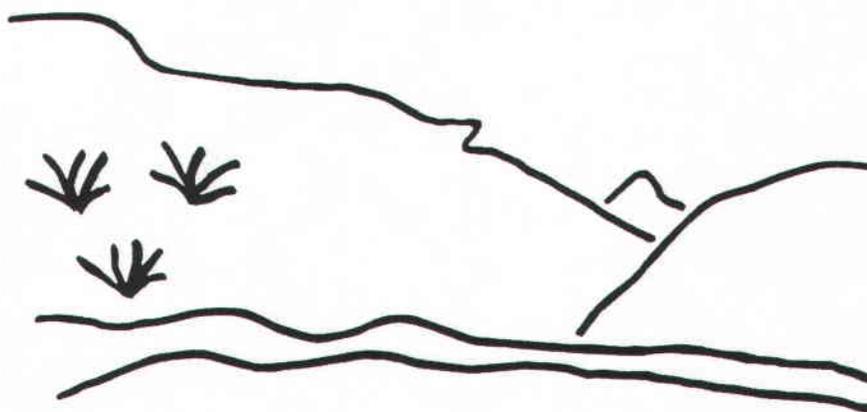


# State of Utah



## Utah Oil Gas and Mining

### Coal Regulatory Program

West Ridge Mine  
Whitmore Canyon  
C/007/041-PM01H  
Technical Analysis  
January 16, 2002

File in:

Confidential

Shelf

Expandable

Refer to Record No. 0002 Date 01172002

In C 0070041, 2002, Outgoing

For additional information

0002



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

COPY

Michael O. Leavitt  
Governor  
Kathleen Clarke  
Executive Director  
Lowell P. Braxton  
Division Director

1594 West North Temple, Suite 1210  
PO Box 145801  
Salt Lake City, Utah 84114-5801  
801-538-5340  
801-359-3940 (Fax)  
801-538-7223 (TDD)

January 17, 2002

Mike Glasson, Environmental Coordinator  
West Ridge Resources, Inc.  
P.O. Box 902  
Price, Utah 84501

Re: Whitmore Canyon Extension, West Ridge Resources, Inc., West Ridge Mine, C/007/041-PM01H, Outgoing File

Dear Mr. Glasson:

The above-referenced application 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 February 15, 2002.

If you have any questions, please call me at (801) 538-5325 or Gregg Galecki at (801) 538-5260.

Sincerely,

*Daron R. Haddock*  
Daron R. Haddock  
Permit Supervisor

sm  
Enclosure  
cc: Price Field Office  
O:\007041.WR\FINAL\DEF01H.DOC

File in: *C:\0070041\2002 Outgoing*  
Refer to:  
 Confidential  
 Shelf  
 Expandable  
*01172002*

## TABLE OF CONTENTS

---

<b>INTRODUCTION.....</b>	<b>1</b>
<b>SUMMARY OF DEFICIENCIES.....</b>	<b>3</b>
<b>GENERAL CONTENTS.....</b>	<b>5</b>
IDENTIFICATION OF INTERESTS .....	5
RIGHT OF ENTRY .....	6
LEGAL DESCRIPTION AND STATUS OF UNSUITABILITY CLAIMS.....	7
PERMIT TERM.....	8
PUBLIC NOTICE AND COMMENT.....	8
FILING FEE .....	9
COMPLETENESS.....	9
<b>ENVIRONMENTAL RESOURCE INFORMATION .....</b>	<b>11</b>
GENERAL.....	11
PERMIT AREA.....	11
HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION .....	12
CLIMATOLOGICAL RESOURCE INFORMATION .....	12
VEGETATION RESOURCE INFORMATION .....	13
FISH AND WILDLIFE RESOURCE INFORMATION .....	14
Fish and Wildlife Information .....	14
Threatened and Endangered Species .....	15
SOILS RESOURCE INFORMATION.....	17
LAND-USE RESOURCE INFORMATION.....	17
ALLUVIAL VALLEY FLOORS .....	18
Alluvial Valley Floor Determination .....	20
PRIME FARMLAND.....	20
GEOLOGIC RESOURCE INFORMATION .....	22
HYDROLOGIC RESOURCE INFORMATION .....	23
Sampling and Analysis .....	25
Baseline Information.....	25
Ground-Water Information.....	25
Surface-Water Information .....	25
Baseline Cumulative Impact Area Information .....	25
Modeling.....	25
Alternative Water Source Information.....	26
Probable Hydrologic Consequences Determination .....	26
<b>MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION .....</b>	<b>26</b>
Affected Area Boundary Maps .....	28
Archeological Site Maps.....	28
Coal Resource and Geologic Information Maps.....	28
Cultural Resource Maps.....	29
Existing Structures and Facilities Maps.....	29
Existing Surface Configuration Maps.....	29
Mine Workings Maps .....	29
Permit Area Boundary Maps .....	30
Surface and Subsurface Ownership Maps .....	30

## TABLE OF CONTENTS

Surface and Subsurface Manmade Features Maps .....	30
Subsurface Water Resource Maps .....	30
Vegetation Reference Area Maps .....	30
Contour Maps.....	30
<b>OPERATION PLAN .....</b>	<b>33</b>
<b>MINING OPERATIONS AND FACILITIES.....</b>	<b>33</b>
General.....	33
<b>EXISTING STRUCTURES: .....</b>	<b>33</b>
<b>PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES .....</b>	<b>34</b>
<b>RELOCATION OR USE OF PUBLIC ROADS .....</b>	<b>35</b>
<b>AIR POLLUTION CONTROL PLAN .....</b>	<b>35</b>
<b>COAL RECOVERY .....</b>	<b>35</b>
<b>SUBSIDENCE CONTROL PLAN.....</b>	<b>36</b>
Renewable Resources Survey.....	37
Subsidence Control Plan.....	38
Performance Standards for Subsidence Control .....	38
Notification .....	38
<b>SLIDES AND OTHER DAMAGE .....</b>	<b>39</b>
<b>FISH AND WILDLIFE INFORMATION .....</b>	<b>39</b>
Protection and Enhancement Plan .....	40
Endangered and Threatened Species .....	41
Bald and Golden Eagles.....	41
Wetlands and Habitats of Unusually High Value for Fish and Wildlife .....	41
<b>TOPSOIL AND SUBSOIL.....</b>	<b>42</b>
<b>VEGETATION .....</b>	<b>43</b>
<b>ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES .....</b>	<b>44</b>
<b>SPOIL AND WASTE MATERIALS .....</b>	<b>46</b>
<b>HYDROLOGIC INFORMATION .....</b>	<b>51</b>
General.....	58
Ground-Water Monitoring.....	58
Surface-Water Monitoring.....	59
Acid- and Toxic-Forming Materials .....	59
Gravity Discharges.....	59
Water Quality Standards and Effluent Limitations.....	59
Stream Buffer Zones.....	59
<b>SUPPORT FACILITIES AND UTILITY INSTALLATIONS.....</b>	<b>60</b>
<b>SIGNS AND MARKERS .....</b>	<b>61</b>
<b>USE OF EXPLOSIVES.....</b>	<b>61</b>
<b>MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS.....</b>	<b>63</b>
Affected Area Maps.....	64
Mining Facilities Maps .....	64
Mine Workings Maps .....	64
Monitoring and Sample Location Maps .....	65
<b>RECLAMATION PLAN.....</b>	<b>67</b>
<b>GENERAL REQUIREMENTS .....</b>	<b>67</b>

TABLE OF CONTENTS

---

PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES...	67
APPROXIMATE ORIGINAL CONTOUR RESTORATION.....	68
BACKFILLING AND GRADING.....	69
MINE OPENINGS.....	71
TOPSOIL AND SUBSOIL.....	72
Redistribution.....	72
ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES .....	73
HYDROLOGIC INFORMATION .....	73
General.....	74
Ground-Water Monitoring .....	74
Surface-Water Monitoring .....	74
Stream Buffer Zones .....	74
REVEGETATION.....	75
STABILIZATION OF SURFACE AREAS .....	77
CESSATION OF OPERATIONS .....	77
MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS .....	78
BONDING AND INSURANCE REQUIREMENTS.....	80
Determination of Bond Amount .....	81
<b>REQUIREMENTS FOR PERMITS FOR SPECIAL CATEGORIES OF MINING .....</b>	<b>83</b>
EXPERIMENTAL PRACTICES MINING .....	83
PRIME FARMLAND .....	84
OPERATIONS IN ALLUVIAL VALLEY FLOORS.....	87
Essential Hydrologic Functions .....	88
<b>CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT.....</b>	<b>89</b>
<b>RULES INDEX .....</b>	<b>91</b>

**INTRODUCTION**

---

**TECHNICAL ANALYSIS**

**INTRODUCTION**

On October 24, 2001, the Division received a proposal to add Federal Lease UTU-78562 to the permit area for the West Ridge Mine. The proposal was determined to be Administratively Complete on December 12, 2001. Upon the Administratively Complete determination a technical review commenced. Additional information was received December 10 and December 24, 2001, and January 4, 2002. The proposal is considered an extension to an existing permit and being processed under the guidelines of a new permit (per State Reg. R645-303.222). The following is a technical review of the entire Mine Reclamation Plan (MRP) as it pertains to the current proposed modifications. There are several deficiencies that need to be addressed prior to approval.

Page 2  
C/007/041-PM01H  
January 16, 2002

**INTRODUCTION**

---

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**

- R645-300-121.200**, clarify statement in Section 525.200, Subsidence Control about the existence of a 20 acre-feet or greater capacity reservoir within the permit boundary. The Grassy Trail reservoir stores more than 20 acre-feet. .... 39
- R645-300-133.100**, Make the requisite typographic changes, as outlined above. .... 10
- R645-300-140**, revise Map 5-7, Subsidence Map, to show that subsidence will only occur within the permit area. .... 39
- R645-300-521.100**, state the results of the pre-subsidence survey for the Whitmore lease. If the Whitmore lease pre-subsidence survey was included in the original subsidence survey, it needs to be stated specifically in the MRP. .... 38
- R645-300-521.200**, The Permittee must include mention of the Grassy Trail Reservoir being located with the permit. The Division recommends that the information be located in Section 521.120. .... 31
- R645-300-525.450 and R645-301-535.311**, state what criteria will be used to determine what measures will be taken to prevent subsidence damage from the Grassy Trail reservoir. .... 39
- R645-301-113**, The applicant needs to submit updated violation information. .... 5
- R645-301-114**, One legal description in Table I-1 needs to be corrected. In addition, the application needs to include a description of the portion of the disturbed area extending south from the NE¼ NE¼ of Section 15, Township 14 South, Range 13 East and for the portion in Section 21 of this same township. .... 7

**SUMMARY OF DEFICIENCIES**

---

**R645-301-114**, The applicant needs to provide right of entry information for the portion of the disturbed area, extending south from the NE¼ NE¼ of Section 15, Township 14 South, Range 13 East and for the portion in Section 21 of this same township..... 6

**R645-301-321**, The applicant needs to include a map of the vegetation communities in the proposed addition to the permit area..... 14

**R645-301-322**, The applicant needs to clarify whether the proposed addition was surveyed for raptor nests with no nests found or if the area was not surveyed. Section 333 of the text of the mining and reclamation plan needs to be updated to discuss more recent raptor surveys..... 16

**R645-301-322**, The application needs to contain a discussion of use of the area by bats and of potential impacts on bat populations..... 16

**R645-301-322**, The application needs to include a description of the riparian habitat in and near Grassy Trail Creek. Also, the statement in Sections 322.220 and 333 of the current mining and reclamation plan that there are no streams, wetlands, or riparian areas in the permit area and that all the streams are ephemeral in nature needs to be modified..... 14

**R645-301-322**, The Division does not have enough information in the application to determine whether there is potential that the western yellow-billed cuckoo could occur in the proposed addition to the permit area. The applicant needs to supply this information..... 17

**R645-301-333**, The application needs to contain information indicating whether the proposal will increase water consumption by the mine..... 42

**R645-301-624**, Illustrate the ‘heterogeneous lithology’ in cross-section using exploration drill logs in Whitmore Canyon (i.e. holes N-17, B-8, B-7, H-16, H-31). ..... 30

**R645-301-731.200**, correctly identify the parameters being monitored at Well DH86-2, and provide calculated flow measurements at sites where crest gauges are installed. .... 60

**R645-301-7311.600**, address why mining can be conducted within the 100-foot stream buffer zone; citing minimal anticipated surface subsidence, possible temporary affects to water quality, etc..... 60

**R645-302-320**, provide 1) a regional geologic map identifying, at a minimum, the geology through the permit area to the City of Dragerton, and 2) a map or discussion of the land uses of the valley floor. .... 20

## GENERAL CONTENTS

### IDENTIFICATION OF INTERESTS

Regulatory Reference: 30 CFR 773.22; 30 CFR 778.13; R645-301-112

**Minimum Regulatory Reference:**

The operator of the coal mine and all owners and controllers of the operation must be identified by name and address. The Division with the Applicant/Violator System must crosscheck the information provided and other sources such as DOGM inspection and enforcement records, State corporation commission or tax records. If the Division identifies any errors in the ownership or control information, the applicant must be contacted to resolve the matter immediately. If the Division discovers that none of the persons identified in the application has had any previous mining experience, the applicant will be contacted to verify this fact.

The Applicant/Violator System will be updated with new information received by the Division.

**Analysis:**

The applicant has updated address, telephone number, and land ownership information. The Division assumes other ownership and control information has not changed. As a safeguard to this assumption, regulation R645-301-112.900 requires that, after an applicant is notified that its application is approved but before the permit is issued, the applicant must update, correct, or indicate that no change has occurred in this information. In addition, the Division will need to check the ownership and control information in the applicant violator system (AVS).

The names and addresses of surface and subsurface owners are in Sections 112.500 and 112.600, and Maps 5-1 and 5-2 show land ownership information. There is one inconsistency between Map the surface ownership map, Map 5-2 and the text. Map 5-2 indicates the Jay Pagano Estate owns surface land both within and contiguous to the permit area extension area, but the Jay Pagano Estate is not included in the text as an owner of surface lands contiguous to the permit area.

**Findings:**

Information provided in the proposal is not adequate to meet the requirements of the General Contents – Violation Information section of the regulations. Prior to final approval, the applicant must supply the following in accordance with:

**R645-301-113**, The applicant needs to submit updated violation information.

## RIGHT OF ENTRY

Regulatory Reference: 30 CFR 778.15; R645-301-114

### Minimum Regulatory Reference:

Documents giving legal right to enter the permit area must be detailed in the application by date, type of document, land description and rights claimed. Any pending litigation over these legal rights must be disclosed.

The written consent of the landowner for the extraction of the coal by surface mining methods must also be included when the surface and mineral owners are different. Also a copy of the conveyance that grants the legal authority to extract the coal by surface methods will be included.

The Division does not have the authority to adjudicate property rights disputes.

### Analysis:

The applicant bases its legal right to enter and begin mining and reclamation operations on language in federal coal leases SL-068754-U-01215, lease modification SL-068754, and the newly-acquired lease UTU-78562. In addition, the applicant has a lease with the School and Institutional Trust Lands Administration for a potential topsoil borrow area, so the total revised permit area would be 4306.61 acres. Legal descriptions of these leases and approval dates are shown in Table I-1. As discussed in the section of this analysis dealing with legal descriptions, there are a few problems with Table I-1 that need to be corrected.

Maps showing the permit area, including Map 5-2, show a small part of the main disturbed area extending south from the NE $\frac{1}{4}$  NE $\frac{1}{4}$  of Section 15, Township 14 South, Range 13 East. The pumphouse is in a small, disturbed area in the NE $\frac{1}{4}$  of Section 21 of this same township. Neither the current mining and reclamation plan nor the current application contains right of entry information for these areas. In addition, it does not appear the acreage for these areas is included in any of the acreage figures for the permit area.

### Findings:

Information provided in the proposal is not adequate to meet the requirements of the General Contents – Right of Entry section of the regulations. Prior to final approval, the applicant must supply the following in accordance with:

**R645-301-114**, The applicant needs to provide right of entry information for the portion of the disturbed area, extending south from the NE $\frac{1}{4}$  NE $\frac{1}{4}$  of Section 15, Township 14 South, Range 13 East and for the portion in Section 21 of this same township.

GENERAL CONTENTS

## LEGAL DESCRIPTION AND STATUS OF UNSUITABILITY CLAIMS

Regulatory Reference: 30 CFR 778.16; 30 CFR 779.12(a); 30 CFR 779.24(a)(b)(c); R645-300-121.120; R645-301-112.800; R645-300-141; R645-301-115.

**Minimum Regulatory Reference:**

The application will describe and identify the lands (on a map) subject to coal mining over the life of the operation, including the size, sequence, and timing of the mining anticipated and permit boundaries. Coal mining and reclamation operations may only occur on the lands identified on the maps submitted and that are subject to the performance bond.

A public notice advertisement will contain a map or description of the precise location and boundaries of the proposed permit area. So that local residents can identify the area, the map must have a north arrow and may include local landmarks.

**Analysis:**

Section R645-301-114 of the application says West Ridge Resources holds 4297.01 acres of federal coal. Of this, 2650.67 acres is leased under lease SL-068754 and 1646.34 acres is leased under UTU-78562. The Division assumes lease SL-068754 is the same as SL-068754-U-01215.

There is one correction that needs to be made in Table I-1. For lease UTU-78562, Township 13 South, Range 13 East, Section 35, the application reads SE $\frac{1}{4}$ , S $\frac{1}{2}$  W $\frac{1}{4}$ . It should be SE $\frac{1}{4}$ , S $\frac{1}{2}$  SW $\frac{1}{4}$ .

As discussed in the right of entry section of this analysis, neither the current plan nor the application contains a legal description of the portion of the disturbed area extending south from the NE $\frac{1}{4}$  NE $\frac{1}{4}$  of Section 15, Township 14 South, Range 13 East or for the portion in Section 21 of this same township.

There are no changes to the section on the status of unsuitability claims, and the Division is unaware of any petition to designate the area as unsuitable for mining.

**Findings:**

Information provided in the proposal is not adequate to meet the requirements of the General Contents – Legal Description and Status of Unsuitability Claims section of the regulations. Prior to final approval, the applicant must supply the following in accordance with:

**R645-301-114**, One legal description in Table I-1 needs to be corrected. In addition, the application needs to include a description of the portion of the disturbed area extending south from the NE $\frac{1}{4}$  NE $\frac{1}{4}$  of Section 15, Township 14 South, Range 13 East and for the portion in Section 21 of this same township.

## PERMIT TERM

Regulatory References: 30 CFR 778.17; R645-301-116.

### Minimum Regulatory Reference:

The application will describe and identify the lands (on a map) subject to coal mining over the life of the operation, including the size, sequence, and timing of the mining anticipated and permit boundaries. Coal mining and reclamation operations may only occur on the lands identified on the maps submitted and that are subject to the performance bond.

A public notice advertisement will contain a map or description of the precise location and boundaries of the proposed permit area. So that local residents can identify the area, the map must have a north arrow and may include local landmarks.

### Analysis:

The applicant has not requested a change in the permit term. The current permit will expire April 1, 2004.

### Findings:

Information provided in the application is adequate to meet the requirements of the General Contents – Permit Term section of the regulations.

## PUBLIC NOTICE AND COMMENT

Regulatory References: 30 CFR 778.21; 30 CFR 773.13; R645-300-120; R645-301-117.200.

### Minimum Regulatory Reference

After the application has been determined "administratively complete," an advertisement must be placed in a local newspaper of general circulation in the locality of the proposed surface coal mining and reclamation operation at least once a week for four consecutive weeks. A copy of the advertisement as it will appear in the newspaper will be submitted to the regulatory authority.

At a minimum, the following will be included in the ad:

- (1) The name and business address of the applicant.
- (2) A map or description.
- (3) The location where a copy of the application is available for public inspection.
- (4) The name and address of the Division where written comments, objections, or requests for informal conferences on the application may be submitted.
- (5) If an applicant seeks a permit to mine within 100 feet of the outside right-of-way of a public road or to relocate or close a public road, except where public notice and hearing have previously been provided for this particular part of the road; a concise statement describing the public road, the particular part to be relocated or closed, and the approximate timing and duration of the relocation or closing.
- (6) If the application includes a request for an experimental practice, a statement indicating that an experimental practice is requested and identifying the regulatory provisions for which a variance is requested.

The Division will notify in writing local governmental agencies and all Federal or State governmental agencies involved in or with an interest in the permit process.

Documentation of the public notice and comment period required for the Permit should be incorporated as part of the Permit.

---

**GENERAL CONTENTS**

---

**Analysis:**

The applicant will need to submit proof of publication after this application has been advertised. Also, the Division will need to evaluate any comments received from the public

**Findings:**

At this time, the Division considers this section of the application to be complete; however, the applicant will need to submit proof of publication for inclusion into the application. Also, the Division will need to evaluate any comments from the public.

**FILING FEE**

Regulatory Reference: 30 CFR 777.17; R645-301-118.

**Analysis:**

The filing fee is not required for anything other than a new permit.

**Findings:**

Information provided in the application is adequate to meet the requirements of the General Contents – Filing Fee section of the regulations.

**COMPLETENESS**

Regulatory Reference: 30 CFR 777.15; R645-301-150.

**Analysis:**

The following examples are areas where lines or sentences were omitted during transfer from the current proposal and insertion into the approved MRP, or typographic errors:

- Missing a line from bottom of pg. 7-17 to top of 7-18.
- Missing first two sentences of 724.412 (pg. 7-8 to 7-9)
- Pg. 7-19, 731.200, 3<sup>rd</sup> line, Tables 7-1 through 7-6
- Chapter 6, Pg. 6-1, Regional Geologic Description, states dip is N to NW.

**Findings:**

Information provided in the proposal is not adequate to meet the requirements of the General Contents – Completeness section of the regulations. Prior to final approval, the applicant must supply the following in accordance with:

**R645-300-133.100**, Make the requisite typographic changes, as outlined above.

## ENVIRONMENTAL RESOURCE INFORMATION

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

### GENERAL

Regulatory Reference: 30 CFR 783.12; R645-301-411, -301-521, -301-721.

Minimum Regulatory Requirements:

Include a description of the existing, pre-mining environmental resources within the proposed permit area and adjacent areas that may be affected or impacted by the proposed underground mining activities.

#### Analysis:

Due to the associated permit boundary change with the addition of Federal Lease UTU-78562, the majority of maps were modified to the lease as the new/proposed permit boundary. Appendix 5-3, the Resource Recovery and Protection Plan (R2P2), provides the respective maps (Plates 1 – 12) and illustrate the modifications.

#### Findings:

Information provided in the application is adequate to meet the requirements of the Environmental Resource Information - General Information section of the regulations.

### 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 will add lease UTU-78562 containing 1646.34 acres, also known as the Whitmore lease. A legal description of the lease is given in Table I-1.

#### Findings:

The Permittee as met the minimum requirements of the General – Permit Area section of the regulations.

## 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 analyses.

### Analysis:

The current mining and reclamation plan contains summary information from several archaeological surveys conducted in the area. Two cultural resource sites were found in the proposed addition to the permit area, but neither of these was considered significant. There is one site just outside the proposed addition that was not evaluated for historical significance, but the consultant conducting the survey recommended that it be considered eligible until an evaluation could be done.

The application is required to contain maps as described under R645-301-411.141 and a supporting narrative which describe the nature of cultural and historic resources listed or eligible for listing in the National Register of Historic Places and known archaeological sites within the permit and adjacent areas. The description will be based on all available information, including, but not limited to, information from the State Historic Preservation Officer and from local archeological, historic, and cultural preservation agencies. The applicant has researched available cultural resource information and included it in the application as required.

### Findings:

Information provided in the application is adequate to meet the requirements of the Historic and Archaeological Resource Information section of the regulations.

## CLIMATOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.18; R645-301-724.

### Minimum Regulatory Requirements:

Provide a statement of the climatological factors that are representative of the proposed permit area, including: the average seasonal precipitation; the average direction and velocity of prevailing winds; and, seasonal temperature ranges. Additional data may be requested as deemed necessary to ensure compliance other regulatory requirements.

**ENVIRONMENTAL RESOURCE INFORMATION**

---

**Analysis:**

No changes or modifications were necessary to the currently approved MRP since the same climatological parameters exist.

**Findings:**

Information provided in the application is adequate to meet the requirements of the Climate 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:**

For an increase in the permit area with no surface disturbance, the Division usually requires only general information about the vegetation communities in the new area. A map showing the vegetation communities in this area is generally sufficient.

The applicant has updated Map 3-1, General Vegetation Communities, to show the proposed addition to the permit area, but this map does not show the vegetation communities in this area. This map shows one of the three reference areas, and although another map shows all three of the reference areas, the Division prefers that Map 3-1 either show all of the reference areas or none.

The application includes a proposal to undermine portions of Grassy Trail Creek, but it needs to include a description of the riparian habitat in this area. The Division of Wildlife Resources considers any riparian vegetation in this area to be very important to wildlife. The current mining and reclamation plan includes a commitment to monitor the effects of underground mining on vegetation through infrared photography. The Division suggests using baseline color infrared and any other available photographs combined with ground-truthing to describe the riparian vegetation. The Division does not necessarily need to have quantitative data; rather, a good qualitative description combined with the aerial photos should be adequate.

**Findings:**

Information in the application is not adequate to meet the Vegetation Resource Information requirements of the regulations. Prior to final approval, the applicant must supply the following in accordance with:

**R645-301-321**, The applicant needs to include a map of the vegetation communities in the proposed addition to the permit area.

**R645-301-322**, The application needs to include a description of the riparian habitat in and near Grassy Trail Creek. Also, the statement in Sections 322.220 and 333 of the current mining and reclamation plan that there are no streams, wetlands, or riparian areas in the permit area and that all the streams are ephemeral in nature needs to be modified.

**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 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:**

**Fish and Wildlife Information**

The Division has consulted with the Division of Wildlife Resources about fish and wildlife information requirements, and their comments are addressed below.

Map 3-4A shows raptor nesting information, and it has been revised to show the proposed addition to the permit area. This map does not show any raptor nests in the proposed

**ENVIRONMENTAL RESOURCE INFORMATION**

---

addition. The applicant needs to clarify whether the proposed addition was surveyed with no nests found or if it was not surveyed. This is not clear from the application. In addition, Section 333 of the current mining and reclamation plan contains a discussion about raptor surveys that needs to be updated.

According to revised Maps 3-4B, 3-4C, and 3-4D, the entire proposed addition to the permit area contains critical deer summer range and high value elk year long range, but it does not contain habitat for pronghorns.

Based on information from the Division of Wildlife Resources, the Division understands the Right Fork of Grassy Trail Creek, the fork the applicant plans to undermine, could not support a fishery; therefore, no information about the aquatic habitat in this area is required.

Section 333 of the current mining and reclamation plan contains a statement that all drainages within the proposed permit area are ephemeral in nature. Also, Section 322.220 contains a statement that no streams, wetlands, or riparian areas are located in the permit area. These statements need to be modified. The current application says Grassy Trail Creek is intermittent, and information from the Division of Wildlife Resources indicates there are areas of riparian vegetation along the stream.

The application needs to contain a discussion of use of the area by bats and of potential impacts on bat populations.

The Division of Wildlife Resources considers the springs and other sources of free water in the area to be very important, and the applicant has been monitoring springs for baseline data and has committed to continue monitoring them. The Division considers this to be adequate.

**Threatened and Endangered Species**

On January 2, 2002, the Division received a letter from the Fish and Wildlife Service listing ten species that may occur in the area of influence of the proposed project. Most of these species were discussed in the original technical analysis for the West Ridge Mine with determinations that the area either contains no habitat or that the mine will have no effects. Those species that should not be affected and that were addressed in the original technical analysis are Graham beardtongue, bald eagle, and the black-footed ferret.

According to the *Utah Endangered, Threatened and Sensitive Plant Field Guide*, the Uinta Basin hookless cactus, *Sclerocactus glaucus*, grows in gravelly hills and terraces on Quaternary and Tertiary alluvium soils in cold desert shrub communities between 4700 and 6000 feet. The lowest elevation in the proposed addition to the permit area is about 7500 feet, and the soils are derived from Cretaceous deposits. The proposed addition to the permit area does not contain habitat for this species.

The application includes a letter from Chris Colt of the Division of Wildlife Resources saying he and another wildlife biologist surveyed most of the proposed addition to the permit area looking for potential Mexican spotted owl habitat. They do not feel the east-facing slope of Whitmore Canyon contains suitable habitat for Mexican spotted owls or that mining in these areas will adversely affect this species. The letter specifically says the Wildlife Resources employees do not feel mining in Section 1 and 12, Township 14 South, Range 13 East, and Section 35, Township 13 South, Range 13 East, will affect Mexican spotted owls. The areas included in the habitat survey and the areas in the sections mentioned covers the entire proposed addition to the permit area; therefore, the Division concludes that there will be no effects on Mexican spotted owls.

For nesting, the western yellow-billed cuckoo requires dense lowland riparian characterized by a dense sub-canopy or shrub layer (regenerating canopy trees, willows, or other riparian shrubs) within 333 feet of water. Over story in these habitats may be either large, gallery-forming trees (33-90 feet) or developing trees (10-27 feet), usually cottonwoods. Nesting habitats are found at low to mid-elevations (2500-6000 feet) in Utah. Cuckoos may require large tracts (100-200 acres) of contiguous riparian nesting habitat; however, cuckoos are not strongly territorial and home ranges may overlap during the breeding season.

The applicant needs to supply information about the type of habitat along Grassy Trail Creek and include an analysis discussing whether this area could provide potential habitat for this species.

The Division previously determined no mitigation was necessary for the mine's potential effects on the four threatened and endangered fish species of the upper Colorado River basin. Before making this determination for the current proposal, the Division needs additional information about water use. This is discussed in the "Fish and Wildlife Information" section of the Operation Plan portion of this review.

**Findings:**

Information provided in the proposal is not adequate to meet the requirements of the Fish and Wildlife Resource Information section of the regulations. Prior to final approval, the applicant must supply the following in accordance with:

**R645-301-322**, The applicant needs to clarify whether the proposed addition was surveyed for raptor nests with no nests found or if the area was not surveyed. Section 333 of the text of the mining and reclamation plan needs to be updated to discuss more recent raptor surveys.

**R645-301-322**, The application needs to contain a discussion of use of the area by bats and of potential impacts on bat populations.

**ENVIRONMENTAL RESOURCE INFORMATION**

**R645-301-322**, The Division does not have enough information in the application to determine whether there is potential that the western yellow-billed cuckoo could occur in the proposed addition to the permit area. The applicant needs to supply this information.

**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:**

No additional surface disturbance is associated with the current proposal of adding Federal Lease UTU-78562 to the permit area. No modification to the current MRP is required.

**Findings:**

Information in the application is adequate to meet the Soils Resource Information requirements of the regulations.

**LAND-USE RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 783.22; R645-301-411.

**Minimum Regulatory Requirements:**

Provide a statement of the condition; capability, and productivity of the land that will be affected by surface operations and facilities within the proposed permit area.

Provide a map and supporting narrative of the uses of the land existing at the time of the filing of the application. If the premining use of the land was changed within 5 years before the anticipated date of beginning the proposed operations, the historic use of the land shall also be described.

The narrative of land capability and productivity must include the capability of the land before any mining to support a

**ENVIRONMENTAL RESOURCE INFORMATION**

---

variety of uses, giving consideration to soil and foundation characteristics, topography, vegetative cover, and the hydrology of the area proposed to be affected by surface operations or facilities.

Describe the productivity of the area proposed to be affected by surface operations and facilities before mining, expressed as average yield of food, fiber, forage, or wood products from such lands obtained under high levels of management. The productivity shall be determined by yield data or estimates for similar sites based on current data from the U.S. Department of Agriculture, State agricultural universities, or appropriate State natural resources or agricultural agencies.

The application must state whether the proposed permit area has been previously mined. If so, provide the following information, if available: the type of mining method used; the coal seams or other mineral strata mined; the extent of coal or other minerals removed; the approximate dates of past mining; and, the uses of the land preceding mining.

The application shall provide a description of the existing land uses and land-use classifications under local law, if any, of the proposed permit and adjacent areas.

**Analysis:**

The application includes no changes to the text of the land use resource information section of the plan due to no increase in the size of the surface facilities. The Land-use resource information specifically addresses the land that will be affected by surface operations and facilities. These land uses are grazing and wildlife habitat. Map 4-1 has been revised to show land uses and water rights in the proposed addition to the permit area. The surface of some of the new area is within a grazing allotment, but most of it is either private land or is not allotted. The current mining and reclamation plan indicates the permit area contains no land within the Wild and Scenic Rivers System, the National System of Trails, or within 100 feet of a cemetery.

**Findings**

Information in the application is adequate to meet the Land Use Resource Information requirements of the regulations.

**ALLUVIAL VALLEY FLOORS**

Regulatory Reference: 30 CFR 785.19; 30 CFR 822; R645-302-320.

**Minimum Regulatory Requirements:**

This section applies to surface coal mining and reclamation operations on areas or adjacent to areas including alluvial valley floors in the arid and semiarid areas west of the 100th meridian.

**Alluvial valley floor determination**

Permit applicants who propose to conduct surface coal mining and reclamation operations within a valley holding a stream or in a location where the permit area or adjacent area includes any stream, in the arid and semiarid regions of the United States, as an initial step in the permit process, may request the Division to make an alluvial valley floor determination with respect to that valley floor. The applicant shall demonstrate and the Division shall determine, based on either available data or field studies submitted by the applicant, or a combination of available data and field studies, the presence or absence of an alluvial valley floor. Studies shall include sufficiently detailed geologic, hydrologic, land use, soils, and vegetation data and analysis to demonstrate the probable existence of an alluvial valley floor in the area. The Division may require additional data collection and analysis or other supporting documents, maps, and illustrations in order to make the determination.

The Division shall make a written determination as to the extent of any alluvial valley floors within the area. The Division shall determine that an alluvial valley floor exists if it finds that unconsolidated streamlaid deposits holding streams are present; and

**ENVIRONMENTAL RESOURCE INFORMATION**

there is sufficient water available to support agricultural activities as evidenced by the existence of current flood irrigation in the area in question; the capability of an area to be flood irrigated, based on evaluations of streamflow, water quality, soils, and topography; or, subirrigation of the lands in question derived from the ground-water system of the valley floor.

If the Division determines in writing that an alluvial valley does not exist pursuant to the requirements of this section, no further consideration of this section is required.

**Applicability of statutory exclusions**

If an alluvial valley floor is identified and the proposed surface coal mining operation may affect this alluvial valley floor or waters that supply the alluvial valley floor, the applicant may request the Division, as a preliminary step in the permit application process, to separately determine the applicability of the statutory exclusions set forth in this section. The Division may make such a determination based on the available data, may require additional data collection and analysis in order to make the determination, or may require the applicant to submit a complete permit application and not make the determination until after the complete application is evaluated.

An applicant need not submit the information required and the Division is not required to make the findings required of this section when the Division determines that one of the following circumstances, heretofore called statutory exclusions, exist:

1. The premining land use is undeveloped rangeland that is not significant to farming;
2. Any farming on the alluvial valley floor that would be affected by the surface coal mining operation is of such small acreage as to be of negligible impact on the farm's agricultural production. Negligible impact of the proposed operation on farming will be based on the relative importance of the affected farmland areas of the alluvial valley floor area to the farm's total agricultural production over the life of the mine; or,
3. The circumstances set forth in Section 822.12(b)(3) or (4) of this Chapter exist.

For the purpose of this section, a farm is one or more land units on which farming is conducted. A farm is generally considered to be the combination of land units with acreage and boundaries in existence prior to August 3, 1977, or if established after August 3, 1977, with those boundaries based on enhancement of the farm's agricultural productivity and not related to surface coal operations.

(c) Summary denial. If the Division determines that the statutory exclusions are not applicable and that any of the required findings of Paragraph (e)(2) of this section cannot be made, the Division may, at the request of the applicant:

(1) Determine that mining is precluded on the proposed permit area and deny the permit without the applicant filing any additional information required by this section; or

(2) Prohibit surface coal mining and reclamation operations in all or parts of the area to be affected by mining.

(d) Application contents for operations affecting designated alluvial valley floors. (1) If land within the permit area or adjacent area is identified as an alluvial valley floor and the proposed surface coal mining operation may affect an alluvial valley floor or waters supplied to an alluvial valley floor, the applicant shall submit a complete application for the proposed surface coal mining and reclamation operations to be used by the Division together with other relevant information as a basis for approval or denial of the permit. If an exclusion of Paragraph (b)(2) of this section applies, then the applicant need not submit the information required in Paragraphs (d)(2)(ii) and (iii) of this section.

(2) The complete application shall include detailed surveys and baseline data required by the Division for a determination of--

(i) The essential hydrologic functions of the alluvial valley floor which might be affected by the mining and reclamation process. The information required by this subparagraph shall evaluate those factors which contribute to the collecting, storing, regulating and making the natural flow of water available for agricultural activities on the alluvial valley floor and shall include, but are not limited to:

(A) Factors contributing to the function of collecting water, such as amount, rate and frequency of rainfall and runoff, surface roughness, slope and vegetative cover, infiltration, and evapotranspiration, relief, slope and density of drainage channels;

(B) Factors contributing to the function of storing water, such as permeability, infiltration, porosity, depth and direction of ground water flow, and water holding capacity;

(C) Factors contributing to the function of regulating the flow of surface and ground water, such as the longitudinal profile and slope of the valley and channels, the sinuosity and cross-sections of the channels, interchange of water between streams and associated alluvial and bedrock aquifers, and rates and amount of water supplied by these aquifers; and

(D) Factors contributing to water availability, such as the presence of flood plains and terraces suitable for agricultural activities.

(ii) Whether the operation will avoid during mining and reclamation the interruption, discontinuance, or preclusion of farming on the alluvial valley floor;

(iii) Whether the operation will cause material damage to the quantity or quality of surface or ground waters supplied to the alluvial valley floor;

(iv) Whether the reclamation plan is in compliance with requirements of the Act, this Chapter, and regulatory program; and

(v) Whether the proposed monitoring system will provide sufficient information to measure compliance with Part 822 of

this Chapter during and after mining and reclamation operations.

(e) Findings. (1) The findings of Paragraphs (e)(2)(i) and (ii) of this section are not required with regard to alluvial valley floors to which are applicable any of the exclusions of Paragraph (b)(2) of this section.

(2) No permit or permit revision application for surface coal mining and reclamation operations on lands located west of the 100th meridian west longitude shall be approved by the Division unless the application demonstrates and the Division finds in writing, on the basis of information set forth in the application, that

(i) The proposed operations will not interrupt, discontinue, or preclude farming on an alluvial valley floor;

(ii) The proposed operations will not materially damage the quantity or quality of water in surface and underground water systems that supply alluvial valley floors; and

(iii) The proposed operations will comply with Part 822 of this Chapter and the other applicable requirements of the Act and the regulatory program.

### **Analysis:**

#### **Alluvial Valley Floor Determination**

Addition information is requested to supplement the information available in Chapter 2 of the approved MRP. To make the Alluvial Valley Floor determination for lands affected by the proposed mining in Whitmore Canyon and the Grassy Trail Creek drainage, one to two maps are requested: 1) a regional geologic map identifying, at a minimum, the geology through the permit area to the City of Dragerton, and 2) a map or discussion of the land uses of the valley floor, specifically Grassy Trail Creek and its uses in the Dragerton/East Carbon area.

### **Findings:**

Information provided in the proposal is not adequate to meet the requirements of the Environmental Resource Information – Alluvial Valley Floors section of the regulations. Prior to final approval, the applicant must supply the following in accordance with:

**R645-302-320**, provide 1) a regional geologic map identifying, at a minimum, the geology through the permit area to the City of Dragerton, and 2) a map or discussion of the land uses of the valley floor.

## **PRIME FARMLAND**

Regulatory Reference: 30 CFR 785.16, 823; R645-301-221, -302-270.

### **Minimum Regulatory Requirements:**

The U.S. Soil Conservation Service within each State shall establish specifications for prime farmland soil removal, storage, replacement, and reconstruction. The Division shall use the soil-reconstruction specifications to carry out its responsibilities under this section.

The requirements of this part shall not apply to:

Note: This section is suspended "insofar as it excludes from the requirements of Prime Farmlands those coal preparation plants, support facilities, and roads that are surface mining activities".

- (1) Coal preparation plants, support facilities, and roads of surface and underground mines that are actively used over extended periods of time and where such uses affect a minimal amount of land.

**ENVIRONMENTAL RESOURCE INFORMATION**

- (2) Disposal areas containing coal mine waste resulting from underground mines that is not technologically and economically feasible to store in underground mines or on non-prime farmland. The operator shall minimize the area of prime farmland used for such purposes.
- (3) Prime farmland that has been excluded in accordance with any valid existing rights as indicated below.

This section applies to any person who conducts or intends to conduct surface coal mining and reclamation operations on prime farmland historically used for cropland. This section does not apply to:

- (1) Lands on which surface coal mining and reclamation operations are conducted pursuant to any permit issued prior to August 3, 1977; or
- (2) Lands on which surface coal mining and reclamation operations are conducted pursuant to any renewal or revision of a permit issued prior to August 3, 1977; or
- (3) Lands included in any existing surface coal mining operations for which a permit was issued for all or any part thereof prior to August 3, 1977, provided that: such lands are part of a single continuous surface coal mining operation begun under a permit issued before August 3, 1977; and the permittee had a legal right to mine the lands prior to August 3, 1977, through ownership, contract, or lease but not including an option to buy, lease, or contract; and the lands contain part of a continuous recoverable coal seam that was being mined in a single continuous mining pit (or multiple pits if the lands are proven to be part of a single continuous surface coal mining operation) begun under a permit issued prior to August 3, 1977.

For purposes of this section, renewal of a permit means a decision by the Division to extend the time by which the permittee may complete mining within the boundaries of the original permit, and revision of the permit means a decision by the Division to allow changes in the method of mining operations within the original permit area, or the decision of the Division to allow incidental boundary changes to the original permit. A pit shall be deemed to be a single continuous mining pit even if portions of the pit are crossed by a road, pipeline, railroad, or power line or similar crossing. A single continuous surface coal mining operation is presumed to consist only of a single continuous mining pit under a permit issued prior to August 3, 1977, but may include non-contiguous parcels if the operator can prove by clear and convincing evidence that, prior to August 3, 1977, the non-contiguous parcels were part of a single permitted operation. For the purposes of this paragraph, clear and convincing evidence includes, but is not limited to, contracts, leases, deeds or other properly executed legal documents (not including options) that specifically treat physically separate parcels as one surface coal mining operation.

All permit applications, whether or not prime farmland is present, shall include the results of a reconnaissance inspection of the proposed permit area to indicate whether prime farmland exists. The Division in consultation with the U.S. Soil Conservation Service shall determine the nature and extent of the required reconnaissance inspection.

If the reconnaissance inspection establishes that no land within the proposed permit area is prime farmland historically used for cropland, the applicant shall submit a statement that no prime farmland is present. The statement shall identify the basis upon which such a conclusion was reached.

If the reconnaissance inspection indicates that land within the proposed permit area may be prime farmland historically used for croplands, the applicant shall determine if a soil survey exists for those lands and whether soil mapping units in the permit area have been designated as prime farmland. If no soil survey exists, the applicant shall have a soil survey made of the lands within the permit area which the reconnaissance inspection indicates could be prime farmland. Soil surveys of the detail used by the U.S. Soil Conservation Service for operational conservation planning shall be used to identify and locate prime farmland soils.

If the soil survey indicates that no prime farmland soils are present within the proposed permit area, the plan shall include the results of a reconnaissance inspection of the proposed permit area to indicate whether prime farmland exists.

**Analysis:**

No additional surface facilities disturbance is associated with the current proposal of adding Federal Lease UTU-78562 to the permit area. No modification to the current MRP is required.

## Findings:

Information in the application is adequate to meet the Prime Farmland Information requirements of the regulations.

## 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
- (4) 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

**ENVIRONMENTAL RESOURCE INFORMATION**

are unnecessary because other information having equal value or effect is available to the Division in a satisfactory form.

**Analysis:**

The geologic coverage of the area is already sufficiently addressed in the current MRP. Maps 6-1, 6-2, and 6-3 (Regional Geology, Coal Seam Structure, and Lower Sunnyside Coal seam, respectively) were resubmitted to illustrate the addition of Federal Lease UTU-78562. No additional changes were made to the above-referenced maps.

**Findings:**

Information provided in the proposal is adequate to meet the requirements of the Geologic Resource Information section of the regulations.

**HYDROLOGIC RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 701.5, 784.14; R645-100-200, -301-724.

Minimum Regulatory Requirements:

Sampling and Analysis.

All water-quality analyses performed to meet the requirements of this section shall be conducted according to the methodology in the 15th edition of "Standard Methods for the Examination of Water and Wastewater," which is incorporated by reference, or the methodology in 40 CFR Parts 136 and 434. Water-quality sampling shall be conducted according to either methodology listed above when feasible. This incorporation by reference was approved by the Director of the Federal Register on October 26, 1983. This document is incorporated as it exists on the date of the approval, and a notice of any change in it will be published in the Federal Register.

Baseline information.

The application shall include the following baseline hydrologic information, and any additional information required by the Division.

- (1) Ground-water information. The location and ownership for the permit and adjacent areas of existing wells, springs, and other ground-water resources, seasonal quality and quantity of ground water, and usage. Water-quality descriptions shall include, at a minimum, total dissolved solids or specific conductance corrected to 25 C, pH, total iron, and total manganese. Ground-water quantity descriptions shall include, at a minimum, approximate rates of discharge or usage and depth to the water in the coal seam, and each water-bearing stratum above and potentially impacted stratum below the coal seam.
- (2) Surface-water information. The name, location, ownership, and description of all surface-water bodies such as streams, lakes, and impoundments, the location of any discharge into any surface-water body in the proposed permit and adjacent areas, and information on surface-water quality and quantity sufficient to demonstrate seasonal variation and water usage. Water-quality descriptions shall include, at a minimum, baseline information on total suspended solids, total dissolved solids or specific conductance corrected to 25 C, pH, total iron, and total manganese. Baseline acidity and alkalinity information shall be provided if there is a potential for acid drainage from the proposed mining operation. Water-quantity descriptions shall include, at a minimum, baseline information on seasonal flow rates.
- (3) Supplemental information. If the determination of the probable hydrologic consequences (PHC) indicates that adverse impacts on or off the proposed permit area may occur to the hydrologic balance, or that acid-forming or toxic-forming material is present that may result in the contamination of ground-water or surface-water supplies, then supplemental information shall be provided to evaluate such probable hydrologic consequences and to plan remedial and reclamation activities. Such supplemental information may be based upon drilling, aquifer tests, hydrogeologic analysis of the water-bearing strata, flood flows, or analysis of other water-quality or quantity characteristics.

**ENVIRONMENTAL RESOURCE INFORMATION**

---

Baseline cumulative impact area information.

- (1) Hydrologic and geologic information for the cumulative impact area necessary to assess the probable cumulative hydrologic impacts of the proposed operation and all anticipated mining on surface- and ground-water systems shall be provided if available from appropriate Federal or State agencies.
- (2) If this information is not available from such agencies, then the applicant may gather and submit this information as part of the permit application.
- (3) The permit shall not be approved until the necessary hydrologic and geologic information is available.

Modeling.

The use of modeling techniques, interpolation, or statistical techniques may be included as part of the permit application, but actual surface- and ground-water information may be required for each site even when such techniques are used.

Probable hydrologic consequences determination.

- 1.) The application shall contain a determination of the probable hydrologic consequences (PHC) of the proposed operation based upon the quality and quantity of surface and ground water under seasonal flow conditions for the proposed permit and adjacent areas.
- 2.) The PHC determination shall be based on baseline hydrologic, geologic, and other information collected for the permit application and may include data statistically representative of the site.
- 3.) The PHC determination shall include findings on: whether adverse impacts may occur to the hydrologic balance; whether acid-forming or toxic-forming materials are present that could result in the contamination of surface or ground water supplies; and, what impact the proposed operation will have on sediment yield from the disturbed area; acidity, total suspended and dissolved solids, and other important water quality parameters of local impact; flooding or streamflow alteration; ground water and surface water availability; and other characteristics as required.
- 4.) An application for a permit revision shall be reviewed by the Division to determine whether a new or updated PHC shall be required.

Ground-water monitoring plan.

- 1.) The application shall include a ground-water monitoring plan based upon the PHC determination and the analysis of all baseline hydrologic, geologic, and other information in the permit application. The plan shall provide for the monitoring of parameters that relate to the suitability of the ground water for current and approved postmining land uses and to the objectives for protection of the hydrologic balance. It shall identify the quantity and quality parameters to be monitored, sampling frequency, and site locations. It shall describe how the data may be used to determine the impacts of the operation upon the hydrologic balance. At a minimum, total dissolved solids or specific conductance corrected to 25 C, pH, total iron, total manganese, and water levels shall be monitored and data submitted to the Division at least every 3 months for each monitoring location. The Division may require additional monitoring.
- 2.) If an applicant can demonstrate by the use of the PHC determination and other available information that a particular water-bearing stratum in the proposed permit and adjacent areas is not one which serves as an aquifer which significantly ensures the hydrologic balance within the cumulative impact area, then monitoring of that stratum may be waived by the Division.

Surface-water monitoring plan.

- 1.) The application shall include a surface-water monitoring plan based upon the PHC determination and the analysis of all baseline hydrologic, geologic, and other information in the permit application. The plan shall provide for the monitoring of parameters that relate to the suitability of the surface water for current and approved postmining land uses and to the objectives for protection of the hydrologic balance, as well as the effluent limitations found at 40 CFR Part 434.
- 2.) The plan shall identify the surface-water quantity and quality parameters to be monitored, sampling frequency, and site locations. It shall describe how the data may be used to determine the impacts of the operation upon the hydrologic balance. At all monitoring locations in streams, lakes, and impoundments that are potentially impacted or into which water will be discharged and at upstream monitoring locations, the total dissolved solids or specific conductance corrected to 25 C, total suspended solids, pH, total iron, total manganese, and flow shall be monitored. For point-source discharges, monitoring shall be conducted in accordance with 40 CFR Parts 122, 123, and 434 and as required by the National Pollutant Discharge Elimination System permitting authority.
- 3.) The monitoring reports shall be submitted to the Division every 3 months. The Division may require additional monitoring.

**Analysis:**

**Sampling and Analysis**

The sampling and analysis as outlined in the current plan is adequate for the current proposal.

**Baseline Information**

Adequate baseline information has been submitted to characterize the Whitmore Canyon drainage basin. Streams ST-3 and ST-8 have been sampled on a quarterly basis since May 1997. Springs SP-12, SP-13, SP-16 have been sampled on a quarterly basis since May 1997 to characterize the impacts to Colton and North Horn formations in Whitmore Canyon, respectively. Springs WR-1 and WR-2 have been sampled on a quarterly basis since June 1999 to characterize impacts to the Colton Formation on West Ridge. The addition of Stream sites ST-9 and ST-10 and Spring S-80 will be initiated in Grassy Trail Creek and Hanging Rock Spring to further characterize the potential impacts to the area.

**Ground-Water Information**

Groundwater is currently being monitored in the Blackhawk Formation at DH 86-2 and previously at DH 86-1. The adjacent Sunnyside mine was making appreciable water in the area of Whitmore Canyon. The proposed lease is down-dip of DH 86-2 and along strike of the Sunnyside mine workings, which illustrates a potential for appreciable groundwater to exist. Unfortunately, none of the exploration drill holes documented whether groundwater was encountered, so an important source of information is not available. If appreciable water is encountered, it will be handled in a fashion similar to water encountered at the Sunnyside Mines.

**Surface-Water Information**

The surface water information as outlined in the current plan (Mayo and Associates, 1997, appendix 7-1) is adequate for the current proposal.

**Baseline Cumulative Impact Area Information**

The information provided in the Mayo and Associate reports (1998, 2001 respectively) adequately characterize the area, with the exception of possibly better characterizing a groundwater elevation, as cited above.

**Modeling**

No numerical models have been created for the area.

### **Alternative Water Source Information**

The determination, by the applicant, of the probable hydrologic consequences indicates that the proposed coal mining activities will not result in the contamination, diminution, or interruption of groundwater or surface-water sources within the proposed or adjacent areas. Any water that will be produced/discharged from the mine will potentially have beneficial use to wildlife and irrigation of agricultural fields; similar uses were developed at the Sunnyside Mine when water was discharging from that mine.

### **Probable Hydrologic Consequences Determination**

The analysis of the probable hydrologic consequences (PHC), conducted by the permittee, concluded that it is highly unlikely mining will result in the permanent decrease of surface or groundwater discharge rates in the area surrounding Grassy Trail Creek. The stream channel is underlain by approximately 2,000 feet of cover, which includes the entire thickness of the North Horn Formation. The North Horn Formation is known to form an aquaclude, an effective barrier to vertical groundwater migration. The combination of extensive cover and the malleable nature of the North Horn Formation, inhibit any detrimental affects to the surface water flows and groundwater flows emanating from the Colton or North Horn Formations due to subsidence. Any differential subsidence of the channel should only have a temporary localized effect on sediment yield due to the nature of steep mountain streams flowing on alluvial or soft bedrock sediments.

Impacts to important water quality parameters should be minimal. Any water discharged from the mine will flow into the ephemeral C Canyon drainage, which is approximately 10 miles from the confluence of Grassy Trail Creek, the first perennial stream. It is unlikely any flow will from the mine will enter Grassy Trail Creek based on the general aridity of the region and the permeable nature of the alluvial sediments. Based on water quality from the neighboring Sunnyside Mines, the chemistry of the water is anticipated to be similar to waters that have been in contact with the Mancos Shale.

### **Findings:**

Information provided in the proposal is adequate to meet the requirements of the Hydrologic Resource Information section of the regulations.

## **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:

**ENVIRONMENTAL RESOURCE INFORMATION**

---

**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 remaining 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 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 gave the Division several maps that show the permit boundaries for the West Ridge mine including the Map 1-1 Location Map. Map 5-4A, (Mining Projections) shows the outline of both the proposed areas to be mined within the current federal leases (denoted in red lines), and future projections based on future reserve acquisitions (denoted in black lines). Map 5-4B, Mining Projections (Extended Reserves), show the mine layout if future reserves are acquired.

**Archeological Site Maps**

Map 4-2, Archeology Map, has been updated with this submittal. It shows the locations of archaeological surveys that have been done in the area and of cultural resource sites.

**Coal Resource and Geologic Information Maps**

The combination of Maps 5-7 (Subsidence) and 6-2 (Coal Seam Structure) adequately illustrate the nature, depth, and thickness of the coal seams to be mined. Map 6-1A (Geologic Cross-Section) illustrates a generalized identification of the stratum above and below the coal

**ENVIRONMENTAL RESOURCE INFORMATION**

---

seam to be mined (Lower Sunnyside).

Both within the Geologic and Hydrologic sections, the stratigraphy and subsurface resource maps have not been mapped due to the 'limited areal and vertical extent of the heterogeneous lithology of the rock units containing and overlying the coal-bearing strata'. A fence diagram or cross-section illustrating the discontinuous nature or 'heterogeneous lithology' (using exploration drill logs in Whitmore Canyon) will help delineate the coal resource and support the determination that no hydrologic resource (of lateral extent) exists.

**Cultural Resource Maps**

Map 4-2, Archeology Map, has been updated with this submittal. It shows the locations of archaeological surveys that have been done in the area and of cultural resource sites.

**Existing Structures and Facilities Maps**

No surface or subsurface features, such as buildings, transmission lines, pipelines exist in or near the proposed permit area. The Carbon County Road RS2477 that provided access to the top of West Ridge is located with the Whitmore lease. Several other dirt roads are located in the permit area, including a road in the Left Fork of Whitmore Canyon.

On Map 1-1, Location Map, the Permittee shows that part of the Grassy Trails reservoir is located within the permit area. The Permittee does not list that structure in Section 521.120. The Permittee needs to revise Section 521.120 to state that part of the Grassy Trail reservoir is located within the proposed permit area.

The regulations state that all existing structures will be shown on a map. The surface facilities map does not show the Grassy Trails reservoir nor is it mention in the text. Therefore, the Permittee must mention the reservoir in the text of the MRP.

**Existing Surface Configuration Maps**

Several maps show the existing surface configuration of the Whitmore lease, such as Map 1-1. That map is at a scale of 1-inch equals 2000 feet and has a contour interval of 40 feet.

**Mine Workings Maps**

The existing and proposed mine workings for the West Ridge mine and the Sunnyside mine are shown on Map 5-4A, Mining Projections. The map shows the location of the abandoned workings in the Sunnyside mine. The existing mine working and the proposed mine workings up to 2011 are shown.

### **Permit Area Boundary Maps**

The boundaries of the proposed addition to the permit area are shown on several maps, including the surface and subsurface ownership maps.

### **Surface and Subsurface Ownership Maps**

Surface and subsurface ownership are shown on revised Maps 5-2 and 5-3.

### **Surface and Subsurface Manmade Features Maps**

A road exists in the Left Fork of Whitmore Canyon and a small part of the Grassy Trail Reservoir is located in the eastern part of the Whitmore lease. No subsurface manmade features in the Whitmore lease area.

### **Subsurface Water Resource Maps**

The data available indicate no 'economic' water resources exist. The applicant has been asked to provide additional geologic information to support this finding (See Coal Resource and Geologic Information Maps)

### **Vegetation Reference Area Maps**

The current mining and reclamation plan contains a map showing the vegetation reference areas. Additional vegetation mapping information requirements are discussed in the "Vegetation Resource Information" section of this review.

### **Contour Maps**

Several maps show the existing contour at or near the Whitmore lease, such as Map 1-1. That map is at a scale of 1-inch equals 2000 feet and has a contour interval of 40 feet.

### **Findings:**

Information provided in the proposal is not adequate to meet the requirements of the Maps, Plans, and Cross Sections of Resource Information section of the regulations. Prior to final approval, the applicant must supply the following in accordance with:

**R645-301-624**, Illustrate the 'heterogeneous lithology' in cross-section using exploration drill logs in Whitmore Canyon (i.e. holes N-17, B-8, B-7, H-16, H-31).

**ENVIRONMENTAL RESOURCE INFORMATION**

---

**R645-300-521.200**, The Permittee must include mention of the Grassy Trail Reservoir being located with the permit. The Division recommends that the information be located in Section 521.120.

**OPERATION PLAN**

---

# **OPERATION PLAN**

## **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 current proposal is an extension of coal reserves to the current mine plan. The type and method of coal mining procedures and proposed engineering techniques has not changed. The anticipated annual production, major equipment to be used also will remain the same. No new facilities or structures are planned or anticipated. No modification to the current MRP is necessary.

### **Findings:**

Information provided in the proposal is adequate to meet the requirements of the Operation Plan – Mining Operations and Facilities 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

## OPERATION PLAN

---

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 existing structures at the Whitmore lease include dirt roads and part of the Grassy Trail reservoir. Those structures are shown on several maps including Map 1-1, Location Map.

### **Findings:**

Information provided in the proposal is adequate to meet the requirements of the Operation Plan – Existing Structures section of the regulations.

## **PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES**

Regulatory Reference: 30 CFR 784.17; R645-301-411.

### **Minimum Regulatory Requirements:**

For any publicly owned parks or any places listed on the National Register of Historic Places that may be adversely affected by the proposed operation, each plan shall describe the measures to be used to prevent adverse impacts, or if valid existing rights exist or joint agency approval is to be obtained, to minimize impacts.

The Division may require the applicant to protect historic and archeological properties listed on or eligible for listing on the National Register of Historic Places through appropriate mitigation and treatment measures. Appropriate mitigation and treatment measures may be required to be taken after permit issuance provided that the required measures are completed before the properties are affected by any mining operation.

### **Analysis:**

No public parks or significant cultural resource sites are known to exist in the proposed addition to the permit area. Just outside the area is one site that might be eligible for listing in the National Register of Historic Places, but this site should not be affected by the mining operations.

### **Findings:**

Information provided in the application is adequate to meet the requirements of the Operation Plan – Protection of Public Parks and Historic Places section of the regulations.

**OPERATION PLAN**

---

**RELOCATION OR USE OF PUBLIC ROADS**

Regulatory Reference: 30 CFR 784.18; R645-301-521, -301-526.

**Minimum Regulatory Requirements:**

Describe, with appropriate maps and cross sections, the measures to be used to ensure that the interests of the public and landowners affected are protected if, the applicant seeks to have the Division approve conducting the proposed underground mining activities within 100 feet of the right-of-way line of any public road, except where mine access or haul roads join that right-of-way, or relocating a public road.

**Analysis:**

No additional public roads will be use or relocated in connection with the Whitmore lease.

**Findings:**

Information provided in the proposal is adequate to meet the requirements of the Operation Plan – Relocation or Use of Public Roads section of the regulations.

**AIR POLLUTION CONTROL PLAN**

Regulatory Reference: 30 CFR 784.26, 817.95; R645-301-244.

**Analysis:**

The current mining and reclamation plan contains a copy of the Air Quality Approval Order. Since this order does not apply to underground operations and since the applicant has not proposed any new surface facilities, no changes in the Air Quality Approval Order should be needed.

**Findings:**

Information in the application is adequate to meet the Air Pollution Control Plan section of the regulations.

**COAL RECOVERY**

Regulatory Reference: 30 CFR 817.59; R645-301-522.

**Minimum Regulatory Requirements:**

Underground mining activities shall be conducted so as to maximize the utilization and conservation of the coal, while utilizing the best technology currently available to maintain environmental integrity, so that re-affecting the land in the future through

surface coal mining operations is minimized.

**Analysis:**

The Permittee submitted a resource recovery and protection plan to the BLM. The R2P2 outlined how the Permittee would maximize coal recovery. The BLM has staff members who are specifically trained in evaluating coal recovery programs. The Division relies on the expertise of the BLM in evaluating coal recovery programs.

The Division reviewed the coal recovery program and found that the panel layout and mining methods will maximize coal recovery. The Permittee will use longwall mine were feasible. Coal recovery is dependent on several factors including depth of cover and coal quality and thickness. Since those factors cannot be determined before mining the recovery plan will be adjusted as more information is obtained.

**Findings:**

Information provided in the proposal is adequate to meet the requirements of the Operation Plan – Coal Recovery section of the regulations.

## SUBSIDENCE CONTROL PLAN

Regulatory Reference: 30 CFR 784.20, 817.121, 817.122; R645-301-521, -301-525, -301-724.

**Minimum Regulatory Requirements:**

**Renewable resources survey**

Include a survey, which shall show whether structures or renewable resource lands exist within the proposed permit area and adjacent area and whether subsidence, if it occurred, could cause material damage or diminution of reasonably foreseeable use of such structures or renewable resource lands. If the survey shows that no such structures or renewable resource lands exist, or no such material damage or diminution could be caused in the event of mine subsidence, and if the Division agrees with such conclusion, no further information need be provided in the application under this section.

**Subsidence control plan**

In the event the survey shows that such structures or renewable resource lands exist, and that subsidence could cause material damage or diminution of value or foreseeable use of the land, or if the Division determines that such damage or diminution could occur, the application shall include a subsidence control plan which shall contain the following information:

- 1.) A description of the method of coal removal, such as longwall mining, room-and-pillar removal, hydraulic mining, or other extraction methods, including the size, sequence, and timing for the development of underground workings.
- 2.) A map of underground workings which describes the location and extent of areas in which planned-subsidence mining methods will be used and which includes all areas where measures will be taken to prevent or minimize subsidence and subsidence related damage and where appropriate, to correct subsidence-related material damage.
- 3.) A description of the physical conditions, such as depth of cover, seam thickness, and lithology, which affect the likelihood or extent of subsidence and subsidence-related damage.
- 4.) A description of monitoring, if any, needed to determine the commencement and degree of subsidence so that, when appropriate, other measures can be taken to prevent, reduce, or correct material damage.
- 5.) Except for those areas where planned subsidence is projected to be used, a detailed description of the subsidence control measures that will be taken to prevent or minimize subsidence and subsidence-related damage, including, but not limited to: backstowing or backfilling of voids; leaving support pillars of coal; leaving areas in which no coal is

## OPERATION PLAN

- removed, including a description of the overlying area to be protected by leaving the coal in place; and, taking measures on the surface to prevent material damage or lessening of the value or reasonably foreseeable use of the surface.
- 6.) A description of the anticipated effects of planned subsidence, if any.
  - 7.) A description of the measures to be taken to mitigate or remedy any subsidence-related material damage to, or diminution in value or reasonably foreseeable use of the land, or structures or facilities to the extent required under State law.
  - 8.) Other information specified by the Division as necessary to demonstrate that the operation will be conducted in accordance with the performance standards for subsidence control.

### Performance standards for subsidence control

The operator shall either adopt measures consistent with known technology which prevent subsidence from causing material damage to the extent technologically and economically feasible, maximize mine stability, and maintain the value and reasonably foreseeable use of surface lands; or, adopt mining technology which provides for planned subsidence in a predictable and controlled manner. Nothing in this part shall be construed to prohibit the standard method of room-and-pillar mining.

The operator shall comply with all provisions of the approved subsidence control plan.

The operator shall correct any material damage resulting from subsidence caused to surface lands, to the extent technologically and economically feasible, by restoring the land to a condition capable of maintaining the value and reasonably foreseeable uses which it was capable of supporting before subsidence, and, to the extent required under applicable provisions of State law, either correct material damage resulting from subsidence caused to any structures or facilities by repairing the damage or compensate the owner of such structures or facilities in the full amount of the diminution in value resulting from the subsidence. Repair of damage includes rehabilitation, restoration, or replacement of damaged structures or facilities. Compensation may be accomplished by the purchase prior to mining of a non-cancelable premium-prepaid insurance policy.

Underground mining activities shall not be conducted beneath or adjacent to: public buildings and facilities; churches, schools, and hospitals; or, impoundments with a storage capacity of 20 acre-feet or more or bodies of water with a volume of 20 acre-feet or more, unless the subsidence control plan demonstrates that subsidence will not cause material damage to, or reduce the reasonably foreseeable use of, such features or facilities. If the Division determines that it is necessary in order to minimize the potential for material damage to the features or facilities described above or to any aquifer or body of water that serves as a significant water source for any public water supply system, it may limit the percentage of coal extracted under or adjacent thereto.

If subsidence causes material damage to any of the features or facilities, the Division may suspend mining under or adjacent to such features or facilities until the subsidence control plan is modified to ensure prevention of further material damage to such features or facilities.

The Division shall suspend underground mining activities under urbanized areas, cities, towns, and communities, and adjacent to industrial or commercial buildings, major impoundments, or perennial streams, if imminent danger is found to inhabitants of the urbanized areas, cities, towns, or communities.

Within a schedule approved by the Division, the operator shall submit a detailed plan of the underground workings. The detailed plan shall include maps and descriptions, as appropriate, of significant features of the underground mine, including the size, configuration, and approximate location of pillars and entries, extraction ratios, measures taken to prevent or minimize subsidence and related damage, areas of full extraction, and other information required by the Division. Upon request of the operator, information submitted with the detailed plan may be held as confidential.

### Notification

At least 6 months prior to mining, or within that period if approved by the Division, the underground mine operator shall mail a notification to all owners and occupants of surface property and structures above the underground workings. The notification shall include, at a minimum, identification of specific areas in which mining will take place, dates that specific areas will be undermined, and the location or locations where the operator's subsidence control plan may be examined.

### Analysis:

#### Renewable Resources Survey

The Permittee did not state if the original renewable resource survey included the entire Whitmore lease. If a renewable resource survey was not conducted then the Permittee must do

so. If the renewable resource survey includes the Whitmore lease, then the survey results must be included in the MRP.

### **Subsidence Control Plan**

In Section 525.200, Subsidence Control, the Permittee make contradicting statements. The Permittee states that no impoundment of 20 acre-feet of more capacity exists in the permittee boundary but Map 1-1 clearly shows that part of the Grassy Trail reservoir is within the permit boundaries.

In Section 525.200, Subsidence Control, the Permittee states that as longwall mining approaches Grassy Trail Reservoir that ongoing subsidence monitoring information will be used to determine the angle of draw and the subsidence ratio in the area. Based on this information the underground workings will be designed to ensure that the reservoir is not adversely affected by mining activities. However, the Permittee does not state what criteria will be used to prevent subsidence damage to the reservoir. The Permittee must provide that information in the MRP.

Map 5-7, Subsidence Map, shows where subsidence will occur. The map shows that subsidence and mining will take place outside the permit boundary. The Permittee must confine all mining activities, including subsidence, to the permit boundaries (whether through adjusting the angle of draw and/or the subsidence ratio.

Map 5-4A and Map 5-4B show the location of each longwall panel and the estimated dates when mining will occur. Those maps can be overlaid on Map 5-7 so that the approximate dates of subsidence can be determined.

### **Performance Standards for Subsidence Control**

The Permittee has made a commitment to meet all required performance standards.

### **Notification**

The Permittee has made a commitment meet the required notification standards.

### **Findings:**

Information provided in the proposed amendment is not adequate to meet the requirements of the Operation Plan – Subsidence Control Plan section. Prior to approval, the Applicant must provide the following in accordance with:

**R645-300-521.100**, state the results of the pre-subsidence survey for the Whitmore lease. If the Whitmore lease pre-subsidence survey was included in the original subsidence survey, it needs to be stated specifically in the MRP.

**OPERATION PLAN**

---

**R645-300-121.200**, clarify statement in Section 525.200, Subsidence Control about the existence of a 20 acre-feet or greater capacity reservoir within the permit boundary. The Grassy Trail reservoir stores more than 20 acre-feet.

**R645-300-525.450 and R645-301-535.311**, state what criteria will be used to determine what measures will be taken to prevent subsidence damage from the Grassy Trail reservoir.

**R645-300-140**, revise Map 5-7, Subsidence Map, to show that subsidence will only occur within the permit area.

## **SLIDES AND OTHER DAMAGE**

Regulatory Reference: 30 CFR 817.99; R645-301-515.

### **Minimum Regulatory Requirements:**

At any time a slide occurs which may have a potential adverse effect on public, property, health, safety, or the environment, the person who conducts the underground mining activities shall notify the Division by the fastest available means and comply with any remedial measures required by the Division.

The permit application will incorporate a description of notification when potential impoundment hazards exist. The requirements for the description are: If any examination or inspection discloses that a potential hazard exists, the person who examined the impoundment will promptly inform the Division 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 will be notified immediately. The Division will then notify the appropriate agencies that other emergency procedures are required to protect the public.

### **Analysis:**

West Ridge Resources has made a written commitment to notify the Division by telephone and comply with required remedial measures in the current MRP. No modification is necessary.

### **Findings:**

Information provided in the proposal is adequate to meet the requirements of Operational Plan – Slides and Other Damage 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:**

## OPERATION PLAN

---

### Protection and enhancement plan

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

### Protection and Enhancement Plan

As discussed in the resource information section of this analysis, the application needs to contain a discussion about the potential for bat habitat and of the mine adversely affecting bats. When the Division receives this information, it will assess these effects.

The mining proposed in this application is similar to that already approved in the mining and reclamation plan, and the protection and enhancement plan in the current plan is considered

**OPERATION PLAN**

---

adequate for the proposed mining.

**Endangered and Threatened Species**

Water consumption in the upper Colorado River drainage is considered to potentially adversely affect four threatened and endangered fish species. The applicant needs to include information indicating whether the proposal will increase water consumption by the mine. When the Division receives this information, it will recommend to the Fish and Wildlife Service whether protection or mitigation measures are necessary.

In this review, the Division is asking for more information about whether there is potential western yellow-billed cuckoo habitat in the area. When it receives this information, it will assess the potential for adversely affecting this species.

According to information in the application, there is either no habitat for the Mexican spotted owl or mining will not affect this species.

Other species that may occur in the area will not be affected by this proposal for reasons discussed in the "Fish and Wildlife Resource Information" section of this analysis.

**Bald and Golden Eagles**

It is not clear from the resource information whether the proposed addition to the permit area was surveyed for the presence of raptor nests. If it was and the area contains no nests, no protection measures are needed. If the area has not been surveyed, the Division needs the survey information before determining whether the commitments in the current mining and reclamation plan are adequate.

**Wetlands and Habitats of Unusually High Value for Fish and Wildlife**

Although the proposed addition to the permit area contains habitat of unusually high value for mule deer, the proposed mining should have little or no effect on this habitat. Therefore, a protection and enhancement plan is not needed.

Springs and streams in the area are considered very valuable for wildlife species, and the applicant is monitoring these water sources.

The application needs to contain information about the habitat in the area of Grassy Trail Creek. Depending of the type of habitat that occurs in this area, the Division may need to require additional protection, monitoring, or mitigation measures.

### Findings:

Information provided in the proposal is not adequate to meet the requirements of the Operational Plan – Fish and Wildlife Information section of the regulations. Prior to final approval, the applicant must supply the following in accordance with:

**R645-301-333**, The application needs to contain information indicating whether the proposal will increase water consumption by the mine.

Because the Division needs further baseline information, it is impossible to determine whether the rest of the fish and wildlife protection plan is adequate. When the Division receives this information, it may be necessary to include additional monitoring, mitigation, or protection measures.

## 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.

**OPERATION PLAN**

---

**Analysis:**

No modification to the currently approved MRP is necessary. No additional Soil removal or storage is needed with the proposed addition of Federal Lease UTU-78562.

**Findings:**

Information in the application is adequate to meet the Topsoil and Subsoil section of the regulations.

**VEGETATION**

Regulatory Reference: R645-301-330, -301-331, -301-332.

**Minimum Regulatory Requirements:**

Each application will contain a plan for protection of vegetation, fish, and wildlife resources throughout the life of the mine. The plan will provide a description of the measures taken to disturb the smallest practicable area at any one time and through prompt establishment and maintenance of vegetation for interim stabilization of disturbed areas to minimize surface erosion. This may include part or all of the plan for final revegetation as described in reclamation plan for revegetation.

For UNDERGROUND COAL MINING AND RECLAMATION ACTIVITIES a description of the anticipated impacts of subsidence on renewable resource lands and how such impact will be mitigated needs to be presented.

A description of how, to the extent possible, using the best technology currently available, the operator will minimize disturbances and adverse impacts. This description will 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, the monitoring of surface water quality and quantity, and through prompt establishment and maintenance of vegetation for interim stabilization of disturbed areas to minimize surface erosion.

**Analysis:**

The current mining and reclamation plan contains commitments to monitor the effects of subsidence on vegetation, which is considered adequate for the area proposed to be added to the permit area. The plan also contains a plan for establishment of interim vegetation cover in operational areas.

**Findings:**

Information in the application is adequate to meet the requirements of the Operational Plan - Vegetation section of the regulations.

## 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

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

## OPERATION PLAN

- 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 of suspended solids to streamflow.
  - 6.) 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:

No modification to the current MRP is necessary because no additional roads will be built or modified as a result of the Whitmore Lease. Due to no additional roads being built, the Road classification system, Plans and drawings, Performance standards, Primary road certification, and other transportation facilities remain the same as stated in the current MRP.

### Findings:

Information provided in the proposal is not adequate to meet the requirements of the Operational Plan – Road Systems and Other Transportation Facilities section of the regulations.

## 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:

#### Disposal of noncoal mine wastes

Noncoal mine wastes including, but not limited to, grease, lubricants, paints, flammable liquids, garbage, abandoned mining machinery, lumber, and other combustible materials generated during mining activities shall be placed and stored in a controlled manner in a designated portion of the permit area. Placement and storage shall ensure that leachate and surface runoff do not degrade surface or ground water, that fires are prevented, and that the area remains stable and suitable for reclamation and revegetation compatible with the natural surroundings.

Final disposal of noncoal mine wastes shall be in a designated disposal site in the permit area or a State-approved solid waste disposal area. Disposal sites in the permit area shall be designed and constructed to ensure that leachate and drainage from the noncoal mine waste area does not degrade surface or underground water. Wastes shall be routinely compacted and covered to prevent combustion and windborne waste. When the disposal is completed, a minimum of 2 feet of soil cover shall be placed over the site, slopes stabilized, and revegetated. Operation of the disposal site shall be conducted in accordance with all local, State, and Federal requirements.

At no time shall any noncoal mine waste be deposited in a refuse pile or impounding structure, nor shall any excavation for a noncoal mine waste disposal site be located within 8 feet of any coal outcrop or coal storage area.

Any noncoal mine waste defined as "hazardous" under Section 3001 of the Resource Conservation and Recovery Act (RCRA) (Pub. L. 94-580, as amended) and 40 CFR Part 261 shall be handled in accordance with the requirements of Subtitle C of RCRA and any implementing regulations.

#### 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;
- 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

## OPERATION PLAN

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.

### Refuse piles

Refuse piles shall meet the requirements of coal mine waste, the additional requirements provided below and the requirements of 30 CFR Sections 77.214 and 77.215.

If the disposal area contains springs, natural or manmade water courses, or wet-weather seeps, the design shall include diversions and underdrains as necessary to control erosion, prevent water infiltration into the disposal facility, and ensure stability. Uncontrolled surface drainage may not be diverted over the outslope of the refuse pile. Runoff from areas above the refuse pile and runoff from the surface of the refuse pile shall be diverted into stabilized diversion channels designed to safely pass the runoff from a 100-year, 6-hour precipitation event. Runoff diverted from undisturbed areas need not be commingled with runoff from the surface of the refuse pile.

Underdrains shall comply with the general requirements for the disposal of excess spoil.

Slope protection shall be provided to minimize surface erosion at the site. All disturbed areas, including diversion channels that are not riprapped or otherwise protected, shall be revegetated upon completion of construction.

All vegetative and organic materials shall be removed from the disposal area prior to placement of coal mine waste. Topsoil shall be removed, segregated and stored or redistributed. If approved by the Division, organic material may be used as mulch or may be included in the topsoil to control erosion, promote growth of vegetation, or increase the moisture retention of the soil.

The final configuration of the refuse pile shall be suitable for the approved postmining land use. Terraces may be constructed on the outslope of the refuse pile if required for stability, control of erosion, conservation of soil moisture, or facilitation of the approved postmining land use. The grade of the outslope between terrace benches shall not be steeper than 2h:1v (50 percent).

No permanent impoundments shall be allowed on the completed refuse pile. Small depressions may be allowed by the Division if they are needed to retain moisture, minimize erosion, create and enhance wildlife habitat, or assist revegetation, and if they are not incompatible with the stability of the refuse pile.

Following final grading of the refuse pile, the coal mine waste shall be covered with a minimum of 4 feet of the best available, nontoxic and noncombustible material, in a manner that does not impede drainage from the underdrains. The Division may allow less than 4 feet of cover material based on physical and chemical analyses which show that the revegetation requirements will be met.

A qualified registered professional engineer, or other qualified professional specialist under the direction of the professional engineer, shall inspect the refuse pile during construction. The professional engineer or specialist shall be experienced in the construction of similar earth and waste structures. Such inspection shall be made at least quarterly throughout construction and during critical construction periods. Critical construction periods shall include, at a minimum: Foundation preparation including the removal of all organic material and topsoil; Placement of underdrains and protective filter systems; Installation of final surface drainage systems; and, The final graded and revegetated facility. Regular inspections by the engineer or specialist shall also be conducted during placement and compaction of coal mine waste materials. More frequent inspections shall be conducted if a danger of harm exists to the public health and safety or the environment. Inspections shall continue until the refuse pile has been finally graded and revegetated or until a later time as required by the Division.

The qualified registered professional engineer shall provide a certified report to the Division promptly after each inspection that the refuse pile has been constructed and maintained as designed and in accordance with the approved plan and this Chapter. The report shall include appearances of instability, structural weakness, and other hazardous conditions. The certified report on the drainage system and protective filters shall include color photographs taken during and after construction, but before underdrains are covered with coal mine waste. If the underdrain system is constructed in phases, each phase shall be certified separately. The photographs accompanying each certified report shall be taken in adequate size and number with enough terrain or other physical features of the site shown to provide a relative scale to the photographs and to specifically and clearly identify the site. A copy of each inspection report shall be retained at or near the minesite.

### Impounding structures

New and existing impounding structures constructed of coal mine waste or intended to impound coal mine waste shall meet the requirements for coal mine waste.

Coal mine waste shall not be used for construction of impounding structures unless it has been demonstrated to the

## OPERATION PLAN

---

Division that the stability of such a structure conforms to the requirements of this part and that the use of coal mine waste will not have a detrimental effect on downstream water quality or the environment due to acid seepage through the impounding structure. The stability of the structure and the potential impact of acid mine seepage through the impounding structure shall be discussed in detail in the design plan submitted to the Division.

Each impounding structure constructed of coal mine waste or intended to impound coal mine waste shall be designed, constructed, and maintained in accordance with the requirements for temporary impoundments. Such structures may not be retained permanently as part of the approved postmining land use.

Each impounding structure constructed of coal mine waste or intended to impound coal mine waste that meets the criteria of 30 CFR Sec. 77.216(a) shall have sufficient spillway capacity to safely pass, adequate storage capacity to safely contain, or a combination of storage capacity and spillway capacity to safely control, the probable maximum precipitation of a 6-hour precipitation event, or greater event as specified by the Division. Spillways and outlet works shall be designed to provide adequate protection against erosion and corrosion. Inlets shall be protected against blockage.

Runoff from areas above the disposal facility or runoff from the surface of the facility that may cause instability or erosion of the impounding structure shall be diverted into a stabilized diversion channels designed to safely pass the runoff from a 100-year, 6-hour design precipitation event.

Impounding structures constructed of or impounding coal mine waste shall be designed and function so that at least 90 percent of the water stored during the design precipitation event can be removed within a 10-day period.

**Burning and burned waste utilization**

Coal mine waste fires shall be extinguished by the person who conducts the surface mining activities, in accordance with a plan approved by the Division and the Mine Safety and Health Administration. The plan shall contain, at a minimum, provisions to ensure that only those persons authorized by the operator, and who have an understanding of the procedures to be used, shall be involved in the extinguishing operations. No burning or unburned coal mine waste shall be removed from a permitted disposal area without a removal plan approved by the Division. Consideration shall be given to potential hazards to persons working or living in the vicinity of the structure.

**Return of coal processing waste to abandoned underground workings**

Each plan shall describe the design, operation and maintenance of any proposed coal processing waste disposal facility, including flow diagrams and any other necessary drawings and maps, for the approval of the Division and the Mine Safety and Health Administration.

Each plan shall describe the source and quality of waste to be stowed, area to be backfilled, percent of the mine void to be filled, method of constructing underground retaining walls, influence of the backfilling operation on active underground mine operations, surface area to be supported by the backfill, and the anticipated occurrence of surface effects following backfilling.

The applicant shall describe the source of the hydraulic transport mediums, method of dewatering the placed backfill, retention of water underground, treatment of water if released to surface streams, and the effect on the hydrologic regime.

The plan shall describe each permanent monitoring well to be located in the backfilled area, the stratum underlying the mined coal, and gradient from the backfilled area.

The requirements of this section shall also apply to pneumatic backfilling operations, except where the operations are exempted by the Division from requirements specifying hydrologic monitoring.

**Excess Spoil: General Requirements**

Excess spoil shall be placed in designated disposal areas within the permit area, in a controlled manner to: minimize the adverse effects of leachate and surfacewater runoff from the fill on surface and ground waters; ensure mass stability and prevent mass movement during and after construction; and, ensure that the final fill is suitable for reclamation and revegetation compatible with the natural surroundings and the approved postmining land use.

The fill and appurtenant structures 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 earth and rock fills shall certify the design of the fill and appurtenant structures. The fill shall be designed to attain a minimum long-term static safety factor of 1.5. The foundation and abutments of the fill must be stable under all conditions of construction.

The disposal area shall be located on the most moderately sloping and naturally stable areas available, as approved by the Division, and shall be placed, where possible, upon or above a natural terrace, bench, or berm, if such placement provides additional stability and prevents mass movement.

**OPERATION PLAN**

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 foundation conditions shall take into consideration the effect of underground mine workings, if any, upon the stability of the fill and appurtenant structures. When the slope in the disposal area is in excess of 2.8h:1v (36 percent), or such lesser slope as may be designated by the Division based on local conditions, keyway cuts (excavations to stable bedrock) or rock toe buttresses shall be constructed to ensure stability of the fill. Where the toe of the spoil rests on a downslope, stability analyses shall be performed to determine the size of rock toe buttresses and keyway cuts.

All vegetative and organic materials shall be removed from the disposal area prior to placement of excess spoil. Topsoil shall be removed, segregated and stored and redistributed in accordance with the requirements for topsoil handling. If approved by the Division, organic material may be used as mulch or may be included in the topsoil to control erosion, promote growth of vegetation, or increase the moisture retention of the soil.

Excess spoil shall be transported and placed in a controlled manner in horizontal lifts not exceeding 4 feet in thickness; concurrently compacted as necessary to ensure mass stability and to prevent mass movement during and after construction; graded so that surface and subsurface drainage is compatible with the natural surroundings; and covered with topsoil or substitute material. The Division may approve a design which incorporates placement of excess spoil in horizontal lifts other than 4 feet in thickness when it is demonstrated by the operator and certified by a qualified registered professional engineer that the design will ensure the stability of the fill and will meet all other applicable requirements.

The final configuration of the fill shall be suitable for the approved postmining land use. Terraces may be constructed on the outslope of the fill if required for stability, control of erosion, to conserve soil moisture, or to facilitate the approved postmining land use. The grade of the outslope between terrace benches shall not be steeper than 2h:1v (50 percent).

No permanent impoundments are allowed on the completed fill. Small depressions may be allowed by the Division if they are needed to retain moisture, minimize erosion, create and enhance wildlife habitat, or assist revegetation; and if they are not incompatible with the stability of the fill.

Excess spoil that is acid- or toxic-forming or combustible shall be adequately covered with nonacid, nontoxic and noncombustible material, 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.

If the disposal area contains springs, natural or manmade water courses, or wet weather seeps, the fill design shall include diversions and underdrains as necessary to control erosion, prevent water infiltration into the fill, and ensure stability. Underdrains shall consist of durable rock or pipe, be designed and constructed using current, prudent engineering practices and meet any design criteria established by the Division. The underdrain system shall be designed to carry the anticipated seepage of water due to rainfall away from the excess spoil fill and from seeps and springs in the foundation of the disposal area and shall be protected from piping and contamination by an adequate filter. Rock underdrains shall be constructed of durable, nonacid-, nontoxic-forming rock (e.g., natural sand and gravel, sandstone, limestone, or other durable rock) that does not slake in water or degrade to soil materials, and which is free of coal, clay, or other nondurable material. Perforated pipe underdrains shall be corrosion resistant and shall have characteristics consistent with the long-term life of the fill.

Slope protection shall be provided to minimize surface erosion at the site. All distributed areas, including diversion channels that are not riprapped or otherwise protected, shall be revegetated upon completion of construction.

A qualified registered professional engineer or other qualified professional specialist under the direction of the professional engineer, shall periodically inspect the fill during construction. The professional engineer or specialist shall be experienced in the construction of earth and rock fills. Such inspections shall be made at least quarterly throughout construction and during critical construction periods. Critical construction periods shall include at a minimum: foundation preparation, including the removal of all organic material and topsoil; placement of underdrains and protective filter systems; installation of final surface drainage systems; and, the final graded and revegetated fill. Regular inspections by the engineer or specialist shall also be conducted during placement and compaction of fill materials. The qualified registered professional engineer shall provide a certified report to the Division promptly after each inspection that the fill has been constructed and maintained as designed and in accordance with the regulatory requirements. The report shall include appearances of instability, structural weakness, and other hazardous conditions. The certified report on the drainage system and protective filters shall include color photographs taken during and after construction, but before underdrains are covered with excess spoil. If the underdrain system is constructed in phases, each phase shall be certified separately. Where excess durable rock spoil is placed in single or multiple lifts such that the underdrain system is constructed simultaneously with excess spoil placement by the natural segregation of dumped materials, color photographs shall be taken of the underdrain as the underdrain system is being formed. The photographs accompanying each certified report shall be taken in adequate size and number with enough terrain or other physical features of the site shown to provide a relative scale to the photographs and to specifically and clearly identify the site. A copy of each inspection report shall be retained at or near the mine site.

Coal mines waste may be disposed of in excess spoil fills if approved by the Division and, if such waste is: placed in accordance with the requirements for refuse piles; nontoxic and nonacid forming; and, of the proper characteristics to be consistent

## OPERATION PLAN

---

with the design stability of the fill.

Spoil resulting from face-up operations for underground coal mine development may be placed at drift entries as part of a cut-and-fill structure, if the structure is less than 400 feet in horizontal length and designed in accordance with the general requirements for the disposal of excess spoil.

Excess Spoil: Valley fills/head-of-hollow fills

Valley fills and head-of-hollow fills shall meet the general requirements for excess spoil and the following additional requirements.

The top surface of the completed fill shall be graded such that the final slope after settlement will be toward properly designed drainage channels. Uncontrolled surface drainage may not be directed over the outslope of the fill. Runoff from areas above the fill and runoff from the surface of the fill shall be diverted into stabilized diversion channels and to safely pass the runoff from a 100-year, 6-hour precipitation event.

A rock-core chimney drain may be used in a head-of-hollow fill, instead of the underdrain and surface diversion system normally required, as long as the fill is not located in an area containing intermittent or perennial streams. A rock-core chimney drain may be used in a valley fill if the fill does not exceed 250,000 cubic yards of material and upstream drainage is diverted around the fill. The alternative rock-core chimney drain system shall be incorporated into the design and construction of the fill as follows:

- 1.) The fill shall have, along the vertical projection of the main buried stream channel or rill, a vertical core of the durable rock at least 16 feet thick which shall extend from the toe of the fill to the head of the fill and from the base of the fill to the surface of the fill. A system of lateral rock underdrains shall connect this rock core to each area of potential drainage or seepage in the disposal area. The underdrain system and rock core shall be designed to carry the anticipated seepage of water due to rainfall away from the excess spoil fill and from seeps and springs in the foundation of the disposal area.
- 2.) A filter system to ensure the proper long-term functioning of the rock core shall be designed and constructed using current, prudent engineering practices.
- 3.) Grading may drain surface water away from the outslope of the fill and toward the rock core. In no case, however, may intermittent or perennial streams be diverted into the rock core. The maximum slope of the top of the fill shall be 33h:1v (3 percent). A drainage pocket may be maintained at the head of the fill during and after construction, to intercept surface runoff and discharge the runoff through or over the rock drain, if stability of the fill is not impaired. In no case shall this pocket or sump have a potential capacity for impounding more than 10,000 cubic feet of water. Terraces on the fill shall be graded with a 3- to 5-percent grade toward the fill and a 1-percent slope toward the rock core.

Excess Spoil: Durable rock fills

The Division may approve the alternative method of disposal of excess durable rock spoil by gravity placement in single or multiple lifts, provided the following conditions are met: durable rock fills shall meet the general requirements for excess spoil except as provided in this section; the excess spoil consists of at least 80 percent, by volume, durable, nonacid- and nontoxic-forming rock (e.g., sandstone or limestone) that does not slake in water and will not degrade to soil material. Where used, noncemented clay shale, clay spoil, soil, or other nondurable excess spoil material shall be mixed with excess durable rock spoil in a controlled manner such that no more than 20 percent of the fill volume, as determined by tests performed by a registered engineer and approved by the Division, is not durable rock; a qualified registered professional engineer certifies that the design will ensure the stability of the fill and meet all other applicable requirements; the fill is designed to attain a minimum long-term static safety factor of 1.5, and an earthquake safety factor of 1.1; the underdrain system may be constructed simultaneously with excess spoil placement by the natural segregation of dumped materials, provided the resulting underdrain system is capable of carrying anticipated seepage of water due to rainfall away from the excess spoil fill and from seeps and springs in the foundation of the disposal area and the other requirements for drainage control are met; and, surface water runoff from areas adjacent to and above the fill is not allowed to flow onto the fill and is diverted into stabilized diversion channels designed to safely pass the runoff from a 100-year, 6-hour precipitation event.

Excess Spoil: Preexisting benches

The Division may approve the disposal of excess spoil through placement on preexisting benches, provided that the general requirements for excess spoil and the requirements of this section are met.

Excess spoil shall be placed only on the solid portion of the preexisting bench. The fill shall be designed, using current, prudent engineering practices, to attain a long-term static safety factor of 1.3 for all portions of the fill. The preexisting bench shall be backfilled and graded to achieve the most moderate slope possible which does not exceed the angle of repose, and eliminate the highwall to the maximum extent technically practical.

Disposal of excess spoil from an upper actively mined bench to a lower preexisting bench by means of gravity transport

## OPERATION PLAN

may be approved by the Division provided that: the gravity transport courses are determined on a site-specific basis by the operator as part of the permit application and approved by the Division to minimize hazards to health and safety and to ensure that damage will be minimized between the benches, outside the set course, and downslope of the lower bench should excess spoil accidentally move; all gravity-transported excess spoil, including that excess spoil immediately below the gravity transport courses and any preexisting spoil that is disturbed, is rehandled and placed in horizontal lifts in a controlled manner, concurrently compacted as necessary to ensure mass stability and to prevent mass movement, and graded to allow surface and subsurface drainage to be compatible with the natural surroundings and to ensure a minimum long-term static safety factor of 1.3. Excess spoil on the bench prior to the current mining operation that is not disturbed need not be rehandled except where necessary to ensure stability of the fill; a safety berm is constructed on the solid portion of the lower bench prior to gravity transport of the excess spoil. Where there is insufficient material on the lower bench to construct a safety berm, only that amount of excess spoil necessary for the construction of the berm may be gravity transported to the lower bench prior to construction of the berm; and, excess spoil shall not be allowed on the downslope below the upper bench except on designated gravity-transport courses properly prepared by removing topsoil. Upon completion of the fill, no excess spoil shall be allowed to remain on the designated gravity-transport course between the two benches and each transport course shall be reclaimed.

### Analysis:

No modification to the spoil and waste material-handling program is necessary due to the addition of the Whitmore Lease. The spoil and waste materials program includes: Disposal of noncoal waste, Coal mine waste, Refuse piles, Impounding structures, Burning and burned waste utilization, Return of coal processing waste to abandoned underground workings, and Excess spoil.

### Findings:

Information provided in the proposal is not adequate to meet the requirements of the Operational Plan – Spoil and Waste Materials section 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, -300-148, -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.

#### Groundwater Monitoring

In order to protect the hydrologic balance underground mining activities shall be conducted according to the hydrologic reclamation plan. Ground-water quality shall be protected by handling earth materials and runoff in a manner that minimizes acidic, toxic, or other harmful infiltration to ground-water systems and by managing excavations and other disturbances to prevent or control the discharge of pollutants into the ground water.

Ground-water monitoring shall be conducted according to the ground-water monitoring plan. The Division may require

## OPERATION PLAN

---

additional monitoring when necessary. Ground-water monitoring data shall be submitted every 3 months to the Division or more frequently as prescribed by the Division. Monitoring reports shall include analytical results from each sample taken during the reporting period. When the analysis of any ground-water sample indicates noncompliance with the permit conditions, the operator shall promptly notify the Division and immediately provide for any accelerated or additional monitoring necessary to determine the nature and extent of noncompliance and the results of the noncompliance. Plans and hydrologic information to evaluate and mitigate the noncompliance situation and information relevant to the PHC shall be submitted to the Division as required.

Ground-water monitoring shall proceed through mining and continue during reclamation until bond release. The Division may modify the monitoring requirements including the parameters covered and the sampling frequency if the operator demonstrates, using the monitoring data obtained, that: the operation has minimized disturbance to the prevailing hydrologic balance in the permit and adjacent areas and prevented material damage to the hydrologic balance outside the permit area; water quantity and quality are suitable to support approved postmining land uses; or, monitoring is no longer necessary to achieve the purposes set forth in the monitoring plan.

Equipment, structures, and other devices used in conjunction with monitoring the quality and quantity of ground water onsite and offsite shall be properly installed, maintained, and operated and shall be removed by the operator when no longer needed.

### Surface Water Monitoring

In order to protect the hydrologic balance, underground mining activities shall be conducted according to the approved plan, and the following: surface-water quality shall be protected by handling earth materials, ground-water discharges, and runoff in a manner that minimizes the formation of acidic or toxic drainage; prevents, to the extent possible using the best technology currently available, additional contribution of suspended solids to streamflow outside the permit area; and otherwise prevent water pollution. If drainage control, restabilization and revegetation of disturbed areas, diversion of runoff, mulching, or other reclamation and remedial practices are not adequate to meet water-quality standards and effluent limitations, the operator shall use and maintain the necessary water-treatment facilities or water-quality controls. Surface-water quantity and flow rates shall be protected by handling earth materials and runoff in accordance with the steps outlined in the approved plan.

Surface-water monitoring shall be conducted according to the approved surface-water monitoring plan. The Division may require additional monitoring when necessary. Surface-water monitoring data shall be submitted every 3 months to the Division or more frequently as prescribed by the Division. Monitoring reports shall include analytical results from each sample taken during the reporting period. When the analysis of any surface-water sample indicates noncompliance with the permit conditions, the operator shall promptly notify the Division and immediately provide for any accelerated or additional monitoring necessary to determine the nature and extent of noncompliance and the results of the noncompliance. Plans and hydrologic information to evaluate and mitigate the noncompliance situation and information relevant to the PHC shall be submitted to the Division as required. The reporting requirements of the water monitoring plan do not exempt the operator from meeting any National Pollutant Discharge Elimination System (NPDES) reporting requirements.

Surface-water monitoring shall proceed through mining and continue during reclamation until bond release. The Division may modify the monitoring requirements, except those required by the NPDES permitting authority, including the parameters covered and sampling frequency if the operator demonstrates, using the monitoring data obtained, that: the operation has minimized disturbance to the hydrologic balance in the permit and adjacent areas and prevented material damage to the hydrologic balance outside the permit area; water quantity and quality are suitable to support approved postmining land uses; and, monitoring is no longer necessary to achieve the purposes set forth in the approved monitoring plan.

Equipment, structures, and other devices used in conjunction with monitoring the quality and quantity of surface water onsite and offsite shall be properly installed, maintained, and operated and shall be removed by the operator when no longer needed.

### Acid- and toxic-forming materials and underground development waste

Drainage from acid- and toxic-forming materials and underground development waste into surface water and ground water shall be avoided by: identifying and burying and/or treating, when necessary, materials which may adversely affect water quality, or be detrimental to vegetation or to public health and safety if not buried and/or treated; and, storing materials in a manner that will protect surface water and ground water by preventing erosion, the formation of polluted runoff, and the infiltration of polluted water.

### Discharges into an underground mine

Discharges into an underground mine are prohibited, unless specifically approved by the Division after a demonstration that the discharge will: minimize disturbance to the hydrologic balance on the permit area, prevent material damage outside the permit area and otherwise eliminate public hazards resulting from underground mining activities; not result in a violation of applicable water quality standards or effluent limitations; be at a known rate and quality which shall meet the effluent limitations for pH and total suspended solids, except that the pH and total suspended solids limitations may be exceeded, if approved by the

## OPERATION PLAN

Division; and, meet with the approval of the Mine Safety and Health Administration.

Discharges shall be limited to the following: water; coal-processing waste; fly ash from a coal-fired facility; sludge from an acid-mine-drainage treatment facility; flue-gas desulfurization sludge; inert materials used for stabilizing underground mines; and, underground mine development wastes.

Water from one underground mine may be diverted into other underground workings according to the requirements of this section.

### Gravity discharges from underground mines

Surface entries and accesses to underground workings shall be located and managed to prevent or control gravity discharge of water from the mine. The surface entries and accesses of drift mines first used after the implementation of a State, Federal, or Federal Lands Program and located in acid-producing or iron-producing coal seams shall be located in such a manner as to prevent any gravity discharge from the mine. Gravity discharges of water from an underground mine first used before the implementation of a State, Federal, or Federal Lands Program, may be allowed by the Division if it is demonstrated that the untreated or treated discharge complies with the performance standards and any additional NPDES permit requirements.

### Water-quality standards and effluent limitations

Compliance with all applicable State and Federal water quality laws and regulations and with the effluent limitations for coal mining promulgated by the U.S. Environmental Protection Agency set forth in 40 CFR Part 434.

### 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.

### Diversions: Miscellaneous flows

Diversion of miscellaneous flows, which consist of all flows except for perennial and intermittent streams, may be diverted away from disturbed areas if required or approved by the Division. Miscellaneous flows shall include ground-water discharges and ephemeral streams. The design, location, construction, maintenance, and removal of diversions of miscellaneous flows shall meet all of the general performance standards of this section. Protection against flooding and resultant damage to life and property shall

## OPERATION PLAN

---

be met when the temporary and permanent diversions for miscellaneous flows are designed so that the combination of channel, bank and flood-plain configuration is adequate to pass safely the peak runoff of a 2-year, 6-hour precipitation event for a temporary diversion and a 10-year, 6-hour precipitation event for a permanent diversion.

### 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 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

## OPERATION PLAN

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 event unless a lesser design event is 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.

### Discharge structures

Discharge from sedimentation ponds, permanent and temporary impoundments, coal processing waste dams and embankments, and diversions shall be controlled, by energy dissipators, riprap channels, and other devices, where necessary, to reduce erosion, to prevent deepening or enlargement of stream channels, and to minimize disturbance of the hydrologic balance. Discharge structures shall be designed according to standard engineering design procedures.

### Impoundments

The following requirements apply to both temporary and permanent impoundments:

- 1.) An impoundment meeting the size or other criteria of 30 CFR Sec. 77.216(a) shall comply with the requirements of 30 CFR Sec. 77.216 and this section.

## OPERATION PLAN

- 2.) The design of impoundments shall be certified as designed to meet the requirements of the regulations using current, prudent, engineering practices and any design criteria established by the Division. The qualified, registered, professional engineer or qualified, registered, professional, land surveyor shall be experienced in the design and construction of impoundments.
- 3.) An impoundment meeting the size or other criteria of 30 CFR Sec. 77.216(a) or located where failure would be expected to cause loss of life or serious property damage shall have a minimum static safety factor of 1.5 for a normal pool with steady state seepage saturation conditions, and a seismic safety factor of at least 1.2. Impoundments not meeting the size or other criteria of 30 CFR Sec. 77.216(a), except for a coal mine waste impounding structure, and located where failure would not be expected to cause loss of life or serious property damage shall have a minimum static safety factor of 1.3 for a normal pool with steady state seepage saturation conditions. For an impoundment not meeting the size or other criteria of 30 CFR Sec. 77.216(a), where failure would not be expected to cause loss of life or serious property damage, the Division may establish engineering design standards that ensure stability comparable to a 1.3 minimum static safety factor in lieu of engineering tests to establish compliance with the minimum static safety factor of 1.3.
- 4.) Impoundments shall have adequate freeboard to resist overtopping by waves and by sudden increases in storage volume.
- 5.) Foundations and abutments for an impounding structure shall be stable during all phases of construction and operation and shall be designed based on adequate and accurate information on the foundation conditions. For an impoundment meeting the size or other criteria of 30 CFR Sec. 77.216(a), foundation investigation, as well as any necessary laboratory testing of foundation material, shall be performed to determine the design requirements for foundation stability. All vegetative and organic materials shall be removed and foundations excavated and prepared to resist failure. Cutoff trenches shall be installed if necessary to ensure stability.
- 6.) Slope protection shall be provided to protect against surface erosion at the site and protect against sudden drawdown.
- 7.) Faces of embankments and surrounding areas shall be vegetated, except that faces where water is impounded may be riprapped or otherwise stabilized in accordance with accepted design practices.
- 8.) Spillways: An impoundment shall include either a combination of principal and emergency spillways, a single open-channel spillway, or, be configured as an impoundment that relies primarily on storage to control the runoff from 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. Except impoundments that rely primarily on storage to control the runoff, the required design precipitation events for an impoundment having spillways are: for an impoundment 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; and, for an impoundment 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 single open-channel spillway requirements, the Division may approve an impoundment 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 qualified registered professional land surveyor that the impoundment will safely control the design precipitation event, the water from which shall be safely removed in accordance with current, prudent, engineering practices. Such an impoundment shall be located where failure would not be expected to cause loss of life or serious property damage, except where: in the case of an impoundment meeting the size or other criteria of 30 CFR Sec. 77.216(a), it is 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 an impoundment not meeting the size or other criteria of 30 CFR Sec. 77.216(a), it is designed to control the precipitation of a 100-year 6-hour event, or greater event as specified by the Division.
- 9.) The vertical portion of any remaining highwall shall be located far enough below the low-water line along the full extent of highwall to provide adequate safety and access for the proposed water users.
- 10.) Inspections: Except as provided in paragraph (a)(10)(iv) of this section, a qualified registered professional engineer or other qualified professional specialist under the direction of a professional engineer, shall inspect each impoundment as provided in paragraph (a)(10)(i) of this section. The professional engineer or specialist shall be experienced in the construction of impoundments.

Inspections shall be made regularly during construction, upon completion of construction, and at least yearly until removal of the structure or release of the performance bond. The qualified registered professional engineer, or qualified registered professional land surveyor as applicable, shall promptly after each inspection provide to the Division a certified report that the impoundment has been constructed and/or maintained as designed and in accordance with the approved plan and this section. The report shall include discussion of any appearance of instability, structural weakness or other hazardous condition, depth and elevation of any impounded waters, existing storage capacity, any existing or required monitoring procedures and instrumentation, and any other aspects of the structure affecting stability. A copy of the report shall be retained at or near the minesite.

A qualified registered professional land surveyor may inspect any temporary or permanent impoundment that does not meet the size or other criteria of 30 CFR Sec. 77.216(a) and certify and submit the report required above, except that all coal mine waste impounding structures shall be certified by a qualified registered professional engineer. The professional land surveyor shall be experienced in the construction of impoundments. Impoundments subject to 30 CFR Sec. 77.216 must be examined in

## OPERATION PLAN

accordance with 30 CFR Sec. 77.216-3. Other impoundments shall be examined at least quarterly by a qualified person designated by the operator for appearance of structural weakness and other hazardous conditions.

If any examination or inspection discloses that a potential hazard exists, the person who examined the impoundment shall promptly inform the Division 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.

A permanent impoundment of water may be created, if authorized by the Division in the approved permit based upon the following demonstration:

- 1.) The size and configuration of such impoundment will be adequate for its intended purposes.
- 2.) The quality of impounded water will be suitable on a permanent basis for its intended use and, after reclamation, will meet applicable State and Federal water quality standards, and discharges from the impoundment will meet applicable effluent limitations and will not degrade the quality of receiving water below applicable State and Federal water quality standards.
- 3.) The water level will be sufficiently stable and be capable of supporting the intended use.
- 4.) Final grading will provide for adequate safety and access for proposed water users.
- 5.) The impoundment will not result in the diminution of the quality and quantity of water utilized by adjacent or surrounding landowners for agricultural, industrial, recreational, or domestic uses.
- 6.) The impoundment will be suitable for the approved postmining land use.

The Division may authorize the construction of temporary impoundments as part of underground mining activities.

Ponds, impoundments, banks, dams, and embankments

Each application shall include a general plan for each proposed sedimentation pond, water impoundment, and coal processing waste bank, dam, or embankment within the proposed permit area. Each general plan shall:

- 1.) 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 plans, a qualified, registered, professional land surveyor with assistance from experts in related fields such as landscape architecture;
- 2.) Contain a description, map, and cross section of the structure and its location;
- 3.) Contain preliminary hydrologic and geologic information required to assess the hydrologic impact of the structure;
- 4.) Contain a survey describing the potential effect on the structure from subsidence of the subsurface strata resulting from past underground mining operations if underground mining has occurred; and
- 5.) Contain a certification statement which includes a schedule setting forth the dates when any detailed design plans for structures that are not submitted with the general plan will be submitted to the Division. The Division shall have approved, in writing, the detailed design plan for a structure before construction of the structure begins.

Each detailed design plan for a structure that meets or exceeds the size or other criteria of the Mine Safety and Health Administration, 30 CFR Section 77.216(a) shall:

- 1.) 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;
- 2.) Include any geotechnical investigation, design, and construction requirements for the structure;
- 3.) Describe the operation and maintenance requirements for each structure; and
- 4.) Describe the timetable and plans to remove each structure, if appropriate.

Each detailed design plan for a structure that does not meet the size or other criteria of 30 CFR Section 77.216(a) shall:

- 1.) 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 covered by Sections 817.81-817.84 of this Chapter shall be certified by a qualified, registered, professional engineer;
- 2.) Include any design and construction requirements for the structure, including any required geotechnical information;
- 3.) Describe the operation and maintenance requirements for each structure; and
- 4.) Describe the timetable and plans to remove each structure, if appropriate.

Sedimentation ponds, whether temporary or permanent, shall be designed in compliance with the requirements of Siltation Structures. Any sedimentation pond or earthen structure which will remain on the proposed permit area as a permanent

## OPERATION PLAN

---

water impoundment shall also be designed to comply with the requirements for Impoundments. Each plan shall, at a minimum, comply with the requirements of the Mine Safety and Health Administration, 30 CFR Sections 77.216-1 and 77.216-2.

Permanent and temporary impoundments shall be designed to comply with the requirements for Impoundments. Each plan for an impoundment meeting the size of other criteria of the Mine Safety and Health Administration shall comply with the requirements of 30 CFR Sec. 77.216-1 and 77.216-2. The plan required to be submitted to the District Manager of MSHA under Sec. 77.216 of this title shall be submitted to the Division as part of the permit application. For an impoundment not meeting the size of other criteria of 30 CFR Sec. 77.216(a) and located where failure would not be expected to cause loss of life or serious property damage, the Division may establish through the State program approval process engineering design standards that ensure stability comparable to a 1.3 minimum static safety factor in lieu of engineering tests to establish compliance with the minimum static safety factor of 1.3.

Coal processing waste banks, dams and embankments shall be designed to comply with the requirements for Coal Mine Waste. Each plan shall comply with the requirements of the Mine Safety and Health Administration, 30 CFR Sections 77.216-1 and 77.216-2, and shall contain the results of a geotechnical investigation of the proposed dam or embankment foundation area, to determine the structural competence of the foundation which will support the proposed dam or embankment structure and the impounded material. The geotechnical investigation shall be planned and supervised by an engineer or engineering geologist, according to the following:

- 1.) The number, location, and depth of the borings and test pits shall be determined using current prudent engineering practice for the size of the dam or embankment, quantity of material to be impounded, and subsurface conditions.
- 2.) The character of the overburden and bedrock, the proposed abutment sites, and any adverse geotechnical conditions which may affect the particular dam, embankment, or reservoir site shall be considered.
- 3.) All springs, seepage, and ground-water flow observed or anticipated during wet periods in the area of the proposed dam or embankment shall be identified on each plan.
- 4.) Consideration shall be given to the possibility of mudflows, rock-debris falls, or other landslides into the dam, embankment, or impounded material.

If the structure is 20 feet or higher or impounds more than 20 acre-feet, each plan of this section shall include a stability analysis of each structure. The stability analysis shall include, but not be limited to, strength parameters, pore pressures, and long-term seepage conditions. The plan shall also contain a description of each engineering design assumption and calculation with a discussion of each alternative considered in selecting the specific design parameters and construction methods.

### Analysis:

#### General

Topics covered below are the only items that required modification or additional review from the currently approved MRP. No additional surface facilities are being constructed, and no modification to the following is anticipated; Transfer of wells, Discharges into an underground mine, Diversions, Sediment control measures, Siltation structures, Sediment ponds, Other treatment facilities, Exemptions from siltation structures, Discharge structures, Impoundments, Ponds, impoundments, Banks, Dams, and Embankments, and Casing and sealing of wells.

#### Ground-Water Monitoring

Spring S-80 (Hanging Rock Spring), located in Hanging Rock Spring Canyon, will be added to the Operational Water Monitoring Plan to further characterize the potential impacts to the area.

Page 7-22 (Wells) and Table 7-1 need clarification on the following items. Well DH86-2 is identified as collecting water level only, when in reality both field parameters and water quality analysis is conducted.

**OPERATION PLAN**

---

**Surface-Water Monitoring**

Stream sites ST-10 and ST-9, located at the upper permit boundary and the inlet of Grassy Trail Reservoir, respectively, will be added to the Operational Water Monitoring Plan to further characterize the potential impacts to Grassy Trail Creek.

Page 7-21 and Table 7-5 describe Operational Surface Water monitoring locations. Sites ST-5, ST-6A, ST-6 and ST-7 have crest gauges installed, and the channel dimensions in these locations have been surveyed. A calculated flow, based on the crest gauge measurement and channel configuration, needs to be included in the water monitoring data.

**Acid- and Toxic-Forming Materials**

Within the 1998 Mayo and Associates report, the report indicates no anticipated Acid or toxic-forming waters will be produced or discharged from the mine. This was demonstrated with the use of in-mine waters from the Sunnyside mine and various surface waters in the area. Acid mine drainage is generally not a concern based on the abundant carbonate mineral in the coal-bearing stratum and the relatively low sulfur concentration within the coal. The dissolution of carbonate minerals quickly consumes any acid produced from the oxidation of pyrite.

**Gravity Discharges**

The strike and dip of the coal seam is toward the workings and away from any and all portals. No Gravity discharges are anticipated.

**Water Quality Standards and Effluent Limitations**

No changes or modifications are necessary to the currently approved permit.

**Stream Buffer Zones**

Grassy Trail Creek is projected to be undermined in Whitmore Canyon, above Grassy Trail Reservoir. To be consistent with the current MRP (Section 731.600), address why mining can be conducted within the 100-foot stream buffer zone; citing minimal anticipated surface subsidence, possible temporary affects to water quality, etc.

**Findings:**

Information provided in the proposal is not adequate to meet the requirements of the Operational Plan – Hydrologic Information section of the regulations. Prior to final approval, the applicant must supply the following in accordance with:

**R645-301-731.200**, correctly identify the parameters being monitored at Well DH86-2, and provide calculated flow measurements at sites where crest gauges are installed.

**R645-301-7311.600**, address why mining can be conducted within the 100-foot stream buffer zone; citing minimal anticipated surface subsidence, possible temporary affects to water quality, etc.

## **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.

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, 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.

### **Analysis:**

No additional support facilities will be used in connection with the Whitmore lease. No modification to the current MRP is necessary.

### **Findings:**

Information provided in the proposal is adequate to meet the requirements of the Operational Plan – Support Facilities and Utility Installation section of the regulations.

## OPERATION PLAN

---

### 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:

No additional signs or markers will need to be placed as a result of the Whitmore lease. No modification to the current MRP is necessary.

#### Findings:

Information provided in the proposal is adequate to meet the requirements of the Operational Plan – Signs and Markers 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

## OPERATION PLAN

---

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.

### Preblasting survey

At least 30 days before initiation of blasting, the operator shall notify, in writing, all residents or owners of dwellings or other structures located within 1/2 mile of the permit area how to request a preblasting survey. A resident or owner of a dwelling or structure within 1/2 mile of any part of the permit area may request a preblasting survey. This request shall be made, in writing, directly to the operator or to the Division, who shall promptly notify the operator. The operator shall promptly conduct a preblasting survey of the dwelling or structure and promptly prepare a written report of the survey. An updated survey of any additions, modifications, or renovations shall be performed by the operator if requested by the resident or owner.

The operator shall determine the condition of the dwelling or structure and shall document any preblasting damage and other physical factors that could reasonably be affected by the blasting. Structures such as pipelines, cables, and transmission lines, and cisterns, wells, and other water systems warrant special attention; however, the assessment of these structures may be limited to surface conditions and other readily available data. The written report of the survey shall be signed by the person who conducted the survey. Copies of the report shall be promptly provided to the Division and to the person requesting the survey. If the person requesting the survey disagrees with the contents and/or recommendations contained therein, he or she may submit to both the operator and the Division a detailed description of the specific areas of disagreement. Any surveys requested more than 10 days before the planned initiation of blasting shall be completed by the operator before the initiation of blasting.

### General performance standards

The operator shall notify, in writing, residents within 1/2 mile of the blasting site and local governments of the proposed times and locations of blasting operations. Such notice of times that blasting is to be conducted may be announced weekly, but in no case less than 24 hours before blasting will occur. Unscheduled blasts may be conducted only where public or operator health and safety so require and for emergency blasting actions. When an operator conducts an unscheduled surface blast incidental to underground coal mining operations, the operator, using audible signals, shall notify residents within 1/2 mile of the blasting site and document the reason. All blasting shall be conducted between sunrise and sunset unless nighttime blasting is approved by the Division based upon a showing by the operator that the public will be protected from adverse noise and other impacts. The Division may specify more restrictive time periods for blasting.

### Blasting signs, warnings, and access control

The operator shall conspicuously place signs reading "Blasting Area" along the edge of any blasting area that comes within 100 feet of any public-road right-of-way, and at the point where any other road provides access to the blasting area and at all entrances to the permit area from public roads or highways, place conspicuous signs which state "Warning! Explosives in Use," which clearly list and describe the meaning of the audible blast warning and all-clear signals that are in use, and which explain the marking of blasting areas and charged holes awaiting firing within the permit area.

Warning and all-clear signals of different character or pattern that are audible within a range of 1/2 mile from the point of the blast shall be given. Each person within the permit area and each person who resides or regularly works within 1/2 mile of the permit area shall be notified of the meaning of the signals in the blasting notification.

Access within the blasting areas shall be controlled to prevent presence of livestock or unauthorized persons during blasting and until an authorized representative of the operator has reasonably determined that no unusual hazards, such as imminent slides or undetonated charges, exist and access to and travel within the blasting area can be safely resumed.

### Control of adverse effects

Blasting shall be conducted to prevent injury to persons, damage to public or private property outside the permit area, adverse impacts on any underground mine, and change in the course, channel, or availability of surface or ground water outside the permit area.

Airblast shall not exceed the maximum limits specified in the regulations at the location of any dwelling, public building, school, church, or community or institutional building outside the permit area. The maximum airblast and ground-vibration standards shall not apply at structures owned by the permittee and not leased to another person or at structures owned by the permittee and leased to another person, if a written waiver by the lessee is submitted to the Division before blasting.

Flyrock travelling in the air or along the ground shall not be cast from the blasting site: more than one-half the distance to the nearest dwelling or other occupied structure; beyond the area of control; or beyond the permit boundary.

---

**OPERATION PLAN**

---

In all blasting operations, except as otherwise authorized, the maximum ground vibration shall not exceed the values approved by the Division. All structures in the vicinity of the blasting area, such as water towers, pipelines and other utilities, tunnels, dams, impoundments, and underground mines shall be protected from damage by establishment of a maximum allowable limit on the ground vibration, submitted by the operator and approved by the Division before the initiation of blasting.

The maximum allowable ground vibration shall be reduced by the Division beyond the limits otherwise provided by this section, if determined necessary to provide damage protection. The Division may require an operator to conduct seismic monitoring of any or all blasts and may specify the location at which the measurements are taken and the degree of detail necessary in the measurement.

**Records of blasting operations**

The operator shall retain a record of all blasts for at least 3 years. Upon request, copies of these records shall be made available to the Division and to the public for inspection.

**Analysis:**

No surface blasting will occur as a result of the Whitmore lease. No modification to the current MRP is necessary. This includes modifications to the Preblasting survey, Performance standards, Blasting signs, warnings and access control, Control of adverse effects, and record of blasting operations.

**Findings:**

Information provided in the proposal is adequate to meet the requirements of the Operational Plan – Use of Explosives 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.

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

## OPERATION PLAN

---

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

The affected area is considered by the Division to be the same as the permit boundary. The permit boundary is shown on several maps including Map 1-1.

### Mining Facilities Maps

The surface mine facilities maps will not change as a result of the Whitmore lease.

### Mine Workings Maps

Map 5-4A and Map 5-4B show the existing and proposed mine workings for the Whitmore lease and possible additional leases.

OPERATION PLAN

---

**Monitoring and Sample Location Maps**

No additional exploration drill hole information has been submitted with this application. Additional surface and water ground water monitoring sites have been added to the monitoring plan and are included in Map 7-7 (Operational Monitoring Locations). No other modifications are necessary.

**Findings:**

Information provided in the proposal is adequate to meet the requirements of the Operational Plan – Map, Plans and Cross Sections of Mining Operations section of the regulations.

RECLAMATION PLAN

## RECLAMATION PLAN

### GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

#### Minimum Regulatory Requirements:

Provide a plan for the reclamation of the lands within the proposed permit area, showing how the applicant will comply with the regulatory program and the environmental protection performance standards. The plan shall include, at a minimum, contain the following information for the proposed permit area: a detailed timetable for the completion of each major step in the reclamation plan; a detailed estimate of the cost of the reclamation of the proposed operations required to be covered by a performance bond, with supporting calculations for the estimates; a plan for backfilling, soil stabilization, compacting, and grading, with contour maps or cross sections that show the anticipated final surface configuration of the proposed permit area; a plan for redistribution of topsoil, subsoil, and other material along with a demonstration of the suitability of topsoil substitutes or supplements shall be based upon analysis of the thickness of soil horizons, total depth, texture, percent coarse fragments, pH, and areal extent of the different kinds of soils; other chemical and physical analyses, field-site trials, or greenhouse tests if determined to be necessary or desirable to demonstrate the suitability of the topsoil substitutes or supplements may also be required; a plan for revegetation including, but not limited to, descriptions of the schedule of revegetation, species and amounts per acre of seeds and seedlings to be used, methods to be used in planting and seeding, mulching techniques, irrigation, if appropriate, and pest and disease control measures, if any, measures proposed to be used to determine the success of revegetation, and, a soil testing plan for evaluation of the results of topsoil handling and reclamation procedures related to revegetation; a description of the measures to be used to maximize the use and conservation of the coal resource; a description of measures to be employed to ensure that all debris, acid-forming and toxic-forming materials, and materials constituting a fire hazard are disposed of accordingly and a description of the contingency plans which have been developed to preclude sustained combustion of such materials; a description, including appropriate cross sections and maps, of the measures to be used to seal or manage mine openings, and to plug, case, or manage exploration holes, other bore holes, wells, and other openings within the proposed permit area; and, a description of steps to be taken to comply with the requirements of the Clean Air Act, the Clean Water Act, and other applicable air and water quality laws and regulations and health and safety standards.

#### Analysis:

The applicant has proposed no changes to the postmining land uses, and the proposed mining activity should have no effect on these uses.

#### Findings:

Information in the application is adequate to meet the requirements of the Reclamation Plan – Postmining Land Uses section of the regulations.

### PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES

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

## RECLAMATION PLAN

---

### Minimum Regulatory Requirements:

Where wetlands and habitats of unusually high value for fish and wildlife occur, the operator conducting underground mining activities shall provide a description of the measures taken to avoid disturbances to, enhance where practicable, restore, or replace, wetlands and riparian vegetation along rivers and streams and bordering ponds and lakes. Designs and plans for underground mining activities shall include measures to avoid disturbances to, enhance where practicable, or restore habitats of unusually high value for fish and wildlife.

Where fish and wildlife habitat is to be a postmining land use, the plant species to be used on reclaimed areas shall be selected on the basis of the following criteria:

- 1.) Their proven nutritional value for fish or wildlife.
- 2.) Their use as cover for fish or wildlife.
- 3.) Their ability to support and enhance fish or wildlife habitat after the release of performance bonds. The selected plants shall be grouped and distributed in a manner which optimizes edge effect, cover, and other benefits to fish and wildlife.

Where cropland is to be the postmining land use, and where appropriate for wildlife- and crop-management practices, the operator shall intersperse the fields with trees, hedges, or fence rows throughout the harvested area to break up large blocks of monoculture and to diversify habitat types for birds and other animals.

Where residential, public service, or industrial uses are to be the postmining land use and where consistent with the approved postmining land use, the operator shall intersperse reclaimed lands with greenbelts utilizing species of grass, shrubs, and trees useful as food and cover for wildlife.

### Analysis:

The applicant has proposed no additional surface disturbing activities; therefore, no additional measures to protect wildlife and improvement to wildlife habitat during reclamation are needed.

### Findings:

Information in the application is adequate to meet the requirements of the Reclamation Plan – Protection of Fish, Wildlife, and Related Environmental Values section of the regulations.

## 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).

## RECLAMATION PLAN

- 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:

Since no additional surface area will be disturbed in the Whitmore lease, no modification to the currently approved MRP is necessary.

### Findings:

Information in the application is adequate to meet the requirements of the Reclamation Plan – Approximate Original Contour section of the regulations.

## 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.

## RECLAMATION PLAN

---

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

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

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

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

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

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

### Previously mined areas

Remining operations on previously mined areas that contain a preexisting highwall shall comply with all other reclamation requirements except as provided herein. The requirement that elimination of highwalls shall not apply to remining operations where the volume of all reasonably available spoil is demonstrated in writing to the Division to be insufficient to completely backfill the reaffected or enlarged highwall. The highwall shall be eliminated to the maximum extent technically practical in accordance with the following criteria:

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

### Backfilling and grading on steep slopes

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

## RECLAMATION PLAN

### Special provisions for steep slope mining

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

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

### Analysis:

Since no additional surface area will be disturbed in the Whitmore lease, no modification to the currently approved MRP is necessary. This includes no changes to Previously mined areas, Steep slopes, and Special Provisions for Steep slope mining.

### Findings:

Information in the application is adequate to meet the requirements of the Reclamation Plan – Backfilling and Grading section of the regulations.

## 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:**

Since no additional mine openings will be created with the addition of the Whitmore lease, no modification to the current MRP is necessary.

**Findings:**

Information in the application is adequate to meet the requirements of the Reclamation Plan – Backfilling and Grading 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**

Since no additional surface area will be disturbed in the Whitmore lease, no modification to the Redistribution of Topsoil and Subsoil section of the currently approved MRP is necessary.

**RECLAMATION PLAN**

---

**Findings:**

Information in the application is adequate to meet the requirements of the Reclamation Plan – Topsoil and Subsoil section of the regulations.

**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:**

No additional roads will be built or changes to their reclamation plans will occur because of the Whitmore lease. No modifications to the current MRP are necessary.

**Findings:**

Information in the application is adequate to meet the requirements of the Reclamation Plan – Road Systems and Other Transportation Facilities section of the regulations.

**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

## RECLAMATION PLAN

---

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

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

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

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

### **Analysis:**

#### **General**

No additional surface facilities are being constructed, and no modification to the disturbed area impacts is anticipated. No modifications are necessary to the Reclamation Plan – Hydrologic Information based on the current proposal of adding Federal Lease UTU-78562. Portions of the Hydrologic Reclamation Plan that do not require revision include; Acid and toxic-forming materials, Transfer of wells, Discharges into an underground mine, Gravity discharges, Water quality standards and effluent limitations, Diversions, Sediment control measures, Siltation structures, Sedimentation ponds, Other treatment facilities, Exemptions for siltation structures, Discharge structures, Impoundments, Ponds, banks, dams and embankments, and casing and sealing of wells.

#### **Ground-Water Monitoring**

The only modification of the Ground-water monitoring plan includes the monitoring of Spring S-80, located at Hanging Rock Spring, through reclamation and bond release.

#### **Surface-Water Monitoring**

The only modification of the Surface-water monitoring plan includes the monitoring of Stream sites ST-9 and ST-10, located on Grassy Trail Creek, through reclamation and bond release.

#### **Stream Buffer Zones**

The Applicant makes a written commitment in Section R645-301-541 to reclaim any impacts from mining in accordance with the approved permit. Impacts will mitigated as soon as

**RECLAMATION PLAN**

possible upon their discovery.

**Findings:**

Information provided in the proposal is adequate to meet the requirements of the Reclamation Plan – Hydrologic Information section of the regulations.

**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: Timing

Disturbed areas shall be planted during the first normal period for favorable planting conditions after replacement of the plant-growth medium. The normal period for favorable planting is that planting time generally accepted locally for the type of plant materials selected.

Revegetation: Mulching and other soil stabilizing practices

Suitable mulch and other soil stabilizing practices shall be used on all areas that have been regraded and covered by topsoil or topsoil substitutes. The Division may waive this requirement if seasonal, soil, or slope factors result in a condition where mulch and other soil stabilizing practices are not necessary to control erosion and to promptly establish an effective vegetative cover.

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. 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

RECLAMATION PLAN

---

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:

The Applicant has proposed no changes in the revegetation plan due to the addition of Federal Lease UTU-78562. No new surface disturbance is anticipated which would require modification to the currently approved plan.

**RECLAMATION PLAN**

---

**Findings:**

Information in the application is adequate to meet the requirements of the Reclamation Plan - Revegetation section of the regulations.

**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:**

There are no additional surface disturbances associated with the current proposal that would require a modification to the currently approved MRP.

**Findings:**

Information in the application is adequate to meet the requirements of the Reclamation Plan – Stabilization of Surface Areas section of the regulations.

**CESSATION OF OPERATIONS**

Regulatory Reference: 30 CFR 817.131, 817.132; R645-301-515, -301-541.

**Minimum Regulatory Requirements:**

Each person who conducts mining activities shall effectively support and maintain all surface access openings to underground operations, and secure surface facilities in areas in which there are no current operations, but operations are to be resumed under an approved permit. Temporary abandonment shall not relieve a person of his or her obligation to comply with any provisions of the approved permit.

Before temporary cessation of mining and reclamation operations for a period of 30 days or more, or as soon as it is known that a temporary cessation will extend beyond 30 days, each person who conducts underground mining activities shall submit to the Division a notice of intention to cease or abandon operations. This notice shall include a statement of the exact number of surface acres and the horizontal and vertical extent of subsurface strata which have been in the permit area prior to cessation or abandonment, the extent and kind of surface area reclamation which will have been accomplished, and identification of the backfilling, regrading, revegetation, environmental monitoring, underground opening closures, and water-treatment activities that will continue during the temporary cessation.

The person who conducts underground mining activities shall close or backfill or otherwise permanently reclaim all affected areas, in accordance with this Chapter and according to the permit approved by the Division.

## RECLAMATION PLAN

---

All surface equipment, structures, or other facilities not required for continued underground mining activities and monitoring, unless approved as suitable for the postmining land use or environmental monitoring, shall be removed and the affected lands reclaimed.

### **Analysis:**

No modification to the Cessation of Operations section of the current MRP is necessary due to the addition of Federal Lease UTU-78562.

### **Findings:**

Information in the application is adequate to meet the requirements of the Reclamation Plan – Cessation of Operations section 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 PLAN

---

Reclamation facilities maps

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

Final surface configuration maps

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

Reclamation monitoring and sampling location maps

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

Reclamation surface and subsurface manmade features maps

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

Reclamation treatments maps

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

Certification Requirements.

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

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

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

**Analysis:**

No additional roads will be built or changes to the reclamation plan will occur because of the addition of Federal Lease UTU-78562. This includes no Reclamation changes to the following maps; Affected area boundary maps, Bonded area map, Reclamation backfilling and grading maps, Reclamation facilities map, Final surface configuration map, Reclamation monitoring and sampling location map, Reclamation surface and subsurface manmade features map, and Reclamation treatments map.

**Findings:**

Information in the application is adequate to meet the requirements of the Reclamation Plan – Maps, Plans, and Cross Sections of Reclamation Operations section of the regulations.

## **BONDING AND INSURANCE REQUIREMENTS**

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

Minimum Regulatory Requirements:

General

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

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

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

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

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

Form of bond

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

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

With the approval of the Division, a bond may be posted and approved to guarantee specific phases of reclamation within

**RECLAMATION PLAN**

---

the permit area provided the sum of phase bonds posted equals or exceeds the total amount required. The scope of work to be guaranteed and the liability assumed under each phase bond shall be specified in detail.

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

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

**Determination of bond amount**

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

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

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

**Terms and conditions for liability insurance**

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

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

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

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

**Analysis:**

**Determination of Bond Amount**

Since no new surface facilities will be built as a result of the addition of the Whitmore lease the bond amount will not change for the Whitmore lease addition.

**Findings:**

Information in the application is adequate to meet the requirements of the Reclamation Plan – Bonding and Insurance Requirements section of the regulations.

# REQUIREMENTS FOR PERMITS FOR SPECIAL CATEGORIES OF MINING

## EXPERIMENTAL PRACTICES MINING

Regulatory Reference: 30 CFR 785.13; R645-302-210, -302-211, -302-212, -302-213, -302-214, -302-215, -302-216, -302-217, -302-218.

### Minimum Regulatory Requirements

No application for an experimental practice under this section shall be approved until the Division first finds in writing and the Director then concurs that:

- 1.) The experimental practice encourages advances in mining and reclamation technology or allows a postmining land use for industrial, commercial, residential, or public use (including recreational facilities) on an experimental basis;
- 2.) The experimental practice is potentially more, or at least as, environmentally protective, during and after mining operations, as would otherwise be required by the regulatory standards;
- 3.) The mining operations approved for a particular land use or other purpose are not larger or more numerous than necessary to determine the effectiveness and economic feasibility of the experimental practice; and
- 4.) The experimental practice does not reduce the protection afforded public health and safety below that provided by the regulatory standards.

Experimental practices granting variances from the special environmental protection performance standards applicable to prime farmland shall be approved only after consultation with the U.S. Department of Agriculture, Soil Conservation Service.

Each person undertaking an experimental practice shall conduct the periodic monitoring, recording, and reporting program set forth in the application, and shall satisfy such additional requirements as the Division or the Director may impose to ensure protection of the public health and safety and the environment.

Each experimental practice shall be reviewed by the Division at a frequency set forth in the approved permit, but no less frequently than every 2 1/2 years. After review, the Division may require such reasonable modifications of the experimental practice as are necessary to ensure that the activities fully protect the environment and the public health and safety. Copies of the decision of the Division shall be sent to the permittee and shall be subject to the provisions for administrative and judicial review.

Revisions or modifications to an experimental practice shall be processed in accordance with the regulatory requirements for revisions or modifications and approved by the Division. Any revisions which propose significant alterations in the experimental practice shall, at a minimum, be subject to notice, hearing, and public participation and concurrence by the Director. Revisions that do not propose significant alterations in the experimental practice shall not require concurrence by the Director.

### Analysis:

The applicant has an approved experimental practice, but the proposal should have no effect on this portion of the operation.

### Findings:

Information in the application is adequate to meet the requirements of the Reclamation Plan – Experimental Practices Mining section of the regulations

## PRIME FARMLAND

Regulatory Reference: 30 CFR 785.16, 823; R645-301-221, -302-300 et seq.

### Minimum Regulatory Requirements:

All permit applications, whether or not prime farmland is present, shall include the results of a reconnaissance inspection of the proposed permit area to indicate whether prime farmland exists. The Division in consultation with the U.S. Soil Conservation Service shall determine the nature and extent of the required reconnaissance inspection.

If the reconnaissance inspection indicates that land within the proposed permit area may be prime farmland historically used for croplands, the applicant shall determine if a soil survey exists for those lands and whether soil mapping units in the permit area have been designated as prime farmland. If no soil survey exists, the applicant shall have a soil survey made of the lands within the permit area which the reconnaissance inspection indicates could be prime farmland. Soil surveys of the detail used by the U.S. Soil Conservation Service for operational conservation planning shall be used to identify and locate prime farmland soils.

If the soil survey indicates that prime farmland soils are present within the proposed permit area, the following shall apply:

### Prime Farmland Application contents.

All permit applications for areas in which prime farmland has been identified within the proposed permit area shall include the following:

- 1.) A soil survey of the permit area according to the standards of the National Cooperative Soil Survey and in accordance with the procedures set forth in U.S. Department of Agriculture Handbook 436 "Soil Taxonomy" (U.S. Soil Conservation Service, 1975) as amended on March 22, 1982, and October 5, 1982, and 18, "Soil Survey Manual" (U.S. Soil Conservation Service, 1951), as amended on December 18, 1979, May 7, 1980, May 9, 1980, September 11, 1980, June 9, 1981, June 29, 1981, and November 16, 1982. The U.S. Soil Conservation Service establishes the standards of the National Cooperative Soil Survey and maintains a National Soils Handbook which gives current acceptable procedures for conducting soil surveys. This National Soils Handbook is available for review at area and State SCS offices.
  - (i) U.S. Department of Agriculture Handbooks 436 and 18 are incorporated by reference as they exist on the date of adoption of this section. Notices of changes made to these publications will be periodically published by OSM in the Federal Register. The handbooks are on file and available for inspection at the OSM Central Office, U.S. Department of the Interior, 1951 Constitution Avenue, NW., Washington, D.C., at each OSM Technical Center and Field Office, and at the central office of the applicable State Division, if any. Copies of these documents are also available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, Stock Nos. 001-000-02597-0 and 001-000-00688-6, respectively. In addition, these documents are available for inspection at the national, State, and area offices of the Soil Conservation Service, U.S. Department of Agriculture, and that the Federal Register library, 1100 L Street, NW., Washington, D.C. Incorporation by reference provisions were approved by the Director of the Federal Register on June 29, 1981.
  - (ii) The soil survey shall include a description of soil mapping units and a representative soil profile as determined by the U.S. Soil Conservation Service, including, but not limited to, soil-horizon depths, pH, and the range of soil densities for each prime farmland soil unit within the permit area. Other representative soil-profile descriptions from the locality, prepared according to the standards of the National Cooperative Soil Survey, may be used if their use is approved by the State Conservationist, U.S. Soil Conservation Service. The Division may request the operator to provide information on other physical and chemical soil properties as needed to make a determination that the operator has the technological capability to restore the prime farmland within the permit area to the soil-reconstruction standards of this section.
- 2.) A plan for soil reconstruction, replacement, and stabilization for the purpose of establishing the technological capability of the mine operator to comply with the requirements of this section.
- 3.) Scientific data, such as agricultural-school studies, for areas with comparable soils, climate, and management that demonstrate that the proposed method of reclamation, including the use of soil mixtures or substitutes, if any, will achieve, within a reasonable time, levels of yield equivalent to, or higher than, those of nonmined prime farmland in the surrounding area.
- 4.) The productivity prior to mining, including the average yield of food, fiber, forage, or wood products obtained under a high level of management.

---

**SPECIAL CATEGORIES OF MINING**

---

**Consultation with Secretary of Agriculture.**

The Secretary of Agriculture has responsibilities with respect to prime farmland soils and has assigned the prime farmland responsibilities arising under the Act to the Chief of the U.S. Soil Conservation Service. The U.S. Soil Conservation Service shall carry out consultation and review through the State Conservationist located in each State.

The State Conservationist shall provide to the Division a list of prime farmland soils, their location, physical and chemical characteristics, crop yields, and associated data necessary to support adequate prime farmland soil descriptions. The State Conservationist shall assist the Division in describing the nature and extent of the reconnaissance inspection required in this section.

Before any permit is used for areas that include prime farmland, the Division shall consult with the State Conservationist. The State Conservationist shall provide for the review of, and comment on, the proposed method of soil reconstruction in the plan submitted. If the State Conservationist considers those methods to be inadequate, he or she shall suggest revisions to the Division which result in more complete and adequate reconstruction.

**Issuance of permit.**

A permit for the mining and reclamation of prime farmland may be granted by the Division, if it first finds, in writing, upon the basis of a complete application, that:

- 1.) The approved proposed postmining land use of these prime farmlands will be cropland;
- 2.) The permit incorporates as specific conditions the contents of the plan after consideration of any revisions to that plan suggested by the State Conservationist;
- 3.) The applicant has the technological capability to restore the prime farmland, within a reasonable time, to equivalent or higher levels of yield as nonmined prime farmland in the surrounding area under equivalent levels of management; and
- 4.) The proposed operations will be conducted in compliance with the requirements of this section and other environmental protection performance and reclamation standards for mining and reclamation of prime farmland of the regulatory program.
- 5.) The aggregate total prime farmland acreage shall not be decreased from that which existed prior to mining. Water bodies, if any, to be constructed during mining and reclamation operations must be located within the post-reclamation non-prime farmland portions of the permit area. The creation of any such water bodies must be approved by the Division and the consent of all affected property owners within the permit area must be obtained.

**Soil removal and stockpiling**

Prime farmland soils shall be removed from the areas to be disturbed before drilling, blasting, or mining. The minimum depth of soil and soil materials to be removed and stored for use in the reconstruction of prime farmland shall be sufficient to meet the requirements specified for soil replacement. Soil removal and stockpiling operations on prime farmland shall be conducted to:

- 1.) Separately remove the topsoil, or remove other suitable soil materials where such other soil materials will create a final soil having a greater productive capacity than that which exist prior to mining. If not utilized immediately, this material shall be placed in stockpiles separate from the spoil and all other excavated materials; and
- 2.) Separately remove the B or C soil horizon or other suitable soil material to provide the thickness of suitable soil required, except as approved by the Division where the B or C soil horizons would not otherwise be removed and where soil capabilities can be retained. If not utilized immediately, each horizon or other material shall be stockpiled separately from the spoil and all other excavated materials. Where combinations of such soil materials created by mixing have been shown to be equally or more favorable for plant growth than the B horizon, separate handling is not necessary.

Stockpiles shall be placed within the permit area where they will not be disturbed or be subject to excessive erosion. If left in place for more than 30 days, stockpiles shall meet the requirements subject to stockpiling and storage of topsoil and subsoil materials.

**Soil replacement**

Soil reconstruction specifications established by the U.S. Soil Conservation Service shall be based upon the standards of the National Cooperative Soil Survey and shall include, as a minimum, physical and chemical characteristics of reconstructed soils and soil descriptions containing soil-horizon depths, soil densities, soil pH, and other specifications such that reconstructed soils will have the capability of achieving levels of yield equal to, or higher than, those of nonmined prime farmland in the surrounding area.

The minimum depth of soil and substitute soil material to be reconstructed shall be 48 inches, or a lesser depth equal to

**SPECIAL CATAGORIES OF MINING**

---

the depth to a subsurface horizon in the natural soil that inhibits or prevents root penetration, or a greater depth if determined necessary to restore the original soil productive capacity. Soil horizons shall be considered as inhibiting or preventing root penetration if their physical or chemical properties or water-supplying capacities cause them to restrict or prevent penetration by roots of plants common to the vicinity of the permit area and if these properties or capacities have little or no beneficial effect on soil productive capacity.

The operator shall replace and regrade the soil horizons or other root-zone material with proper compaction and uniform depth. The operator shall replace the B horizon, C horizon, or other suitable material specified to the thickness needed to meet the requirements of this section. In those areas where the B or C horizons were not removed but may have been compacted or otherwise damaged during the mining operation, the operator shall engage in deep tilling or other appropriate means to restore pre-mining capabilities.

The operator shall replace the topsoil or other suitable soil materials specified as the final surface soil layer. This surface soil layer shall equal or exceed the thickness of the original surface soil layer, as determined by the soil survey.

**Revegetation and restoration of soil productivity**

Following prime farmland soil replacement, the soil surface shall be stabilized with a vegetative cover or other means that effectively controls soil loss by wind and water erosion.

Prime farmland soil productivity shall be restored in accordance with the following provisions:

- 1.) Measurement of soil productivity shall be initiated within 10 years after completion of soil replacement.
- 2.) Soil productivity shall be measured on a representative sample or on all of the mined and reclaimed prime farmland area using the reference crop determined under this section. A statistically valid sampling technique at a 90-percent or greater statistical confidence level shall be used as approved by the Division in consultation with the U.S. Soil Conservation Service.
- 3.) The measurement period for determining average annual crop production (yield) shall be a minimum of 3 crop years prior to release of the operator's performance bond.
- 4.) The level of management applied during the measurement period shall be the same as the level of management used on nonmined prime farmland in the surrounding area.
- 5.) Restoration of soil productivity shall be considered achieved when the average yield during the measurement period equals or exceeds the average yield of the reference crop established for the same period for nonmined soils of the same or similar texture or slope phase of the soil series in the surrounding area under equivalent management practices.
- 6.) The reference crop on which restoration of soil productivity is proven shall be selected from the crops most commonly produced on the surrounding prime farmland. Where row crops are the dominant crops grown on prime farmland in the area, the row crop requiring the great rooting depth shall be chosen as one of the reference crops.
- 7.) Reference crop yields for a given crop season are to be determined from the current yield records of representative local farms in the surrounding area, with concurrence by the U.S. Soil Conservation Service, or, the average county yields recognized by the U.S. Department of Agriculture, which have been adjusted by the U.S. Soil Conservation Service for local yield variation within the county that is associated with differences between nonmined prime farmland soil and all other soils that produce the reference crop.
- 8.) Under either procedure, the average reference crop yield may be adjusted, with the concurrence of the U.S. Soil Conservation Service, for disease, pest, and weather-induced seasonal variations, or, differences in specific management practices where the overall management practices of the crops being compared are equivalent.

**Analysis:**

A Prime Farmland determination was conducted for current surface disturbance areas in the current MRP. No modifications are necessary because no additional surface disturbance is anticipated with the addition of Federal Lease UTU-78562.

**Findings:**

Information in the application is adequate to meet the requirements of the Reclamation Plan – Prime Farmland section of the regulations.

**SPECIAL CATEGORIES OF MINING**

## **OPERATIONS IN ALLUVIAL VALLEY FLOORS**

Regulatory Reference: 30 CFR 822; R645-302-324.

### **Minimum Regulatory Requirements:**

This part sets forth additional requirements for surface coal mining and reclamation operations on or which affect alluvial valley floors in the arid and semiarid regions of the country.

### **Essential hydrologic functions**

The operator of a surface coal mining and reclamation operation shall minimize disturbances to the hydrologic balance by preserving throughout the mining and reclamation process the essential hydrologic functions of an alluvial valley floor not within the permit area. The operator of a surface coal mining and reclamation operation shall minimize disturbances to the hydrologic balance within the permit area by reestablishing throughout the mining and reclamation process the essential hydrologic functions of alluvial valley floors.

### **Protection of agricultural activities**

Surface coal mining and reclamation operations shall not: interrupt, discontinue, or preclude farming on alluvial valley floors; or, cause material damage to the quantity or quality of water in surface or underground water systems that supply alluvial valley floors.

The prohibitions of this section shall not apply:

- 1.) Where the premining land use of an alluvial valley floor is undeveloped rangeland which is not significant to farming;
- 2.) Where farming on the alluvial valley floor that would be affected by the surface coal mining operation is of such small acreage as to be of negligible impact on the farm's agricultural production;
- 3.) To any surface coal mining and reclamation operation that, in the year preceding August 3, 1977--
  - (i) Produced coal in commercial quantities and was located within or adjacent to an alluvial valley floor; or
  - (ii) Obtained specific permit approval by the State Division to conduct surface coal mining and reclamation operations within an alluvial valley floor; or
- 4.) To any land that is the subject of an application for renewal or revision of a permit issued pursuant to the Act which is an extension of the original permit, insofar as:
  - (i) The land was previously identified in a reclamation plan, and
  - (ii) The original permit area was excluded from the protection for reason set forth in this section.

### **Monitoring**

A monitoring system shall be installed, maintained, and operated by the permittee on all alluvial valley floors during surface coal mining and reclamation operations and continued until all bonds are released. The monitoring system shall provide sufficient information to allow the Division to determine that:

- 1.) The essential hydrologic functions of alluvial valley floors are being preserved outside the permit area or reestablished within the permit area throughout the mining and reclamation process;
- 2.) Farming on lands protected under this section is not being interrupted, discontinued, or precluded; and
- 3.) The operation is not causing material damage to the quantity or quality of water in the surface or underground systems that supply alluvial valley floors.

Monitoring shall be conducted at adequate frequencies to indicate long-term trends that could affect compliance with this section. All monitoring data collected and analyses thereof shall routinely be made available to the Division.

**Analysis:**

**Essential Hydrologic Functions**

It is highly unlikely mining will result in permanent damage to the Essential Hydrologic Functions of surface or groundwater discharge rates in the area surrounding Grassy Trail Creek. No surface disturbance will take place. Any detrimental affects caused by subsidence should only have a temporary localized effect on sediment yield due to the nature of steep mountain streams flowing on alluvial or soft bedrock sediments. Additional monitoring and Protection of Agricultural activities is not anticipated.

**Findings:**

Information provided in the proposal is adequate to meet the requirements of the Reclamation Plan – Operations in Alluvial Valley Floors section of the regulations.

## CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT

Regulatory Reference: 30 CFR 784.14; R645-301-730.

### Minimum Regulatory Requirements:

The Division must provide an assessment of the probable cumulative hydrologic impacts (CHIA) of the proposed operation and all anticipated mining upon surface- and ground-water systems in the cumulative impact area. The CHIA shall be sufficient to determine, for purposes of permit approval, whether the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area. The Division may allow the applicant to submit data and analyses relevant to the CHIA with the permit application. An application for a permit revision shall be reviewed by the Division to determine whether a new or updated CHIA shall be required.

The Division has provided an assessment of the probable cumulative hydrologic impacts (CHIA) of the proposed operation, and all anticipated mining, upon surface- and ground-water systems in the cumulative impact area. The CHIA is sufficient to determine, for purposes of permit approval, whether the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area. The Division used data and analyses from several sources, including those submitted by the Permittee in the original West Ridge permit and information gathered at the Sunnyside Mines.



## RULES INDEX

30 CFR.....	5
· 701.5.....	23
701.5.....	46, 73
773.13.....	8
773.17.....	51
773.22.....	5
774.13.....	51
777.15.....	9
777.17.....	9
778.13.....	5
778.15.....	6
778.16.....	7
778.17.....	8
778.21.....	8
779.12(a).....	7
779.24(a)(b)(c).....	7
783.....	11
783.12.....	11, 12
783.18.....	12
783.19.....	13
783.21.....	17
783.22.....	17
783.24.....	26
783.25.....	26
784.11.....	33
784.12.....	33
784.13.....	67
784.14.....	23, 51, 67, 73, 89
784.15.....	67, 68
784.16.....	51, 67
784.17.....	34, 67
784.18.....	35, 67
784.19.....	46, 67
784.2.....	33
784.20.....	36, 67
784.21.....	14, 39, 67
784.22.....	22, 67
784.23.....	63, 67, 78
784.24.....	44, 67, 73
784.25.....	46, 67
784.26.....	35, 67
784.29.....	51, 73

784.30.....	60
785.13.....	83
785.15.....	69
785.16.....	20, 68, 84
785.18.....	75
785.19.....	18
800.....	80
817.102.....	68, 69
817.107.....	68, 69
817.11.....	61
817.111.....	75
817.113.....	75
817.114.....	75
817.116.....	75
817.121.....	36
817.122.....	36
817.13.....	71
817.131.....	77
817.132.....	77
817.133.....	68
817.14.....	71
817.15.....	71
817.150.....	44, 73
817.151.....	44, 73
817.180.....	60
817.181.....	60
817.200(c).....	17
817.22.....	72
817.22.....	17, 42
817.41.....	51, 73
817.42.....	51, 73
817.43.....	51, 73
817.45.....	51, 73
817.49.....	51, 73
817.56.....	51, 73
817.57.....	51, 73
817.59.....	35
817.61.....	61
817.62.....	61
817.64.....	61
817.66.....	61
817.67.....	61
817.68.....	61
817.71.....	46
817.72.....	46
817.73.....	46

817.74.....	46
817.81.....	46
817.83.....	46
817.84.....	46
817.87.....	46
817.89.....	46
817.95.....	35, 77
817.97.....	39, 67
817.99.....	39
822.....	18, 87
823.....	17, 20, 84
<b>R645-</b>	
100-200 .....	23, 46, 73
300-120 .....	8
300-121.120 .....	7
300-140 .....	51
300-141 .....	7, 51
300-142 .....	51
300-143 .....	51
300-144 .....	51
300-145 .....	51
300-146 .....	51
300-147 .....	51
300-148 .....	51
301-112 .....	5
301-112.800 .....	7
301-114 .....	6
301-115 .....	7
301-116 .....	8
301-117.200 .....	8
301-118 .....	9
301-150 .....	9
301-210 .....	46
301-211 .....	46
301-212 .....	46
301-220 .....	17
301-221 .....	20, 84
301-230 .....	42
301-231 .....	33, 67
301-233 .....	67
301-234 .....	68, 69
301-240 .....	72
301-244 .....	35, 75, 77
301-270 .....	68
301-271 .....	68

301-320 .....	13
301-322 .....	14, 39, 67
301-323 .....	26, 67, 78
301-330 .....	43
301-331 .....	43, 67
301-332 .....	43
301-333 .....	39, 67
301-341 .....	67
301-342 .....	39, 67
301-353 .....	75
301-354 .....	75
301-355 .....	75
301-356 .....	75
301-358 .....	39, 67
301-411 .....	11, 12, 17, 26, 34, 67
301-412 .....	46, 67, 68
301-413 .....	68
301-422 .....	67
301-512 .....	46, 51, 63, 67, 68, 73, 78
301-513 .....	46, 67, 71, 73
301-514 .....	46, 51, 73
301-515 .....	39, 73, 77
301-521 .....	11, 26, 35, 36, 44, 46, 51, 61, 63, 67, 73, 78
301-522 .....	35, 67
301-524 .....	61
301-525 .....	36, 67
301-526 .....	33, 35, 46, 60, 67
301-527 .....	44, 67, 73
301-528 .....	33, 46, 67
301-529 .....	67, 71
301-531 .....	51, 67, 68
301-532 .....	51, 73
301-533 .....	51, 67, 68, 73
301-534 .....	44, 67, 73
301-535 .....	46
301-536 .....	46, 51, 67, 68
301-537 .....	67, 69, 73
301-541 .....	77
301-542 .....	46, 51, 63, 67, 68, 73, 78
301-551 .....	71
301-552 .....	69
301-553 .....	46, 68, 69
301-622 .....	26
301-623 .....	22, 67
301-624 .....	67
301-625 .....	67

301-626 .....	67
301-631 .....	67, 71
301-632 .....	63, 67, 78
301-720 .....	51
301-721 .....	11
301-722 .....	26
301-723 .....	67, 73
301-724 .....	12, 22, 23, 36, 67, 73
301-725 .....	67, 73
301-726 .....	67, 73
301-728 .....	67, 73
301-729 .....	67, 73
301-730 .....	89
301-731 .....	26, 51, 63, 67, 68, 73, 78
301-732 .....	44, 51, 67, 68, 73
301-733 .....	51, 67, 68, 73
301-742 .....	51, 73
301-743 .....	51, 73
301-745 .....	46
301-746 .....	46, 67
301-747 .....	46
301-748 .....	71
301-750 .....	51, 73
301-751 .....	73
301-760 .....	73
301-761 .....	51, 73
301-764 .....	51, 67, 68
301-765 .....	71
301-800 .....	80
301-830 .....	67
302-210 .....	83
302-211 .....	83
302-212 .....	83
302-213 .....	83
302-214 .....	83
302-215 .....	83
302-216 .....	83
302-217 .....	83
302-218 .....	83
302-230 .....	69
302-231 .....	69
302-232 .....	69
302-233 .....	69
302-270 .....	20
302-280 .....	75

302-281 .....	75
302-282 .....	75
302-283 .....	75
302-284 .....	75
302-300 .....	84
302-320 .....	18
302-323 .....	63
302-324 .....	87

O:\TA'S\Formatted TA's\TA\_mrr.doc