

### **Minimum Regulatory Requirements:**

Each application shall include geologic information in sufficient detail to assist in: determining the probable hydrologic consequences of the operation upon the quality and quantity of surface and ground water in the permit and adjacent areas, including the extent to which surface- and ground-water monitoring is necessary; determining all potentially acid- or toxic-forming strata down to and including the stratum immediately below the coal seam to be mined; determining whether reclamation can be accomplished and whether the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area; and, preparing the subsidence control plan.

Geologic information shall include, at a minimum, a description of the geology of the proposed permit and adjacent areas down to and including the deeper of either the stratum immediately below the lowest coal seam to be mined or any aquifer below the lowest coal seam to be mined which may be adversely impacted by mining. This description shall include the areal and structural geology of the permit and adjacent areas, and other parameters which influence the required reclamation and it shall also show how the areal and structural geology may affect the occurrence, availability, movement, quantity, and quality of potentially impacted surface and ground water. It shall be based on maps and plans required as resource information for the plan, detailed site specific information as required below, and, geologic literature and practices.

For any portion of a permit area in which the strata down to the coal seam to be mined will be removed or are already exposed, samples shall be collected and analyzed from test borings; drill cores; or fresh, unweathered, uncontaminated samples from rock outcrops down to and including the deeper of either the stratum immediately below the lowest coal seam to be mined or any aquifer below the lowest coal seam to be mined which may be adversely impacted by mining. The analyses shall result in the following:

- (1) Logs showing the lithologic characteristics including physical properties and thickness of each stratum and location of ground water where occurring;
- (2) Chemical analyses identifying those strata that may contain acid- or toxic-forming, or alkalinity-producing materials and to determine their content, except that the Division may find that the analysis for alkalinity-producing material is unnecessary; and
- (3) Chemical analysis of the coal seam for acid- or toxic-forming materials, including the total sulfur and pyritic sulfur, except that the Division may find that the analysis of pyritic sulfur content is unnecessary.

For lands within the permit and adjacent areas where the strata above the coal seam to be mined will not be removed, samples shall be collected and analyzed from test borings or drill cores to provide the following data:

- (1) Logs of drill holes showing the lithologic characteristics, including physical properties and thickness of each stratum that may be impacted, and location of ground water where occurring;
  - (2) Chemical analyses for acid- or toxic-forming or alkalinity-producing materials and their content in the strata immediately above and below the coal seam to be mined;
  - (3) Chemical analyses of the coal seam for acid- or toxic-forming materials, including the total sulfur and pyritic sulfur, except that the Division may find that the analysis of pyrite sulfur content is unnecessary; and
- (1) For standard room-and-pillar mining operations, the thickness and engineering properties of clays or soft rock such as clay shale, if any, in the stratum immediately above and below each coal seam to be mined.

If determined to be necessary to protect the hydrologic balance, to minimize or prevent subsidence, or to meet the performance standards, the Division may require the collection, analysis, and description of additional geologic information.

An applicant may request the Division to waive in whole or in part the requirements of the borehole information or analysis required of this section. The waiver may be granted only if the Division finds in writing that the collection and analysis of such data are unnecessary because other information having equal value or effect is available to the Division in a satisfactory form.

### **Analysis:**

Section 3.5.8.1 of the MRP indicates that samples will be taken in new sections during future development where indicated on Plate 3-4. Samples will be analyzed according to Table 3K-1 and results will be included in Appendix 6-C.

**ENVIRONMENTAL RESOURCE INFORMATION**

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**Findings:**

The amendment does not include information as outlined by Section 3.5.8.1 of the Mining and Reclamation Plan. Prior to approval and in accordance with:

**R645-301-731.300**, Provide information on roof and floor sampling for the #3 Blind Canyon and #4 Tank Seam Mines to update Appendix 6C (geologic sampling) and update Plate 3-4 with sampling locations.

**MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Minimum Regulatory Requirements:

The permit application must include as part of the Resource 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 the underground mining activities, with a description of size, sequence, and timing of the mining of subareas for which it is anticipated that additional permits will be sought.

Archeological site maps

Known archeological sites within the permit or adjacent areas. Note - Information on the nature and location of archeological resources on public land and Indian land as required under the Archeological Resources Protection Act of 1979 must be submitted separately from the application, and marked and held as confidential.

Coal resource and geologic information maps

Nature, depth, and thickness of the coal seams to be mined, any coal or rider seams above the seam to be mined, each stratum of the overburden, and the stratum immediately below the lowest coal seam to be mined. All coal crop lines and the strike and dip of the coal to be mined within the proposed permit area.

Cultural resource maps

The boundaries of any public park and locations of any cultural and historical resources listed or eligible for listing in the National Register of Historic Places. Each cemetery that is located in or within 100 feet of the proposed permit area. Any land within the proposed permit area which is within the boundaries of any units of the National System of Trails or the Wild and Scenic Rivers System, including study rivers designated under Section 5(a) of the Wild and Scenic Rivers Act. Any other relevant information required by the Division.

Existing structures and facilities maps

Location and dimensions of existing areas of spoil, waste, coal development waste, and noncoal waste disposal, dams, embankments, other impoundments, and water treatment and air pollution control facilities within the proposed permit area.

Existing surface configuration maps

Sufficient slope measurements to adequately represent the existing land 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 to be 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 premining configuration of the land; and, slope measurements shall take into account natural variations in slope, to provide accurate representation of the range of natural slopes and reflect geomorphic differences of the area to be disturbed.

Mine workings maps

Location and extent of know workings of active, inactive, or abandoned underground mines, including mine openings to

**ENVIRONMENTAL RESOURCE INFORMATION**

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the surface within the proposed permit and adjacent areas. Location and extent of existing or previously surface-mined areas within the proposed permit area.

**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, fish and wildlife, and air quality, if required, in preparation of the application

**Permit area boundary maps**

The boundaries of land within the proposed permit area upon which the applicant has the legal right to enter and begin underground mining activities.

**Subsurface water resource maps**

Location and extent of subsurface water, if encountered, within the proposed permit or adjacent areas, including, but not limited to, areal and vertical distribution of aquifers, and portrayal of seasonal differences of head in different aquifers on cross sections and contour maps.

**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 use of the buildings. 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, and agricultural drainage tile fields. Each public road located in or within 100 feet of the proposed permit area.

**Surface and subsurface ownership maps**

All boundaries of lands and names of present owners of record of those lands, both surface and subsurface, included in or contiguous to the permit area.

**Surface water resource maps**

The locations of water-supply intakes for current users of surface waters flowing into, out of, and within a hydrologic area defined by the Division, and those surface waters which will receive discharges from affected areas in the proposed permit area. Location of surface water bodies such as streams, lakes, ponds, springs, constructed or natural drains, and irrigation ditches within the proposed permit and adjacent areas.

**Vegetation reference area maps**

The location and boundaries of any proposed reference areas for determining the success of revegetation.

**Well maps**

Location, and depth if available, of gas and oil wells within the proposed permit area and water wells in the permit area and adjacent areas.

Cross sections, maps, and plans included in a permit application as required by this section 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, and shall be updated periodically as required by the Division.

**Analysis:**

**Affected Area Boundary Maps**

The Permittee does not propose any changes to the permit or affected area boundaries.

**Existing Structures and Facilities Maps**

The only existing structure in the proposed disturbed area boundary is the access road to the hunting cabin, which is shown on Plate 3-7G, Per-Mining Land Surface Configuration. The

cross-section as indicated on Plate 3-7G are located in Appendix 3-P.

The existing surface configuration is shown on Plate 3-7G. The map has a scale of 1" = 50' and was certified by Charles Reynolds. The cross-sections are in Appendix 3-P; they show the pre/post mining and operation surface configuration.

The cross-sections are for the WHR portal pad only. The Permittee must include cross-sections for No. 4 Mine access road. The Division is interested in areas that will be widened for operations and then restored to the pre-mining configuration.

The cross-sections do not have the same horizontal and vertical scale. The Division usually prefers to have the horizontal and vertical scales to be the same.

The cross-sections do not show the area 100 feet outside the disturbed area boundaries. The Division needs that information to determine how the disturbed area blends into the undisturbed area.

**Findings:**

The information provided in the proposed amendment is not considered adequate to meet the requirements of this section of the regulations. Before approval, the Permittee must provide the following in accordance with:

**R645-301-521.152 and R645-301-521.190**, The Permittee must give the Division cross-sections that show the following: 1) the areas 100 feet outside the disturbed area boundaries, 2) areas on the No.4 Mine Access Road that will be widened. The Division would prefer, that the cross-sections have the same horizontal and vertical scales.

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## **MINING OPERATIONS AND FACILITIES**

Regulatory Reference: 30 CFR 784.2, 784.11; R645-301-231, -301-526, -301-528.

### **Minimum Regulatory Requirements:**

The objectives of this section is to ensure that the Division is provided with comprehensive and reliable information on proposed underground mining activities, and to ensure that those activities are allowed to be conducted only in compliance with the regulatory program.

Provide a general description of the mining operations proposed to be conducted during the life of the mine within the proposed permit area, including, at a minimum, the following: a narrative description of the type and method of coal mining procedures and proposed engineering techniques, anticipated annual and total production of coal, by tonnage, and the major equipment to be used for all aspects of those operations; and, a narrative explaining the construction, modification, use, maintenance, and removal of the following facilities (unless retention of such facility is necessary for postmining land use is specified.) The following facilities must be described: dams, embankments, and other impoundments; overburden and topsoil handling and storage areas and structures; coal removal, handling, storage, cleaning, and transportation areas and structures; spoil, coal processing waste, mine development waste, and noncoal waste removal, handling, storage, transportation, and disposal areas and structures; mine facilities; and, water pollution control facilities.

### **Analysis:**

#### **General**

The Permittee proposes the following changes to the MRP:

- To develop the No. 4 Mine access road
- To develop the Wild Horse Ridge Blind Canyon Seam pad
- Move the Tank Seam fan and water tank from the current location to the Wild Horse Ridge Blind Canyon Seam pad area.
- Move the proposed location of the water tank at the WHR Blind Canyon Seam pad.
- Remove the WHR Blind Canyon Seam shop from the MRP. The building was proposed but never constructed.

The Permittee has approval to mine the Blind Canyon Seam. The Permittee's future plans are to increase the permit area by including additional leases to the Blind Canyon Seam.

The purpose of this amendment is to get approval to construct the road and facilities needed to access the Blind Canyon Seam and to modify the surface facilities at the WHR Tank Seam Pad.

**Findings:**

The information provided in the proposed amendment is considered adequate to meet the requirements of this section of the regulations.

**EXISTING STRUCTURES:**

Regulatory Reference: 30 CFR 784.12; R645-301-526.

Minimum Regulatory Requirements:

"Existing Structure" means a structure or facility used in connection with or to facilitate coal mining and reclamation operations for which construction began prior to January 21, 1981.

Provide a description of each existing structure proposed to be used in connection with or to facilitate the surface coal mining and reclamation operation. The description shall include: the location; plans of the structure which describe its current condition; approximate dates on which construction of the existing structure was begun and completed; and, a showing, including relevant monitoring data or other evidence, whether the structure meets the permanent program performance standards or, if the structure does not meet the permanent program performance standards, a showing whether the structure meets the interim program performance standards.

Provide a compliance plan for each existing structure proposed to be modified or reconstructed for use in connection with or to facilitate the surface coal mining and reclamation operation. The compliance plan shall include: design specifications for the modification or reconstruction of the structure to meet the permanent program design and performance standards; a construction schedule which shows dates for beginning and completing interim steps and final reconstruction; provisions for monitoring the structure during and after modification or reconstruction to ensure that the permanent program performance standards are met; and, a showing that the risk of harm to the environment or to public health or safety is not significant during the period of modification or reconstruction.

**Analysis:**

The only existing structure in the proposed disturbed area is a private road that is used to access a hunting cabin. The road will be upgrade to handle the additional traffic.

In addition, the Permittee plans to move the Tank Seam fan and water tank from the current location to the Wild Horse Ridge Blind Canyon Seam pad area and remove the WHR Blind Canyon Seam shop.

**Findings:**

The information provided in the proposed amendment is considered adequate to meet the requirements of this section of the regulations.

**FISH AND WILDLIFE INFORMATION**

Regulatory Reference: 30 CFR 784.21, 817.97; R645-301-322, -301-333, -301-342, -301-358.

Minimum Regulatory Requirements:

Protection and enhancement plan

Each application shall include a description of how, to the extent possible using the best technology currently available,

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the operator will minimize disturbances and adverse impacts on fish and wildlife and related environmental values, including compliance with the Endangered Species Act, during the surface coal mining and reclamation operations and how enhancement of these resources will be achieved where practicable. This description shall apply, at a minimum, to species and habitats identified. The description shall include: protective measures that will be used during the active mining phase of operation. Such measures may include the establishment of buffer zones, the selective location and special design of haul roads and powerlines, and the monitoring of surface water quality and quantity; and, enhancement measures that will be used during the reclamation and postmining phase of operation to develop aquatic and terrestrial habitat. Such measures may include restoration of streams and other wetlands, retention of ponds and impoundments, establishment of vegetation for wildlife food and cover, and the placement of perches and nest boxes. Where the plan does not include enhancement measures, a statement shall be given explaining why enhancement is not practicable.

Each operator shall, to the extent possible using the best technology currently available: ensure that electric powerlines and other transmission facilities used for, or incidental to, underground mining activities on the permit area are designed and constructed to minimize electrocution hazards to raptors, except where the Division determines that such requirements are unnecessary; locate and operate haul and access roads so as to avoid or minimize impacts on important fish and wildlife species or other species protected by State or Federal law; design fences, overland conveyors, and other potential barriers to permit passage for large mammals except where the Division determines that such requirements are unnecessary; and, fence, cover, or use other appropriate methods to exclude wildlife from ponds which contain hazardous concentrations of toxic-forming materials.

### Endangered and threatened species

No underground mining activity shall be conducted which is likely to jeopardize the continued existence of endangered or threatened species listed by the Secretary or which is likely to result in the destruction or adverse modification of designated critical habitats of such species in violation of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). The operator shall promptly report to the Division any State- or federally-listed endangered or threatened species within the permit area of which the operator becomes aware. Upon notification, the Division shall consult with appropriate State and Federal fish and wildlife agencies and, after consultation, shall identify whether, and under what conditions, the operator may proceed.

### Bald and golden eagles

No underground mining activity shall be conducted in a manner which would result in the unlawful taking of a bald or golden eagle, its nest, or any of its eggs. The operator shall promptly report to the Division any golden or bald eagle nest within the permit area of which the operator becomes aware. Upon notification, the Division shall consult with the U.S. Fish and Wildlife Service and also, where appropriate, the State fish and wildlife agency and, after consultation, shall identify whether, and under what conditions, the operator may proceed.

Nothing in these regulatory requirements shall authorize the taking of an endangered or threatened species or a bald or golden eagle, its nest, or any of its eggs in violation of the Endangered Species Act of 1973, as amended, 16 U.S.C. 1531 et seq., or the Bald Eagle Protection Act, as amended, 16 U.S.C. 668 et seq.

### Wetlands and habitats of unusually high value for fish and wildlife

The operator conducting underground mining activities shall avoid disturbances to, enhance where practicable, restore, or replace, wetlands and riparian vegetation along rivers and streams and bordering ponds and lakes. Underground mining activities shall avoid disturbances to, enhance where practicable, or restore habitats of unusually high value for fish and wildlife.

### Analysis:

Because the surface disturbance is in critical winter range, construction should not be started in the winter months from about November 1 until April 15.

Construction should be started outside the nesting season, February 1-August 15, unless monitoring shows the nests are not active. Mitigation for loss of habitat was proposed to be completed by funding a prey base study when the WHR disturbance was permitted. The details of the completed survey should be included in the MRP.

### Findings:

The information provided is not considered adequate to meet the minimum Fish and Wildlife Information requirements of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-333**, The details of the completion of the prey base study required for mitigation for loss of habitat must be provided.

## TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR 817.22; R645-301-230.

### Minimum Regulatory Requirements:

#### Topsoil removal and storage

All topsoil shall be removed as a separate layer from the area to be disturbed, and segregated. Where the topsoil is of insufficient quantity or of poor quality for sustaining vegetation, the selected overburden materials approved by the Division for use as a substitute or supplement to topsoil shall be removed as a separate layer from the area to be disturbed, and segregated. If topsoil is less than 6 inches thick, the operator may remove the topsoil and the unconsolidated materials immediately below the topsoil and treat the mixture as topsoil.

The Division may choose not to require the removal of topsoil for minor disturbances which occur at the site of small structures, such as power poles, signs, or fence lines; or, will not destroy the existing vegetation and will not cause erosion.

All materials shall be removed after the vegetative cover that would interfere with its salvage is cleared from the area to be disturbed, but before any drilling, blasting, mining, or other surface disturbance takes place.

Selected overburden materials may be substituted for, or used as a supplement to, topsoil if the operator demonstrates to the Division that the resulting soil medium is equal to, or more suitable for sustaining vegetation than, the existing topsoil, and the resulting soil medium is the best available in the permit area to support revegetation.

Materials removed shall be segregated and stockpiled when it is impractical to redistribute such materials promptly on regraded areas. Stockpiled materials shall: be selectively placed on a stable site within the permit area; be protected from contaminants and unnecessary compaction that would interfere with revegetation; be protected from wind and water erosion through prompt establishment and maintenance of an effective, quick growing vegetative cover or through other measures approved by the Division; and, not be moved until required for redistribution unless approved by the Division.

Where long-term surface disturbances will result from facilities such as support facilities and preparation plants and where stockpiling of materials would be detrimental to the quality or quantity of those materials, the Division may approve the temporary distribution of the soil materials so removed to an approved site within the permit area to enhance the current use of that site until needed for later reclamation, provided that: such action will not permanently diminish the capability of the topsoil of the host site; and, the material will be retained in a condition more suitable for redistribution than if stockpiled.

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

### Analysis:

#### Removal and Storage

Table 3.3-1 Surface Disturbance Summary indicates that the No.4 Mine Access Road will be 2.0 acres (2000 feet long, page 3D-7A) and the Wild Horse Ridge Portal Pad area will be 0.55 acres. The pad will be supported by a retaining wall (page 3A-7). Roads will be made of subsoils and/or imported gravels. Road base analyses are presented in Appendix 8-E.

Development of the site will begin from the Blind Canyon seam. Topsoil will be removed from road and pad cuts as noted on page 8G-7 of App 8-G. That is to a depth of eight inches from most of the site and to a depth of 20 inches where pockets of a brown sandy loam

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BW horizon were noted along the northeast edge of the portal site. This loam is lighter in color than the subsoil. "The subsoil can be readily identified by its lighter color as a result of the increased calcium carbonate content and lower amount of organic matter."

Field notes and the NRCS soil description in Appendix 8G indicate that the A and B horizons for the Guben and Datino soils could be salvaged to a depth of sixteen inches. Since the mine is operating with a deficit of salvaged topsoil, expansion at Wild Horse Ridge presents an opportunity to salvage and store soils that could be utilized in reclamation of the Tipple yard.

A total of 1,300 cu yds will be salvaged (page 8-35 and Table 3P-1 and Table 8.9-5 Summary Table). Topsoil will be stored in the Wild Horse Ridge Tank Seam Topsoil Stockpile located "inside the bend of the corner (Page 3P-3)." The topsoil stockpile location is shown on Plate 8-5G. Page 7K-11 indicates the 0.31 acre topsoil storage area will be protected from road drainage by a berm. Details of stockpile construction are shown in Appendix 3-P.

Table 8.3-2 Soil Unit Acreages Within the Disturbed Area indicates that 1.09 acres of Datino-Guben (DG) soils will be salvaged. Page 8-43 states that there will be no construction or soil movement in the 0.76 acres of TS-16, because this is an existing recreational road.

Subsoils will be compacted on the outside of the two switchbacks shown on Plate 2-4G to allow the road to widen in these points.

**Findings:**

The information provided is not adequate to clarify topsoil handling. Prior to approval and in accordance with:

**R645-301-232.100**, Where the road will be widened in TS-16 to accommodate mine traffic, account for topsoil removal in Tables 8.9-5.

**R645-301-232.200**, Consider the salvage and storage of sixteen inches of soil (the A and B horizons) from the Guben and Datino soils.

**R645-301-521.165**, Label the area of topsoil storage on Surface Facilities Plate 2-4G.

**ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES**

Regulatory Reference: 30 CFR 784.24, 817.150, 817.151; R645-301-521, -301-527, -301-534, -301-732.

Minimum Regulatory Requirements:

Road classification system

Each road shall be classified as either a primary road or an ancillary road. A primary road is any road which is: used for transporting coal or spoil; frequently used for access or other purposes for a period in excess of six months; or, to be retained for an approved postmining land use. An ancillary road is any road not classified as a primary road.

Plans and drawings

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Each applicant for an underground coal mining and reclamation permit shall submit plans and drawings for each road to be constructed, used, or maintained within the proposed permit area. To ensure environmental protection appropriate for their planned duration and use, including consideration of the type and size of equipment used, the design and construction or reconstruction of roads shall incorporate appropriate limits for grade, width, surface materials, surface drainage control, culvert placement, and culvert size, in accordance with current, prudent engineering practices, and any necessary design criteria established by the Division. The plans and drawings shall:

- 1.) Include a map, appropriate cross sections, design drawings, and specifications for road widths, gradients, surfacing materials, cuts, fill embankments, culverts, bridges, drainage ditches, low-water crossings, and drainage structures;
- 2.) Contain the drawings and specifications of each proposed road that is located in the channel of an intermittent or perennial stream, as necessary for approval of the road by the Division;
- 3.) Contain the drawings and specifications for each proposed ford of perennial or intermittent streams that is used as a temporary route, as necessary for approval of the ford by the Division;
- 4.) Contain a description of measures to be taken to obtain approval of the Division for alteration or relocation of a natural stream channel;
- 5.) Contain the drawings and specifications for each low-water crossing of perennial or intermittent stream channels so that the Division can maximize the protection of the stream; and,
- 6.) Describe the plans to remove and reclaim each road that would not be retained under an approved postmining land use, and the schedule for this removal and reclamation.

### Performance standards

All roads shall be located, designed, constructed, reconstructed, used, maintained, and reclaimed so as to:

- 1.) Control or prevent erosion, siltation, and the air pollution attendant to erosion, including road dust and dust occurring on other exposed surfaces, by measures such as vegetating, watering, using chemical or other dust suppressants, or otherwise stabilizing all exposed surfaces in accordance with current, prudent engineering practices;
- 2.) Control or prevent damage to fish, wildlife, or other habitat and related environmental values;
- 3.) Control or prevent additional contributions of suspended solids to streamflow or runoff outside the permit area;
- 4.) Neither cause nor contribute to, directly or indirectly, the violation of State or Federal water quality standard applicable to receiving waters;
- 5.) Refrain from seriously altering the normal flow of water in streambeds or drainage channels;
- 6.) Not locate any road in the channel of an intermittent or perennial stream unless specifically approved by the Division. Roads shall be located to minimize downstream sedimentation and flooding;
- 7.) Prevent or control damage to public or private property, including the prevention or mitigation of adverse effects on lands within the boundaries of units of the National Park System, the National Wildlife Refuge System, the National System of Trails, the National Wilderness Preservation System, the Wild and Scenic Rivers System, including designated study rivers, and National Recreation Areas designated by Act of Congress;
- 8.) Use nonacid- and nontoxic-forming substances in road surfacing; and,
- 9.) Maintain all roads to meet the performance standards of this part and any additional criteria specified by the Division. A road damaged by a catastrophic event, such as a flood or earthquake, shall be repaired as soon as is practicable after the damage has occurred.

In addition to the above, primary roads shall meet the following requirements:

- 1.) The construction or reconstruction of primary roads shall be certified in a report to the Division by a qualified registered professional engineer, or in any State which authorizes land surveyors to certify the construction or reconstruction of primary roads, a qualified registered professional land surveyor, with experience in the design and construction of roads. The report shall indicate that the primary road has been constructed or reconstructed as designed and in accordance with the approved plan;
- 2.) Each primary road embankment shall have a minimum static factor of 1.3. The Division may establish engineering design standards for primary roads through the State program approval process, in lieu of engineering tests, to establish compliance with the minimum static safety factor of 1.3 for all embankments;
- 3.) Primary roads shall be located to minimize erosion, insofar as is practicable, on the most stable available surface;
- 4.) Fords of perennial or intermittent streams by primary roads are prohibited unless they are specifically approved by the Division as temporary routes during periods of road construction.
- 5.) Each primary road shall be constructed or reconstructed, and maintained to have adequate drainage control, using structures such as, but not limited to bridges, ditches, cross drains, and ditch relief drains. The drainage control system shall be designed to safely pass the peak runoff from a 10-year, 6-hour precipitation event, or greater event as specified by the Division. Drainage pipes and culverts shall be installed as designed, and maintained in a free and operating condition and to prevent or control erosion at inlets and outlets. Drainage ditches shall be constructed and maintained to prevent uncontrolled drainage over the road surface and embankment. Culverts shall be installed and maintained to sustain the vertical soil pressure, the passive resistance of the foundation, and the weight of vehicles using the road. Natural stream channels shall not be altered or relocated without the prior approval of the Division. Except as specifically approved by the Division, structures for perennial or intermittent stream channel crossings shall be made using bridges, culverts, low-water crossings, or other structures designed, constructed, and maintained using current, prudent engineering practices. The Division shall ensure that low-water crossings are designed, constructed, and maintained to prevent erosion of the structure or streambed and additional contributions

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- 6.) of suspended solids to streamflow.  
Primary roads shall be surfaced with material approved by the Division as being sufficiently durable for the anticipated volume of traffic and the weight and speed of vehicles using the road.

### Primary road certification

The plans and drawings for each primary road 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 certify the design of primary roads a qualified registered professional land surveyor, experienced in the design and construction of roads, as meeting the requirements of this chapter; current, prudent engineering practices; and any design criteria established by the Division.

### Other Transportation Facilities

The plan must include a detailed description of each road, conveyor, and rail system to be constructed, used, or maintained within the proposed permit area. The description will include a map, appropriate cross sections, and the following: specifications for each road width, road gradient, road surface, road cut, fill embankment, culvert, bridge, drainage ditch, and drainage structure; measures to be taken to obtain Division approval for alteration or relocation of a natural drainageway; a maintenance plan describing how roads will be maintained throughout their life to meet the design standards throughout their use; a commitment that if a road is damaged by a catastrophic event, such as a flood or earthquake, the road will be repaired as soon as practical after the damage has occurred; a report of appropriate geotechnical analysis, where approval of the Division is required for alternative specifications, or for steep cut slopes.

## Analysis:

### Road Classification System

Because the No. 4 Mine access road will be used for coal haulage, the road must be classified as a primary road. The main difference between a primary and ancillary road is that a primary road design must be certified.

### Plans and Drawings

The design for the No. 4 Mine access road is in Appendix 3-P. The road is approximately 2,000 feet long, averaging 10% grade and not exceeding 14% grade. The section of the road that existed before mining and will remain in place meets the post-mining land use.

On page 8-43 of the amendment the Permittee states:

- WHR Tank Seam Lower Portal Access Road: The area consists of an existing recreational road that was in place before mining and will be used post mining. There will be no construction or soil movement within this area so no topsoil will be removed. The soils in this area are described in Appendix 8-G.
- Table 3P-1, Summary of Cut and Fill Volumes on page 3P-4 also shows that the entire earthwork will be done in and around the pad area.
- In a conversation with the Division on March 15, 2002, the Permittee (Charles Reynolds) stated that part of the road would be upgraded to accommodate heavy truck traffic. The improvements include adding a passing lane and widening turns.
- The Permittee needs to clarify if any modification will be made to the No. 4 Mine

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access road before the WHR pad turnoff. If that section of the road will be modified then the Permittee needs to give the Division detailed designs.

The Permittee addresses the general road design requirements as follows:

- The pre-mining, operational and post-mining maps for the No. 4 Mine access road and the WHR Blind Canyon Seam pad area are as follows; Plate 3-7G, Plate 2-4G and Plate 3-2G respectively. The locations of the cross-sections are shown on each map except Plate 2-4G. The cross-sections are in Appendix 3-P. On page 3-7 the Permittee states that the road surfacing material for the No. 4 Mine Portal Access Road will consist of in-place material and/or road base (gravel) material. A new culvert will be installed for the operational and post-mining periods. The designs of those culverts are included and reviewed in the hydrology section.
- The Permittee does not propose to locate the No.4 Mine Portal access road in the channel of an intermittent or perennial stream.
- The Permittee does not propose to have the road ford any streams. Therefore, no designs for those structures are needed.
- The Permittee does not propose to alter or relocate an existing natural stream channel.

The Permittee addresses the specific primary road design requirements as follows:

- The Permittee had the designs for the No. 4 Mine Access road certified by Charles Reynolds who is a registered professional engineer.
- The Permittee had slope stability calculations done on each of the cross-sections. All of the slopes during the operational phase will have a static safety factor of 1.3 or greater. See the summary sheet in Appendix 3-P for details.
- The erosion control issues will be addressed in the hydrology section of the TA.
- The Permittee will use native material and road base (gravel) when needed for road base. The Division does not have specific standards for road surfacing. The road will be constructed and maintained like similar roads at the mine. Road surface materials have not been a problem at the mine. If a problem should occur then the Division will take action under road maintenance.

The cut and fill calculations are shown on Table 3P-1. The Permittee plans to cut 11,029 cubic yards of material of which 1,300 cubic yards are topsoil. The Permittee plans to use 11,089 cubic yards of material as fill. While the cut and fill calculations do not match, they are close enough (13%) for the Division to understand the construction plan.

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**Performance Standards**

The road will be subject to all performance standards.

**Primary Road Certification**

The No. 4 Mine Access road has been classified as a primary road. Charles Reynolds, who is a professional engineer, has certified the designs.

**Other Transportation Facilities**

No other surface transportation systems are associated with the WHR Tank seam pad or access road.

**Findings:**

The information provided in the proposed amendment is not considered adequate to meet the requirements of this section of the regulations. Before approval, the Permittee must provide the following in accordance with:

**R645-301-521.152 and R645-301-521.190**, The Permittee must show the location of the cross-sections on Plate 2-4G.

**R645-301-121.200 and R645-301-521.190**, The Permittee must state in the PAP what if any modification will be made to the No. 4 Mine access road before the WHR pad turnoff.

**SPOIL AND WASTE MATERIALS**

Regulatory Reference: 30 CFR 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

**Minimum Regulatory Requirements:**

**Coal mine waste**

Each plan shall contain descriptions, including appropriate maps and cross-section drawings of the proposed disposal methods and sites for placing underground development waste and excess spoil generated at surface areas affected by surface operations and facilities. Each plan shall describe the geotechnical investigation, design, construction, operation, maintenance, and removal, if appropriate, of the structures.

All coal mine waste shall be placed in new or existing disposal areas within a permit area that are approved by the Division for this purpose. Coal mine waste shall be placed in a controlled manner to:

- 1.) Minimize adverse effects of leachate and surface-water runoff on surface- and ground-water quality and quantity;
- 2.) Ensure mass stability and prevent mass movement during and after construction;
- 3.) Ensure that the final disposal facility is suitable for reclamation and revegetation compatible with the natural surroundings and the approved postmining land use;

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- 4.) Not create a public hazard; and
- 5.) Prevent combustion.

Coal mine waste materials from activities located outside a permit area may be disposed of in the permit area only if approved by the Division. Approval shall be based upon a showing that such disposal will be in accordance with the standards of this section.

The disposal facility shall be designed using current, prudent engineering practices and shall meet any design criteria established by the Division. A qualified registered professional engineer, experienced in the design of similar earth and waste structures, shall certify the design of the disposal facility. The disposal facility shall be designed to attain a minimum long-term static safety factor of 1.5. The foundation and abutments must be stable under all conditions of construction. Sufficient foundation investigations, as well as any necessary laboratory testing of foundation material, shall be performed in order to determine the design requirements for foundation stability. The analyses of the foundation conditions shall take into consideration the effect of underground mine workings, if any, upon the stability of the disposal facility.

If any examination or inspection discloses that a potential hazard exists, the Division shall be informed promptly of the finding and of the emergency procedures formulated for public protection and remedial action. If adequate procedures cannot be formulated or implemented the Division shall be notified immediately. The Division shall then notify the appropriate agencies that other emergency procedures are required to protect the public.

### Analysis:

#### Coal Mine Waste

Section 3.5.8 of the MRP indicates that 150 cu yds of coal mine waste may be temporarily stored (15 days) on the main storage pad shown on Plate 2-4C. Drainage from this temporary location goes to Sediment Pond A.

Final storage of coal mine waste is permitted at the Hiawatha (C/007/011) in Slurry Pond 5A. Prior to shipping to Hiawatha, material will be tested for acid/toxic properties according to Table 3K-1.

### Findings:

The information provided is adequate with regard to spoil and waste disposal requirements of the Regulations.

## HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Minimum Regulatory Requirements:

#### General

All underground mining and reclamation activities shall be conducted to minimize disturbance of the hydrologic balance within the permit and adjacent areas, to prevent material damage to the hydrologic balance outside the permit area, and to support approved postmining land uses in accordance with the terms and conditions of the approved permit and the performance standards of this part. The Division may require additional preventative, remedial, or monitoring measures to assure that material damage to the hydrologic balance outside the permit area is prevented. Mining and reclamation practices that minimize water pollution and changes in flow shall be used in preference to water treatment.

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### Diversions: General

With the approval of the Division, any flow from mined areas abandoned before May 3, 1978, and any flow from undisturbed areas or reclaimed areas, after meeting the criteria for siltation structure removal, may be diverted from disturbed areas by means of temporary or permanent diversions. All diversions shall be designed to minimize adverse impacts to the hydrologic balance within the permit and adjacent areas, to prevent material damage outside the permit area and to assure the safety of the public. Diversions shall not be used to divert water into underground mines without approval of the Division.

The diversion and its appurtenant structures shall be designed, located, constructed, and maintained to: be stable; provide protection against flooding and resultant damage to life and property; prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow outside the permit area; and, comply with all applicable local, State, and Federal laws and regulations.

Temporary diversions shall be removed when no longer needed to achieve the purpose for which they were authorized. The land disturbed by the removal process shall be restored. Before diversions are removed, downstream water-treatment facilities previously protected by the diversion shall be modified or removed, as necessary, to prevent overtopping or failure of the facilities. This requirement shall not relieve the operator from maintaining water-treatment facilities as otherwise required.

A permanent diversion or a stream channel reclaimed after the removal of a temporary diversion shall be designed and constructed so as to restore or approximate the premining characteristics of the original stream channel including the natural riparian vegetation to promote the recovery and the enhancement of the aquatic habitat. The Division may specify additional design criteria for diversions.

### Diversions: Perennial and intermittent streams

Diversion of perennial and intermittent streams within the permit area may be approved by the Division after making the finding relating to stream buffer zones that the diversions will not adversely affect the water quantity and quality and related environmental resources of the stream. The design capacity of channels for temporary and permanent stream channel diversions shall be at least equal to the capacity of the unmodified stream channel immediately upstream and downstream from the diversion. Protection against flooding and resultant damage to life and property shall be met when the temporary and permanent diversions for perennial and intermittent streams are designed so that the combination of channel, bank and flood-plain configuration is adequate to pass safely the peak runoff of a 10-year, 6-hour precipitation event for a temporary diversion and a 100-year, 6-hour precipitation event for a permanent diversion. The design and construction of all stream channel diversions of perennial and intermittent streams shall be certified by a qualified registered professional engineer as meeting the performance standards and any design criteria set by the Division.

### Stream buffer zones

No land within 100 feet of a perennial stream or an intermittent stream shall be disturbed by underground mining activities, unless the Division specifically authorizes underground mining activities closer to, or through, such a stream. The Division may authorize such activities only upon finding that: underground mining activities will not cause or contribute to the violation of applicable State or Federal water quality standards and will not adversely affect the water quantity and quality or other environmental resources of the stream; and, if there will be a temporary or permanent stream-channel diversion, it will comply with the regulatory requirements for diversions.

The area not to be disturbed shall be designated as a buffer zone, and the operator shall mark it accordingly with buffer zone markers.

### Sediment control measures

Appropriate sediment control measures shall be designed, constructed, and maintained using the best technology currently available to: prevent, to the extent possible, additional contributions of sediment to stream flow or to runoff outside the permit area; meet the more stringent of applicable State or Federal effluent limitations; and, minimize erosion to the extent possible.

Sediment control measures include practices carried out within and adjacent to the disturbed area. The sedimentation storage capacity of practices in and downstream from the disturbed areas shall reflect the degree to which successful mining and reclamation techniques are applied to reduce erosion and control sediment. Sediment control measures consist of the utilization of proper mining and reclamation methods and sediment control practices, singly or in combination. Sediment control methods include but are not limited to: disturbing the smallest practicable area at any one time during the mining operation through progressive backfilling, grading, and prompt revegetation; stabilizing the backfilled material to promote a reduction of the rate and volume of runoff; retaining sediment within disturbed areas; diverting runoff away from disturbed areas; diverting runoff using protected channels or pipes through disturbed areas so as not to cause additional erosion; using straw dikes, riprap, check dams, mulches, vegetative sediment filters, dugout ponds, and other measures that reduce overland flow velocity, reduce runoff volume, or trap sediment; treating with chemicals; and, treating mine drainage in underground sumps.

### Siltation Structures: General

All surface drainage from disturbed areas shall be passed through a siltation structure before leaving the permit area. Siltation structures shall mean a sedimentation pond, a series of sedimentation ponds, or other treatment facility. Other treatment

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facilities means any chemical treatments, such as flocculation, or mechanical structures, such as clarifiers, that have a point-source discharge and that are utilized to prevent additional contribution of suspended solids to streamflow or runoff outside the permit area.

Disturbed area requiring treatment through a siltation structure shall not include those areas in which the only underground mining activities include: diversion ditches, siltation structures, or roads that are designed, constructed and maintained in accordance with the regulatory requirements; and, for which the upstream area is not otherwise disturbed by the operator.

Additional contributions of suspended solids and sediment to streamflow or runoff outside the permit area shall be prevented to the extent possible using the best technology currently available. Siltation structures for an area shall be constructed before beginning any underground mining activities in that area, and upon construction shall be certified by a qualified registered professional engineer, or when authorized under the regulations, by a qualified registered professional land surveyor, to be constructed as designed and as approved in the reclamation plan.

Any siltation structure which impounds water shall be designed, constructed and maintained in accordance with the requirements for impoundments.

Siltation structures shall be maintained until removal is authorized by the Division and the disturbed area has been stabilized and revegetated. In no case shall the structure be removed sooner than 2 years after the last augmented seeding. When the siltation structure is removed, the land on which the siltation structure was located shall be regraded and revegetated in accordance with the reclamation plan. Sedimentation ponds approved by the Division for retention as permanent impoundments may be exempted from this requirement.

Any point-source discharge of water from underground workings to surface waters which does not meet effluent limitations shall be passed through a siltation structure before leaving the permit area.

### Siltation Structures: Sedimentation ponds

Sedimentation ponds, when used, shall: be used individually or in series; be located as near as possible to the disturbed area and out of perennial streams unless approved by the Division; and, be designed, constructed, and maintained to:

- 1.) Provide adequate sediment storage volume;
- 2.) Provide adequate detention time to allow the effluent from the ponds to meet State and Federal effluent limitations;
- 3.) Contain or treat the 10-year, 24-hour precipitation event ("design event") unless a lesser design event is approved by the Division based on terrain, climate, other site-specific conditions and on a demonstration by the operator that the effluent limitations will be met;
- 4.) Provide a nonclogging dewatering device adequate to maintain the required time;
- 5.) Minimize, to the extent possible, short circuiting;
- 6.) Provide periodic sediment removal sufficient to maintain adequate volume for the design event;
- 7.) Ensure against excessive settlement;
- 8.) Be free of sod, large roots, frozen soil, and acid- or toxic-forming coal-processing waste; and
- 10.) Be compacted properly.

A sedimentation pond shall include either a combination of principal and emergency spillways or a single open-channel spillway configured as specified in this section, designed and constructed to safely pass the applicable design precipitation event. The Division may approve a single open-channel spillway that is: of nonerodible construction and designed to carry sustained flows; or earth- or grass-lined and designed to carry short-term infrequent flows at non-erosive velocities where sustained flows are not expected.

The required design precipitation event for a sedimentation pond meeting the spillway requirements of this section is: for a sedimentation pond meeting the size or other criteria of 30 CFR Sec. 77.216(a), a 100-year 6-hour event, or greater event as specified by the Division; or, for a sedimentation pond not meeting the size or other criteria of 30 CFR Sec. 77.216(a), a 25-year 6-hour event, or greater event as specified by the Division.

In lieu of meeting the above spillway requirements, the Division may approve a sedimentation pond that relies primarily on storage to control the runoff from the design precipitation event when it is demonstrated by the operator and certified by a qualified registered professional engineer or, as applicable, a qualified registered professional land surveyor that; the sedimentation pond will safely control the design precipitation event; the water from which shall be safely removed in accordance with current, prudent, engineering practices; and, such a sedimentation pond shall be located where failure would not be expected to cause loss of life or serious property damage. If the sediment pond is located where failure would be expected to cause loss of life or serious property damage, a sedimentation pond that relies primarily on storage to control the runoff from the design precipitation event may be allowed if, in addition to the design event, is: in the case of a sedimentation pond meeting the size or other criteria of 30 CFR Sec. 77.216(a), designed to control the precipitation of the probable maximum precipitation of a 6-hour event, or greater event as specified by the Division; or, in the case of a sedimentation pond not meeting the size or other criteria of 30 CFR Sec. 77.216(a), designed to control the precipitation of a 100-year 6-hour event, or greater event as specified by the Division.

### Siltation Structures: Other treatment facilities

Other treatment facilities shall be designed to treat the 10-year, 24-hour precipitation even unless a lesser design event is

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approved by the Division based on terrain, climate, other site-specific conditions and a demonstration by the operator that the effluent limitations will be met. Other treatment facilities shall be designed, constructed and maintained accordance with the applicable requirements as described under sediment ponds.

### Siltation Structures: Exemptions

Exemptions to the requirements of this section may be granted if: the disturbed drainage area within the total disturbed area is small; and, the operator demonstrates that siltation structures and alternate sediment control measures are not necessary for drainage from the disturbed drainage areas to meet effluent limitations and applicable State and Federal water-quality standards for the receiving waters.

## Analysis:

### General

There are some confusing items in the submittal. First, most of the pages are labeled "DRAFT" which should not be the case for a proposal to modify the Mining and Reclamation Plan (MRP). This reviewer checked with Division Management and there is no Division requirement to mark submittals with the word "DRAFT". Pages with MRP additions and modifications are required to contain redline and strikeout of such text. This is sufficient to designate changes to the MRP. All pages stamped "DRAFT" will need to have that designation removed. Second, text on page 3P-3 refers to a retaining wall that is shown on Plate 2-4G. No retaining wall is shown on that Plate. There is a retaining wall shown at cross section 3+00, however, no retaining wall is shown on Plate 3-7G where the cross section location is shown. The Operator must clarify whether a retaining wall is used or not, and show that appropriately with changes to text and/or plates. Third, the text on page 7-88 simply ends abruptly in mid-sentence. The missing continuation could not be found and this needs to be corrected.

### Diversions

Ten new ditches and six new culverts are added to this expansion of the disturbed area. The total increase in area is about 2.6 acres. These ditches and culverts are along and under the 2,000-foot road which accesses the Tank Seam coal outcrop. Tables are used to summarize all calculations. Where possible flows are diverted away from the new disturbed area. Examples include ditches D-42U and D-43U. This is good design as well as a regulatory requirement.

The correct design storm, 10-year, 6-hour event, was used for all calculations. The runoff curve numbers were checked for all the drainages. Similarly the Manning n numbers and slopes were verified for the drainage ditches. These were all found to be appropriate. Several of the slopes were quite steep, for example D-42U average slope is 36% and maximum slope is 63%, but the flows are minimal. D-42U only flows 0.04cfs.

All the culvert calculations were similarly found to be adequate. Manning n numbers were verified and the H/D ratio is less than 1 for all culverts. However, culvert C-40U, at the upper pad, causes the Division some concern with regard to future maintenance and possible future damage. The 12-inch diameter culvert is about 160 feet long and only slopes 0.001 (0.1%). Such a long culvert with such a low slope is very likely to plug with sediment and debris. The culvert does meet regulatory requirements as presently designed. Still, the Division

would recommend the Operator employ methods to prevent plugging and to make cleanout easier. Some possibilities are: increase the slope, use a smooth pipe rather than corrugated, use a larger diameter pipe, and install a "Y" cleanout at the culvert midpoint. Certainly there should be sufficient earthen cover over the culvert to prevent crushing by heavy mining machinery. A trashrack and debris basin will be required for C-40U as explained in R645-301-742.423.3.

### **Stream Buffer Zones**

Stream Buffer Zones do not apply to this amendment. All the Hydrologic drainages are on a mountain side-slope without well-defined drainages. There are shallow ephemeral drainages, however, they are located near the top of the drainage and only flow in direct response to rainfall on the immediate watershed. No stream Buffer Zones signs are needed.

### **Sediment Control Measures**

Silt fences will be used below disturbed areas before construction begins. Erosion control mat and seeding will be employed on topsoil storage areas and excess fill storage areas.

The road construction sequence calls for first using a backhoe to create a berm on the downhill side of the road. This should will prevent rock and dirt from leaving the disturbed area.

### **Siltation Structures**

There are no sediment ponds in this amendment. There is a pad or working area at the very upper end of the road at the coal seam face-up. The only runoff for this area is the result of rain falling directly on the pad. This pad is 0.47 acre in size and runoff is contained in Catch Basin 3, which is a full-containment basin with capacity for 3-years worth of sediment. There is also a commitment to inspect and clean out the basin at least quarterly. This area is designated BTCA Area Z.

### **Exemptions for Siltation Structures**

There are two new BTCA Area N designations. These are locations where excess fill from the road and pad construction is stored until reclamation. One area, 0.232 acre, is located below the second switchback on the access road while the other, 0.269 acre, is located just below the hunting cabin turnoff. Both areas will be protected from erosion and saturation by berms along the upper edges of the piles. In addition, the road will be sloped away from the piles. The piles themselves will have erosion control matting and will be seeded.

BTCA Area T is the topsoil storage area of about 0.31 acre located just below the first turn below the pad area. This pile will be totally contained by a berm and will be covered with erosion control matting and be seeded.

### *Discharges into an Underground Mine*

The Permittee needs to state if there will be a discharge into the mine.

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*Gravity Discharges*

The Permittee needs to state if there will be a discharge from the mine.

**Sedimentation Ponds**

No sediment ponds are associated with the construction of the WHR Tank Seam Pad area or the No. 4 Mine Access Road.

**Impoundments**

No impoundments are associated with the construction of the WHR Tank Seam Pad area or the No. 4 Mine Access Road.

**Findings:**

This section of the application does not meet regulatory requirements. Accordingly, the Permittee must address those deficiencies as found within this Draft Technical Analysis and provide the following, prior to approval, in accordance with the requirements of:

**R645-301-121.200**, 1) All pages stamped "DRAFT" will need to have that designation removed, 2) The Operator must clarify whether a retaining wall is used or not, and show that appropriately with changes to text and/or plates, and 3) The text on page 7-88 simply ends abruptly in mid-sentence. The missing continuation could not be found and this needs to be corrected.

**R645-301-742**, A trashrack and debris basin will be required for C-40U as explained in R645-301-742.423.3.

**R645-301-521.152 and R645-301-521.190**, The Permittee must state if there will be discharges into or from the WHR Tank Seam portals.

**SUPPORT FACILITIES AND UTILITY INSTALLATIONS**

Regulatory Reference: 30 CFR 784.30, 817.180, 817.181; R645-301-526.

Minimum Regulatory Requirements:

Each applicant for an underground coal mining and reclamation permit shall submit a description, plans, and drawings for each support facility to be constructed, used, or maintained within the proposed permit area. The plans and drawings shall include a map, appropriate cross sections, design drawings, and specifications sufficient to demonstrate compliance.

Support facilities shall be operated in accordance with a permit issued for the mine or coal preparation plant to which it is incident or from which its operation results. In addition to the other provisions of this part, support facilities shall be located, maintained, and used in a manner that: prevents or controls erosion and siltation, water pollution, and damage to public or private property; and, to the extent possible using the best technology currently available, minimizes damage to fish, wildlife, and related environmental values and minimizes additional contributions of suspended solids to streamflow or runoff outside the permit area. Any such contributions shall not be in excess of limitations of State or Federal law.

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All surface and underground mining activities shall be conducted in a manner which minimizes damage, destruction, or disruption of services provided by oil, gas, and water wells; oil, gas, and coal-slurry pipelines, railroads; electric and telephone lines; and water and sewage lines which pass over, under, or through the permit area, unless otherwise approved by the owner of those facilities and the Division.

Support facilities shall be operated in accordance with a permit issued for the mine or coal preparation plant to which it is incident or from which its operation results. In addition to the other provisions of this part, support facilities shall be located, maintained, and used in a manner that prevents or controls erosion and siltation, water pollution, and damage to public or private property. Support facilities shall, to the extent possible using the best technology currently available, minimize damage to fish, wildlife, and related environmental values; and, minimize additional contributions of suspended solids to streamflow or runoff outside the permit area. Any such contributions shall not be in excess of limitations of State or Federal law.

### Analysis:

The water tank for the WHR Blind Canyon Seam mine will come from the old Tank Seam mine. The WHR Blind Canyon Seam Ventilation Fan will come from the old Tank Seam mine. The Division will allow the Permittee to relocate the water tank and ventilation fan.

The Permittee wants to withdraw constructing a shop building at the WHR Blind Canyon seam mine. Since the building was not constructed, the Division will allow the Permittee to withdraw the building.

### Findings:

The Permittee has met the minimum requirements for this section of the regulations.

## SIGNS AND MARKERS

Regulatory Reference: 30 CFR 817.11; R645-301-521.

### Minimum Regulatory Requirements:

Signs and markers shall: be posted, maintained, and removed by the person who conducts the underground mining activities; be of a uniform design throughout the activities that can be easily seen and read; be made of durable material; and, conform to local laws and regulations. Signs and markers shall be maintained during all activities to which they pertain.

Mine and permit identification signs shall be displayed at each point of access from public roads to areas of surface operations and facilities on permit areas for underground mining activities. Signs will show the name, business address, and telephone number of the person who conducts underground mining activities and the identification number of the current regulatory program permit authorizing underground mining activities. Signs shall be retained and maintained until after the release of all bonds for the permit area.

Perimeter markers shall clearly mark the perimeter of all areas affected by surface operations or facilities before beginning mining activities.

Buffer zones shall be clearly marked to prevent disturbance by surface operations and facilities.

Topsoil markers shall be used where topsoil or other vegetation-supporting material is segregated and stockpiled.

### Analysis:

The Permittee is responsible for placing all signs and marks as required by the regulations. The Division will inspect the site on a monthly basis. If signs or markers are inadequate then the Division will take action.

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**Findings:**

The Permittee has met the minimum requirements of this section of the regulations.

**USE OF EXPLOSIVES**

Regulatory Reference: 30 CFR 817.61, 817.62, 817.64, 817.66, 817.67, 817.68; R645-301-524.

**Minimum Regulatory Requirements:**

**General Requirements**

These requirements apply to surface blasting activities incident to underground coal mining, including, but not limited to, initial rounds of slopes and shafts. Each operator shall comply with all applicable State and Federal laws and regulations in the use of explosives.

All surface blasting operations incident to underground mining shall be conducted under the direction of a certified blaster. Certificates of blaster certification shall be carried by blasters or shall be on file at the permit area during blasting operations. A blaster and at least one other person shall be present at the firing of a blast. Any blaster who is responsible for conducting blasting operations at a blasting site shall be familiar with the site-specific performance standards and give direction and on-the-job training to persons who are not certified and who are assigned to the blasting crew or assist in the use of explosives.

An anticipated blast design shall be submitted if blasting operations will be conducted within 1,000 feet of any building used as a dwelling, public building, school, church or community or institutional building or 500 feet of active or abandoned underground mines. The blast design may be presented as part of a permit application or at a time, before the blast, approved by the Division. The blast design shall contain sketches of the drill patterns, delay periods, and decking and shall indicate the type and amount of explosives to be used, critical dimensions, and the location and general description of structures to be protected, as well as a discussion of design factors to be used, which protect the public and meet the applicable airblast, flyrock, and ground-vibration standards. The blast design shall be prepared and signed by a certified blaster. The Division may require changes to the design submitted.

**Analysis:**

**General**

The Permittee has not submitted a specific blasting plan for the WHR Tank Seam portal pad area. If the Permittee finds that blasting is needed during construction then they can submit a blasting plan to the Division for review.

**Findings:**

The Permittee has met the minimum requirements of this section of the regulations.

**MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS**

Regulatory Reference: 30 CFR 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

**Minimum Regulatory Requirements:**

Each application shall contain maps, plans, and cross sections which show the mining 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.

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The following shall be shown for the proposed permit area:

### Affected area 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 mining design and mining operations shall clearly show the affected and permit area boundaries in reference to the reclamation work being accomplished.

### Mining facilities maps

Location of each facility used in conjunction with mining operations. Such structures and facilities shall include, but not be limited to: buildings, utility corridors, roads, and facilities to be used in mining and reclamation operations or by others within the permit area; each coal storage, cleaning, and loading area; each topsoil, spoil, coal preparation waste, underground development waste, and noncoal waste storage area; each water diversion, collection, conveyance, treatment, storage and discharge facility; each source of waste and each waste disposal facility relating to coal processing or pollution control; each facility to be used to protect and enhance fish and wildlife related environmental values; each explosives storage and handling facility; location of each sedimentation pond, permanent water impoundment, coal processing waste bank, and coal processing water dam and embankment, and disposal areas for underground development waste and excess spoil; and, each plan or profile, at cross sections specified by the Division, of the anticipated surface configuration to be achieved for the affected areas during mining operations.

### Mine workings maps

Location and extent of known workings of proposed, active, inactive, or abandoned underground mines, including mine openings to the surface within the proposed permit and adjacent areas. Location and extent of existing or previously surface-mined areas within the proposed permit area.

### 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, as required during mining operations.

### 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 Maps

Since no new areas will be permitted, the affected area current maps are adequate.

### Mining Facilities Maps

Plate 2-4G shows the surface facilities for the WHR Blind Seam and Tank Seam portal areas. At the WHR Blind Seam area, the Permittee shows that the shop building will not be

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constructed and that the water tank has been moved near to the portals. At the WHR Tank Seam area the location of the portals, water tank and fan are shown along with the access road.

Plate 2-4E shows the reclaimed areas for the fan and water tank. Those areas will be reclaimed.

**Mine Workings Maps**

Plate 3-4C, Tank Seam, shows the location of the Tank Seam mine workings. The general mine plan has been approved by the Division.

**Findings:**

The Permittee has met the minimum requirements of this section of the regulations.

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### 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 definitions of AOC are couched in terms of backfilling and grading in order to achieve certain results. The mining and reclamation plan must provide the basis for determining whether the proposed backfilling and grading plan will meet the following:

##### *Final Surface Configuration*

The final surface configuration should closely resemble the general surface configuration of the land before mining. Which means that the pre-mining and post-mining slopes should be

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similar and that the reclaimed site should blend into the surrounding area. Note: that the term AOC does necessarily mandate the attainment of original elevation

The cross-sections in Appendix 3P show that the Permittee plans to restore the site to the pre-mining topography. Since no materials will be moved off site or imported (except for possible road base) the Permittee will not have mass balance problems. The cross-sections show that the reclaimed site will blend into the surrounding area.

### *All Spoil Piles to be Eliminated*

No spoil piles will be created as part of the construction of the No. 4 Mine Access road or the WHR Tank Seam pad area.

### *All Highwalls to be Eliminated*

While the Permittee does not address this issue in the text, the cross-sections in Appendix 3P show that all highwalls will be eliminated. The highwalls on the cross-sections are clearly marked and shown to be backfilled to the original slope.

Some cut slopes associated with the road will be left. The Division allows cut slopes to be left because they are either needed to support the post-mining land use or reclamation of the cut slopes cannot be done without violating a regulation such as slope stability.

## **Hydrology**

The two main hydrology issues are restoration of the drainages and sediment control. No major drainages exist at the WHR Tank Seam pad area. The site will be restored to AOC standards so that the drainage patterns should be restored to the pre-mining conditions. The sites area BTCA's therefore no sediment ponds will be constructed or used during operations or reclamation. Those issues are also addressed in the hydrology section of the TA.

## **Post-Mining Land Use**

The pre-mining and post-mining land use for the Tank Seam pad area and the No. 4 Mine Access road should be the same. By restoring the site to the pre-mining condition, the land will be able to support the post-mining land use.

## **Findings:**

The information provided in the proposed amendment is not considered adequate to meet the requirements of this section of the regulations. Before approval, the Permittee must provide the following in accordance with:

**R645-301-521.152 and R645-301-553.120**, The Permittee must describe in the text the highwall elimination plan.

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### 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

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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.

**Analysis:**

**General**

The general backfilling and grading requirements are:

- 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
- Support the approved postmining land use.

The AOC issues were addressed in that section of the TA. The general requirements for restoring the site to the pre-mining surface configuration have been met.

The highwall issues were addressed in the AOC section. The Permittee proposes to eliminate all highwalls at the WHR Tank Seam pad. No spoil piles or large depressions are associated with the WHR Tank Seam pad or No. 4 Mine Access Road.

The Permittee did not address the slope stability issues associated with the WHR Tank Seam pad. While the Permittee did show that the operational slopes would be stable, they did not show that the reclaimed slopes would meet the safety factor requirements.

The hydrology and post-mining land use requirement are discussed in other sections of the TA.

The Permittee did not address how exposed coal seam in the WHR Tank Seam area will be backfilled. The Division needs enough details to determine if the exposed coal seams are adequately covered to control impacts on surface and groundwater and prevent sustained combustion and to minimize adverse effects on plant growth and the approved postmining land use.

The backfilling and grading plan does not call for any cut-and-fill terraces to be left.

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**Previously Mined Areas**

No previously mined areas are associated with the WHR Tank Seam pad area. Much of the No. 4 Mine Access Road was disturbed before mining.

**Findings:**

The information provided in the proposed amendment is not considered adequate to meet the requirements of this section of the regulations. Before approval, the Permittee must provide the following in accordance with:

**R645-301-553.300**, The Permittee must describe how the exposed coal seams will be covered to prevent impacts on surface and ground water and prevent sustained combustion. The location of coal seam on the cross-sections would help show that the reclamation plan is adequate.

**R645-301-553.130**, The Permittee must show that all reclaimed slopes in the WHR Tank Seam will have static safety factors of 1.3 or greater.

**MINE OPENINGS**

Regulatory Reference: 30 CFR 817.13, 817.14, 817.15; R645-301-513, -301-529, -301-551, -301-631, -301-748, -301-765, -301-748.

**Minimum Regulatory Requirements:**

Each exploration hole, other drillhole or borehole, shaft, well, or other exposed underground opening shall be cased, lined, or otherwise managed as approved by the Division to prevent acid or other toxic drainage from entering ground and surface waters, to minimize disturbance to the prevailing hydrologic balance and to ensure the safety of people, livestock, fish and wildlife, and machinery in the permit area and adjacent area. Each exploration hole, drill hole or borehole or well that is uncovered or exposed by mining activities within the permit area shall be permanently closed, unless approved for water monitoring or otherwise managed in a manner approved by the Division. Use of a drilled hole or monitoring well as a water well must meet the provisions required to protect the hydrologic balance. This section does not apply to holes drilled and used for blasting, in the area affected by surface operations.

Each mine entry which is temporarily inactive, but has a further projected useful service under the approved permit application, shall be protected by barricades or other covering devices, fenced, and posted with signs, to prevent access into the entry and to identify the hazardous nature of the opening. These devices shall be periodically inspected and maintained in good operating condition by the person who conducts the underground mining activities.

Each exploration hole, other drill hole or borehole, shaft, well, and other exposed underground opening which has been identified in the approved permit application for use to return underground development waste, coal processing waste or water to underground workings, or to be used to monitor ground water conditions, shall be temporarily sealed until actual use.

When no longer needed for monitoring or other use approved by the Division upon a finding of no adverse environmental or health and safety effects, or unless approved for transfer as a water well, each shaft, drift, adit, tunnel, exploratory hole, entry way or other opening to the surface from underground shall be capped, sealed, backfilled, or otherwise properly managed, as required by the Division and consistent with the requirements of 30 CFR Section 75.1711. Permanent closure measures shall be designed to prevent access to the mine workings by people, livestock, fish and wildlife, machinery and to keep acid or other toxic drainage from entering ground or surface waters.

**Analysis:**

The approved MRP has a mine openings sealing plan. The plan deals with sealing portals and is adequate for the WHR Tank Seam pad area.

**Findings:**

The Permittee has met the minimum requirements of this section of the regulations.

**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:**

**Redistribution**

Cut and Fill calculations are shown in Table 3P-1 on page 3P-4. Calculations were developed from Plates 2-4G, Plate 3-2G and 3-7G using AutoCad Quicksurf 3-D modeling software. Resulting cross-sections are found in Attachment A (Note: the scale changes with each cross-section). Plate 3-7G shows the locations of the cross-sections.

Table 8.9-1 Reclamation Area Summary shows includes areas TS-16 (0.76 acres) and TS-17 (1.79 acres) for the Wild Horse Ridge Tank Seam, for a total of 2.55 additional acres. Table 8.3-2 Soil Unit Acreages Within the Disturbed Area indicates that the Wild Horse Ridge Tank Seam development will add 2.4 acres to the total disturbed acreage. Total disturbed acreage on Tables 8.3-2 and 8.9-1 does not appear to be in agreement.

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Eight inches of topsoil will be replaced over the regraded area (page 3P-6).

Two samples will be drawn from the re-graded subsoils of the WHR Tank Seam Upper Pad to be tested for suitability.

**Findings:**

The information provided is not adequate to clarify topsoil redistribution. Prior to approval and in accordance with:

**R645-301-242**, Check itemization of total disturbed acreage on Table 8.3-2 and Table 8.9-1 for agreement.

**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 Permittee will reclaim the portal pad area and the turn off road from the hunting cabin access road. The general reclamation plan is shown on Plate 3-2G, see Plate 2-4G for operational status. The cross-sections for the pre-mining, operational and post-mining for the No. 4 Mine Access Road and WHR Tank Seam Portal Pad area are in Attachment A of

Appendix  
3P.

The Permittee did not address the reclamation of the portal pad or the turn off road in the text. A description of the reclamation plan must be included in the text of the MRP. At a minimum, the description should include the following:

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- Reclamation timetable for the road. (Revise Table 3.6.8.1)
- Basic description of: closing the road to traffic; removing/replacing culverts, 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

The Permittee must address why the No. 4 Mine Access Road will remain as part of the post-mining land use in the reclamation section of the MRP.

### Findings:

The information provided in the proposed amendment is not considered adequate to meet the requirements of this section of the regulations. Before approval, the Permittee must provide the following in accordance with:

**R645-301-542.600**, The Permittee must 1) address the reclamation of the portal pad or the turn off road in the text and 2) why the No. 4 Mine Access Road will remain as part of the post-mining land use.

## 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

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requirements of this Chapter and to conform to the approved reclamation plan.

### **Analysis:**

#### **Diversions**

The road to the pad area is mostly an existing road to a hunting cabin. Only the last 200 feet and the face-up pad (0.47 acre) comprise additional road building. As part of the post-mining land use, the road will remain, except for that last 200 feet and the pad. These areas will be backfilled and restored to their natural slope during reclamation. The remainder of the road all the way down to Bear Creek will remain in place after reclamation.

Appendix 7-H, Reclamation Channel Sizing contains calculations for the reclamation ditches and culverts. The appropriate design event, a 100-year, 6-hour storm, was used for the calculations. The runoff curve numbers were checked for all the drainages. Similarly the Manning n numbers and slopes were verified for the drainage ditches. These were all found to be appropriate. The culverts installed in the Operational Phase of mining are the same ones to be left in place after reclamation and the diameters were checked to be sure they are the same.

#### **Stream Buffer Zones**

Stream Buffer Zones do not apply to this amendment. All the Hydrologic drainages are on a mountain side-slope without well-defined drainages. There are shallow ephemeral drainages, however, they are located near the top of the drainage and only flow in direct response to rainfall on the immediate watershed. No stream Buffer Zones signs are needed.

#### **Sediment Control Measures**

Silt fences will be used below disturbed areas before construction begins. Erosion control mat and seeding will be employed on reclaimed areas.

#### **Siltation Structures**

Silt fences are to be installed below the disturbed area before construction is begun. The silt fence installation will be according to a diagram in the original MRP which has already been approved.

#### *Acid and Toxic-Forming Materials*

During final reclamation, subsoils will be tested with the frequency outlined in Table 8.11-1 for acid/toxic parameters. The MRP describes final placement of coal mine waste in Section 3.5.8.

#### *Discharges into an Underground Mine*

The Permittee needs to address discharges into underground mines after reclamation.

### *Gravity Discharges*

The Permittee needs to address the discharge into underground mines after reclamation.

### **Sedimentation ponds**

No sediment ponds are in the WHR Tank Seam pad area.

### **Impoundments**

No impoundments are located in the WHR Tank Seam pad area.

### **Findings:**

The information provided in the proposed amendment is not considered adequate to meet the requirements of this section of the regulations. Before approval, the Permittee must provide the following in accordance with:

**R645-301-521.152 and R645-301-521.190**, The Permittee must state if there will be discharges into or from the WHR Tank Seam portals after reclamation.

## **REVEGETATION**

Regulatory Reference: 30 CFR 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

Minimum Regulatory Requirements:

Revegetation: General requirements

The permittee shall establish on regraded areas and on all other disturbed areas except water areas and surface areas of roads that are approved as part of the postmining land use, a vegetative cover that is in accordance with the approved permit and reclamation plan and that is: diverse, effective, and permanent; comprised of species native to the area, or of introduced species where desirable and necessary to achieve the approved postmining land use and approved by the Division; at least equal in extent of cover to the natural vegetation of the area; and, capable of stabilizing the soil surface from erosion.

The reestablished plant species shall: be compatible with the approved postmining land use; have the same seasonal characteristics of growth as the original vegetation; be capable of self-regeneration and plant succession; be compatible with the plant and animal species of the area; and, meet the requirements of applicable State and Federal seed, poisonous and noxious plant, and introduced species laws or regulations.

The Division may grant exception to these requirements when the species are necessary to achieve a quick-growing, temporary, stabilizing cover, and measures to establish permanent vegetation are included in the approved permit and reclamation plan.

When the Division approves a cropland postmining land use, the Division may grant exceptions to the requirements related to the original and native species of the area. Areas identified as prime farmlands must also meet those specific requirements as specified under that section.

Revegetation: Standards for success

Success of revegetation shall be judged on the effectiveness of the vegetation for the approved postmining land use, the extent of cover compared to the cover occurring in natural vegetation of the area, and the general requirements for Revegetation.

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Standards for success and statistically valid sampling techniques for measuring success shall be selected by the Division and included in an approved regulatory program.

Standards for success shall include criteria representative of unmined lands in the area being reclaimed to evaluate the appropriate vegetation parameters of ground cover, production, or stocking. Ground cover, production, or stocking shall be considered equal to the approved success standard when it is not less than 90 percent of the success standard. The sampling techniques for measuring success shall use a 90-percent statistical confidence interval (i.e., a one-sided test with a 0.10 alpha error).

Standards for success shall be applied in accordance with the approved postmining land use and, at a minimum, the following conditions:

- 1.) For areas developed for use as grazing land or pasture land, the ground cover and production of living plants on the revegetated area shall be at least equal to that of a reference area or such other success standards approved by the Division.
- 2.) For areas developed for use as cropland, crop production on the revegetated area shall be at least equal to that of a reference area or such other success standards approved by the Division.
- 3.) For areas to be developed for fish and wildlife habitat, recreation, shelter belts, or forest products, success of vegetation shall be determined on the basis of tree and shrub stocking and vegetative ground cover. Such parameters are described as follows: minimum stocking and planting arrangements shall be specified by the Division on the basis of local and regional conditions and after consultation with and approval by the State agencies responsible for the administration of forestry and wildlife programs. Consultation and approval may occur on either a programwide or a permit-specific basis; trees and shrubs that will be used in determining the success of stocking and the adequacy of the plant arrangement shall have utility for the approved postmining land use. Trees and shrubs counted in determining such success shall be healthy and have been in place for not less than two growing seasons. At the time of bond release, at least 80 percent of the trees and shrubs used to determine such success shall have been in place for 60 percent of the applicable minimum period of responsibility; and, vegetative ground cover shall not be less than that required to achieve the approved postmining land use.

For areas to be developed for industrial, commercial, or residential use less than 2 years after regrading is completed, the vegetative ground cover shall not be less than that required to control erosion.

For areas previously disturbed by mining that were not reclaimed to the requirements of the performance standards and that are remined or otherwise redisturbed by surface coal mining operations, as a minimum, the vegetative ground cover shall be not less than the ground cover existing before redisturbance and shall be adequate to control erosion.

The period of extended responsibility for successful revegetation shall begin after the last year of augmented seeding, fertilizing, irrigation, or other work, excluding husbandry practices that are approved by the Division.

In areas of more than 26.0 inches of annual average precipitation, the period of responsibility shall continue for a period of not less than five full years. Vegetation parameters identified for grazing land or pasture land and cropland shall equal or exceed the approved success standard during the growing seasons of any two years of the responsibility period, except the first year. Areas approved for the other uses shall equal or exceed the applicable success standard during the growing season of the last year of the responsibility period.

In areas of 26.0 inches or less average annual precipitation, the period of responsibility shall continue for a period of not less than 10 full years. Vegetation parameters shall equal or exceed the approved success standard for at least the last 2 consecutive years of the responsibility period.

The Division may approve selective husbandry practices, excluding augmented seeding, fertilization, or irrigation, provided it obtains prior approval from the Director as a State Program Amendment that the practices are normal husbandry practices, without extending the period of responsibility for revegetation success and bond liability, if such practices can be expected to continue as part of the postmining land use or if discontinuance of the practices after the liability period expires will not reduce the probability of permanent revegetation success. Approved practices shall be normal husbandry practices within the region for unmined lands having land uses similar to the approved postmining land use of the disturbed area, including such practices as disease, pest, and vermin control; and any pruning, reseeding, and transplanting specifically necessitated by such actions.

### Analysis:

#### General Requirements

A seed mixture for the Mountain Brush/Conifer vegetation type must be provided in the application. No other changes in the reclamation plan are required and findings are the same as those detailed in the initial WHR permitting.

### **Standards for Success**

A new Mountain Brush/Conifer Reference Area was established for the Tank Seam pad and road in the WHR area (Appendix 9-H and Plate 9-1). There are some differences in species composition between the reference area and proposed disturbed area; the reference area is similar enough that it is considered an acceptable standard.

The reference area had 1261 woody plants per acre, and the proposed disturbed area had 1117. Considering the plant communities and the topography, 1000 plants per acre is considered an attainable and acceptable standard for success for woody plant density. In addition to this number standard and in consideration of the value of this area for wildlife the woody plant density and diversity standard should include a commitment that at least half of the woody plants (by number) will be comprised of mountain mahogany, skunkbush, and vasey big sagebrush. A commitment to this standard must be stated in the permit. The standard was established in consultation with the Division of Wildlife Resources.

### **Findings:**

The information provided is not considered adequate to meet the minimum Revegetation requirement of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-341**, The application must include a seed mixture suitable for the mountain brush/conifer vegetation type.

**R645-301-356.231**, The application must contain a success standard for woody plant densities as described above.

## **STABILIZATION OF SURFACE AREAS**

Regulatory Reference: 30 CFR 817.95; R645-301-244.

### **Minimum Regulatory Requirements:**

All exposed surface areas shall be protected and stabilized to effectively control erosion and air pollution attendant to erosion. Rills and gullies which form in areas that have been regraded and topsoiled and which either disrupt the approved postmining land use or the reestablishment of the vegetative cover, or, cause or contribute to a violation of water quality standards for receiving streams, shall be filled, regraded, or otherwise stabilized; topsoil shall be replaced; and the areas shall be reseeded or replanted.

### **Analysis:**

A slope stability analysis conducted by URS Corporation, Salt Lake City, Utah, is provided in Attachment B. Subsoil will be compacted in 12 inch lifts. During operations, exposed slopes will be covered with erosion control matting as described in Appendix 7-K (page 3P-5). During reclamation, slopes will be roughened with pocking and erosion control matting

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will be used as described in Section 3.6.11 (page 7K-23).

**Findings:**

The information provided is adequate for the stabilization 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

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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.

## Analysis:

### Affected Area Boundary Maps

Because there are no changes to the permit area, the existing permit boundary maps are adequate.

### Bonded Area Map

The bonded area map is the same as the disturbed area map. Plate 3-2G shows the disturbed area boundaries that will exist during reclamation.

### Reclamation Backfilling and Grading Maps

The backfilling and grading maps for final reclamation are Plate 3-2G and the cross-sections in Appendix 3P. The maps and cross-sections show the pre-mining, operational and post-mining contours and slopes.

### Reclamation Facilities Maps

Plate 3-2G shows the facilities that will be left after reclamation of the WHR Tank Seam pad area and access road. The main access road to the hunting cabin will be left, along with some culverts.

### Final Surface Configuration Maps

Plate 3-2G and the cross sections in Appendix 3p show the final surface configuration for the WHR Tank Seam pad area.

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**Reclamation Surface and Subsurface Manmade Features Maps**

Plate 3-2G shows the facilities that will be left after reclamation of the WHR Tank Seam pad area and access road. The main access road to the hunting cabin will be left, along with some culverts.

**Findings:**

The Permittee has met the minimum requirements of this section.

**BONDING AND INSURANCE REQUIREMENTS**

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

Minimum Regulatory 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.

**Analysis:**

**Determination of Bond Amount**

The bond calculations appear to be adequate. The Division cannot reduce the reclamation cost estimate for removed structures until the Division conducts an inspection and determines that those structures have been removed. The Division will finalize the bond calculations after the first review.

**Findings:**

The information provided in the proposed amendment is not considered adequate to meet the requirements of this section of the regulations. Before approval, the Permittee must provide the following in accordance with:

**R645-301-830.130 and R645-301-830.140**, The Division cannot reduce the reclamation cost estimate for structures that have been removed until the work has been completed and a finding made by the Division. Therefore, the bond estimate must include 4 fans instead of 3 until the work has been completed and the Division makes a finding that the reclamation work has been completed.

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