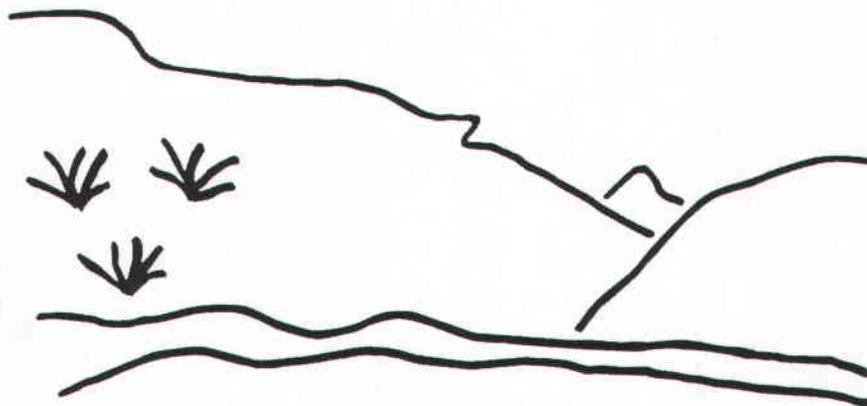


State of Utah



Utah Oil Gas and Mining

Coal Regulatory Program

SUFCO Mine
Link Canyon Portal
C/041/002-AM02E
Technical Analysis
July 18, 2002

File in:

Confidential

Shelf

Expandable

Refer to Record No. 0012 Date 07/18/2002
In C 04/0002 2002 Outgoing
For additional information



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

COPY

OK

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July 18, 2002

Ken May, General Manager
Canyon Fuel Company, LLC
397 South 800 West
Salina, Utah 84654

Re: Link Canyon Portal, Canyon Fuel Company, LLC, SUFCO Mine, C041/002-AM02E, Outgoing File

Dear Mr. May:

The above-referenced amendment has been reviewed. There are deficiencies that must be adequately addressed prior to approval. A copy of our Technical Analysis is enclosed for your information. In order for us to continue to process your application, please respond to these deficiencies by August 23, 2002.

If you have any questions, please call me at (801) 538-5325 or Mike Suflita at (801) 538-5259.

Sincerely,

Daron Haddock
Permit Supervisor

an
Enclosure
cc: Price Field Office
O:\041002.CON\FINAL\DEF02E.DOC



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Date: 07/18/02 additional information

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INTRODUCTION

TECHNICAL ANALYSIS

INTRODUCTION

On April 8, 2002 the Division received an amendment to re-open an old portal in the abandoned Link Canyon mine. This portal would be connected to the existing SUFCO mine through old, abandoned mine workings. The portal is needed to provide intake ventilation, an emergency escapeway, and for access to the electrical power substation located directly across the canyon from the portal. The old Link Canyon Mine was closed in 1960 and is therefore a pre-SMCRA site. The new portal access is estimated to be used over the next 8 to 10 years. The proposed new disturbed area is 0.23 acre in size, with an estimated 0.14 acre actually to be disturbed. The entire area is contained within the present approved Permit Area. The new disturbance will include a 120-foot road and a power line to the Link Canyon substation.

The U.S. Forest Service is the Federal Surface Management Agency since the proposed disturbance is within the Manti La-Sal National Forest. The Forest Service does have concerns about the project, although the Division has not yet received the letter enumerating these concerns. These concerns will be forwarded to the mine Operator.

The Utah Division of Water Quality has determined that, since the natural water flowing from the portal is not process wastewater, and since it has been flowing naturally for a number of years, no UPDES discharge point will be required even if the water is kept flowing.

The U.S. Fish and Wildlife has reviewed the project and has no comments on it.

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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

Regulations

- R645-301-114**, the Permittee must receive landowner (USFS) consent. A copy of consent letter must be given to the Division prior to approval. 8
- R645-301-121.200**, Indicate on Plate 5-2F 1) The direction of water drainage on the road and portal pad areas, 2) The location of all silt fences, 3) Darker contour lines, 4) The elevation at the connection point where the existing SUFCO mine joins the access to the old Link Canyon mine, and 5) Location of all the Alternate Sediment Control Areas. 37
- R645-301-132**, The qualifications of Mr. Keith Zobell to conduct biological studies must be provided as well as the qualifications of the consulting soil scientist, Mr. Dan Larsen. 9
- R645-301-142**, The application must include a map that distinguishes between disturbances that occurred prior to August 3, 1977, and disturbances that occurred after August 3, 1977. 10
- R645-301-222.200**, The Permittee should locate soil sample sites number 6 and 7 which were omitted from the Soil Description Location map in Appendix 2-9 and amend the PAP with any forthcoming corrections to Appendix 2-9 concerning the SubOrder and Great Group identification of the soils of the area. 17
- R645-301-231.100**, The application should describe topsoil handling plans including the equipment to be used and moisture content below which soils will not be handled and the topsoil salvage described in the application should include separate handling of the Mahonia repens (creeping mahonia) for transplanting to the surface layer of the topsoil pile. 28
- R645-301-231.400**, The Permittee must relate the volume of topsoil salvaged and dimensions of the topsoil pile in As-Built maps. 28
- R645-301-232.100**, The Permittee must flag areas within the disturbed area which will not have topsoil removed. 28

SUMMARY OF DEFICIENCIES

R645-301-232.200, The Permittee should commit to the salvage of six inches of soil from the entire disturbed area including TUE, TUL, CU and RP soil types..... 28

R645-301-234.220, The Permittee should evaluate an alternate location for storage of the topsoil pile, out of the drainage on a level slope. 28

R645-301-234.230, The application should describe surface pitting of the stockpile to retain moisture and reduce erosion and should indicate what seed mix will be used to establish vegetation on the topsoil pile. 28

R645-301-244.200, The application should describe replacement of boulders and stones to the surface. 50

R645-301-321.100, A detailed species list providing genus and species for the riparian area must be provided..... 13

R645-301-321.100, Information must be provided to assess if the existing Pinyon-Juniper reference area adequately represents this area. 13

R645-301-322, The area must be surveyed for Forest Service sensitive plant and the report included in the MRP. 13

R645-301-322.210, Mollusk and amphibian surveys must be conducted prior to construction and results of the survey included in the resource section of the MRP..... 15

R645-301-322.210, The comment (page 3-8A) that Mexican spotted owls are not likely and surveys unnecessary must be changed. Surveys will be required if construction occurs during critical nesting and rearing times, February 1 to August 31..... 14

R645-301-323, A vegetation map of the disturbed area must be provided at a level adequate to predict the potential for reestablishing vegetation 13

R645-301-353, The seed mixture must be modified to eliminate introduced species, provide 50 to 100 seeds per square foot, and provide greater diversity..... 49

R645-301-353, The species selected for transplanting for the access road must also include Oregon grape. The MRP must be modified to plant cuttings from willows during early spring. 49

R645-301-356, the success standards for the access road and portal area must be established... 49

R645-301-521.133, The Permittee must state how the public will be protected from mining and reclamation activities that will be conducted within 100 feet of a public road. 22

R645-301-521.151, The Permittee must show all contour lines that are up to 100 feet outside the disturbed area boundary on Plate 5-2F, Link Canyon Portal Surface Facilities..... 20

SUMMARY OF DEFICIENCIES

R645-301-521.160 thru R645-301-521.161 , The Permittee must provide a map showing the powerline corridor.....	40
R645-301-521.190 and R645-301-121.200 , The Permittee must label the premining, operational and postmining surface on the cross-sections on Plate 5-2F.	20
R645-301-521.190 , The Permittee will reference the location of the disturbed area boundaries on Plate 5-2F to show coordinates such as township and range or UTM. In addition, the Permittee must also the location of all disturbed area boundaries on one map.	40
R645-301-521.251 , The Permittee has designated a disturbed area and an Actual disturbed area on page 1-37 of the application, therefore, to avoid confusion, the application must specify plans for placement of signs and markers.....	38
R645-301-542 thru R645-301-542.500 , Maps, plan, and narrative for the reclamation of the Link Canyon Portal area and power poles. A total number of power poles will needed to be in the narrative or shown on a map.	43
R645-301-553.110 , The Permittee must state in the amendment how the Link Canyon Portal area will be reclaimed to Approximate Original Contour.	43
R645-301-731.520 , Provide a plan for restoration of water flow at the reclaimed portal.....	48
R645-301-731.600 , Provide stream buffer zones signs and indicate their placement on Plate 5-2F.	37
R645-301-742 , Show construction of the catch basin indicated on Plate 5-2F. Include features that prevent excess sediment from leaving the new disturbed area. The Operator will need to commit to cleaning out this basin as needed to keep the basin operating as a sediment trap... 37	
R645-301-742.113 , The Permittee must indicate what measures will be taken during operations to provide interim reclamation and stability of the cutslopes disturbed for fill.....	38
R645-301-742.300 , 1) Redesign Channel 1 and Channel 2 to accommodate the undisturbed drainage flows into those ditches, 2) Justify, or revise, the runoff curve numbers and quantify the amount of rock outcrop involved in the drainage above the culvert, and 3) Add the undisturbed drainage flowing onto the disturbed area to the culvert size calculations.	37
R645-301-744 , Justify the lack of discharge structures at the culvert outlet or provide them.	37
R645-301-800 , The Permittee must provide the information necessary for the Division to calculate the bond amount to reclaim the Link Canyon Portal Project. The Permittee must have an adequate bond in place to cover all of SUFCO Mine's bonded areas.....	51

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SUMMARY OF DEFICIENCIES

GENERAL CONTENTS

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:

This information is in the current Mining and Reclamation Plan.

Findings:

The amendment meets minimum regulatory requirements.

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:

Canyon Fuel Company has submitted an amendment to construct a new portal at Link Canyon. Link Canyon is located in Sevier County Section 26, W1/2NW1/4sw1/4.

The Bureau Land Management (BLM) is the mineral leaser and the USFS (U.S. Forest Service) is the landowner of the Link Canyon Portal Area.

The Link Canyon portals area is within the DOGM permit area of the Sufco mine. The

GENERAL CONTENTS

Link Canyon portal area was a part of the Pines Tract significant revision. The Division in June 16, 2000 approved this revision. Prior to Division approval, the BLM and USFS engaged the NEPA process and conducted an EIS (Environmental Impact Statement) of this area. The analysis of the EIS concluded that the BLM could issue a Coal Lease Permit. The permit was issued to Canyon Fuel Company, Sufco Mine on September 1, 1999 under lease number UTU-76195.

However, the U.S. Forest Service will engage the NEPA process and conduct an environmental analysis (not necessarily an Environmental Assessment) of the Link Canyon Portal Area amendment. Therefore, USFS will not give landowner consent until their analysis is completed and a new decision is made. This information was provided by USFS management on July 18, 2002.

Findings:

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

R645-301-114, the Permittee must receive landowner (USFS) consent. A copy of consent letter must be given to the Division prior to approval.

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 construction connects to a public road and therefore is within 100 feet of a public road. The Operator has submitted copies of public announcements made in the Emery County Progress, a local newspaper in Castle Dale, UT. The advertisement ran on April 23 and 30, and May 7 and 14, 2002.

Findings:

Information provided in the application meets the minimum requirements of the regulations

REPORTING OF TECHNICAL DATA

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

Analysis:

An Order I Soil Survey was conducted of the proposed Link Canyon pad and portal area in December 2001 by Dan Larsen, Soil Scientist, Environmental Industrial Services, Inc., Helper, Utah. InterMountain Laboratories, Inc. of Sheridan, Wyoming analyzed the soil samples.

Keith Zobell conducted most of the biological studies reported. Mr. Zobell's qualifications must be provided.

Findings:

Information provided in the application does not meet the minimum Technical Data Reporting requirements of the Regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-132, The qualifications of Mr. Keith Zobell to conduct biological studies must be provided as well as the qualifications of the consulting soil scientist, Mr. Dan Larsen.

MAPS AND PLANS

Regulatory Reference: 30 CFR 777.14; R645-301-140.

Analysis:

The application makes reference to previously disturbed areas in Section 2.3.1, page 2-11

GENERAL CONTENTS

and in Section 3.2.2.2, page 3-22. The previously disturbed areas must be located on a map.

Plate 5-2F must distinguish between coal mining operations as follows:

- Conducted prior to August 3, 1977 and not disturbed again by the Permittee.
- Coal mining operations conducted prior to August 3, 1977 and disturbed again by the Operator after August 3, 1977.
- Operations conducted after August 3, 1977.

Findings:

The information provided does not meet the minimum Maps and Plans requirement of the Regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-142, The application must include a map that distinguishes between disturbances that occurred prior to August 3, 1977, and disturbances that occurred after August 3, 1977.

ENVIRONMENTAL RESOURCE INFORMATION

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:

The Permittee submitted a map showing the previously mined area on Plate 5-2F.

Findings:

The information submitted meets the minimum requirement of this section.

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 permit area will not change. The Link Canyon Portals are already within the permit area.

Findings

The submittal meets minimum regulatory requirements.

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

ENVIRONMENTAL RESOURCE INFORMATION

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:

John Senulis of Senco-Phenix conducted a literature and file review of the Link Canyon Mine portals. He concluded that no cultural or paleontological resources are present. The review did consider the historical significance of the Link Canyon Mine. This review is sufficient for the portal development work.

Findings:

The information provided meets the minimum Historic and Archeological Resource Information requirements 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.

Analysis:

The Convulsion Canyon Mine site receives an average annual precipitation of approximately 12.51 inches. Precipitation in the form of rain peaks in August with 1.65 inches being received on the average for that month. Snow covers the ground from September through May. Appendix 7-5 provides detailed climatological information.

Findings:

The information reported meets the minimum Climatological requirements of the Regulations.

VEGETATION RESOURCE INFORMATION

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

Minimum Regulatory Requirements:

ENVIRONMENTAL RESOURCE INFORMATION

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

Analysis:

The area proposed for disturbance contains a small riparian area of .05 acres. The vegetation within the riparian area consists of willow, alder, stinging nettle, rose, horsetail, carex, Kentucky bluegrass, rush, and clematis (page 3-20). A detailed species list providing genus and species is required for this riparian area. This will provide information to develop a revegetation plan.

The Link Canyon portal also requires a short access road. It is unclear in the application what vegetation type the road will disturb. No information has been provided to assess if the existing Pinyon-Juniper reference area adequately represents this area. The level of detail provided in Plate 3-1 is insufficient to predict the potential for reestablishing vegetation.

Keith Zobell conducted a threatened and endangered plant survey of the area in 1996 and no threatened or endangered plant species were found (Appendix 2-2). No Forest Service sensitive plant species were found by Zobell (2000), however a few of the species may be found within the portal area (page 3-22). The area must be surveyed and report provided in the MRP for sensitive species prior to approval.

Findings:

The information provided does not meet the minimum Vegetation Resource Information requirements of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

- R645-301-321.100**, A detailed species list providing genus and species for the riparian area must be provided.
- R645-301-321.100**, Information must be provided to assess if the existing Pinyon-Juniper reference area adequately represents this area.
- R645-301-323**, A vegetation map of the disturbed area must be provided at a level adequate to predict the potential for reestablishing vegetation
- R645-301-322**, The area must be surveyed for Forest Service sensitive plant and the report included in the MRP.

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:

The application states that Link Canyon is not likely to contain Mexican Spotted owls. While this statement may be true because they are a rare species, it is still necessary to conduct clearances for the owl. The comment (page 3-8A) that owls are not likely and surveys unnecessary must be changed. Surveys will be required if construction occurs during critical nesting and rearing times, February 1 to August 31.

Any mollusks and amphibians found when opening the western most Link Canyon Mine portal will be moved to the other portal found on the eastern side. These surveys should be conducted prior to construction and results of the survey included in the resource section of the MRP.

Golden eagle nests occur within a half mile radius of the Link Canyon portals. Raptor surveys are conducted each spring. Prior to construction, the portal area will be surveyed for raptor nests.

Findings:

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

R645-301-322.210, The comment (page 3-8A) that Mexican spotted owls are not likely and surveys unnecessary must be changed. Surveys will be required if construction occurs during critical nesting and rearing times, February 1 to August 31.

ENVIRONMENTAL RESOURCE INFORMATION

R645-301-322.210, Mollusk and amphibian surveys must be conducted prior to construction and results of the survey included in the resource section of the MRP.

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:

The proposed disturbance will affect 0.14 acres, with 0.05 acres being riparian in nature. The proposed mine facility is between 7,660 to 7,690 feet elevation. The average annual precipitation recorded at the mine site has been 12.59 inches with the majority of the precipitation falling as snow. The soil resources within the Link Canyon mine portal area are discussed in Section 2.1.3 and Appendix 2-9 of the PAP. The soils include steep side slopes and riparian areas in the drainages supported by mine water discharge.

Mr. Daniel Larsen, Professional Soil Scientist with Environmental Industrial Services conducted an Order I soil survey of the disturbed area in December 2001. His report is located in Appendix 2-9. The survey contains five soil profile descriptions (Appendix A), laboratory analysis of nine soil samples (Appendix B), soil and landscape photographs (Appendix D), and soils maps (Appendix E).

Soil Identification and Description and Productivity

Soils were identified according to the standards of the NRCS's National Cooperative Soil Survey. The soils of the site were identified to their subgroup as either Typic or Calcic Ustocrepts, ranging from coarse silty to loamy-skeletal and are calcareous to carbonatic. The Division could not locate the Suborder and Great Group in the Keys to Soil Taxonomy, 8th Ed. (Soil Survey Staff, 1999). Mr. Larsen explained that he named the soils appropriately according to the 1996 version of the Keys to Soil Taxonomy, but will key out the soil name using the 1999 Keys to Soil Taxonomy and provide this information to the Permittee for inclusion in the PAP.

For example:

Order: Inceptisols (young, little horizonation; little pedogenesis)
Suborder: Ochrept (ochric epipedon) not in the 1999 Keys to Soil Taxonomy
Great Group: Ustocrept ((moisture control section is dry than less than ¾ of the time when the temperature is above 5 C and aridic soil moisture regime bordering on ustic).
Not in the Keys to Soil Taxonomy.
Subgroup: Typic or Calcic
Family: coarse silty to loamy-skeletal, mixed, frigid
Series: name?
Phases: calcareous to carbonatic

The soils were mapped using the following designations:

WC	Waste Coal
DR	Disturbed
CU	Calcic Ustochrepts
TUE	Typic Ustochrepts
TUL	Typic Ustochrepts
VS	very stony bouldery areas
RP	riparian sites

The field sheets in Appendix A and the soils maps of Appendix E, describe soils supporting pinyon pine, juniper, rabbitbrush, ephedra, serviceberry, sagebrush and bunchgrass. (During a site visit on December 6, 2001, the Division noted extensive colonies of Mahonia repens, Creeping Mahonia). From the information submitted, there does not appear to be any supporting field description or soil analysis for the TUL soil type.

Soil Characterization

The soil horizons were sampled and analyzed according to DOGM guidelines for topsoil and overburden. Soil texture, rock fragment content (percent by volume), and Munsell color were determined in the field. Available Water Holding Capacity was estimated based upon texture and verified by saturation percent. Percent surface boulders and stones were noted on the field sheets as between 20 and 85%.

Soil sample sites number 6 and 7 were omitted from the Soil Description Location map in Appendix 2-9.

Soil samples were sent to InterMountain Laboratories, Inc. Sheridan, Wyoming, for analysis. Appendix B of Appendix 2-9 contains the laboratory data. Appendix C provides a comparison of the soil test results with the Division's soil suitability criteria.

Overall, soil laboratory test results show a good rating for soil chemistry and fair rating for soil water holding capacity after correction for coarse fragments except as noted below:

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Site #2, along the access road, 12 –24” depth, Electrical Conductivity (EC) equal to 18.1 and Sodium Adsorption Ratio (SAR) equal to 9.18 and 0.26ppm Selenium
Site #5, along the access road, 0 – 25” depth, EC equal 8.37 and carbonates equal 45%

Although concretions of carbonate were noted at site #5, there was no calcic horizon formed. As would be expected in a zone of carbonate precipitation, soluble magnesium is more abundant than soluble calcium at this depth. Roots were noted to a depth of 25 inches. Division photos of the site taken on June 5,2002 show a plant community that does not appear to be affected by the elevated EC or the carbonate content of the soil.

These soils are developing on weathered coal and presently have an “A” horizon that is between 4-6 inches in depth and a B or C horizon extending to 20 to 40 inches. The surface soils (“A” and “B” horizons represented by sample sites 1, 2 and 5) are very fertile with Nitrate Nitrogen between 8.54 and 50.8 ppm, Phosphorus ppm between 0.92 and 3.45, and Potassium between 62.3 and 224 ppm. (The weathered coal is likewise rich in nitrate nitrogen.) This provides an interesting baseline for fertilization during reclamation of the site.

A small riparian area (0.05 acres) has very stony sandy loam soils to a depth of six inches deep. The riparian soils will be salvaged.

Findings:

The information provided does not meet the minimum Environmental Soil Resource requirement of the Regulations. Prior to approval and in accordance with

R645-301-222.200, The Permittee should locate soil sample sites number 6 and 7 which were omitted from the Soil Description Location map in Appendix 2-9 and amend the PAP with any forthcoming corrections to Appendix 2-9 concerning the SubOrder and Great Group identification of the soils of the area.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

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

Minimum Regulatory Requirements:

The permit application must include as part of the Resource Information, the following maps, plans and cross sections:

Affected area boundary maps

The boundaries of all areas proposed to be affected over the estimated total life of the underground mining activities, with a description of size, sequence, and timing of the mining of subareas for which it is anticipated that additional permits will be sought.

Archeological site maps

Known archeological sites within the permit or adjacent areas. Note - Information on the nature and location of archeological resources on public land and Indian land as required under the Archeological Resources Protection Act of 1979 must

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be submitted separately from the application, and marked and held as confidential.

Coal resource and geologic information maps

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

Cultural resource maps

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

Existing structures and facilities maps

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

Existing surface configuration maps

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

Mine workings maps

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

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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

There will be no change to the affected area, since underground mining will be minimal and no second mining in this area will be done. Therefore, subsidence will likely not take place

Coal Resource and Geologic Information Maps

This map will not need to be updated since no mining will take place. All entries have been developed. Minor amounts of mining many take place to connect the SUFCO mine with the Link Canyon mine.

Existing Structures and Facilities Maps

The Link Canyon Portal area does not have any existing structures.

Existing Surface Configuration Maps

The Permittee has submitted existing contours of the Link Canyon Portal area. This information is on Plate 5-2F. The existing surface configuration map does not show the contours 100 feet outside the disturbed area boundary. Also the cross-sections are not clearly labeled premining and postmining topography.

Mine Workings Maps

The Permittee has given underground mine workings of the old Link Canyon Mine and the immediate area of the SUFCO Mine. This information is on Plate 5-2F.

Permit Area Boundary Maps

The permit area will not change with the addition of the Link Canyon Mine.

Contour Maps

The Permittee has given contours of the Link Canyon Portal area.

Findings:

The information provided will not meet the minimum requirement of this section. Prior to approval the Permittee must provide the following in accordance with:

R645-301-521.151, The Permittee must show all contour lines that are up to 100 feet outside the disturbed area boundary on Plate 5-2F, Link Canyon Portal Surface Facilities.

R645-301-521.190 and R645-301-121.200, The Permittee must label the premining, operational and postmining surface on the cross-sections on Plate 5-2F.

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MINING OPERATIONS AND FACILITIES

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

Minimum Regulatory Requirements:

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

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

Analysis:

Facilities and Structures

There will be no building at the Link Canyon Portal. This area will be used for mine ventilation, emergency escapeway, and to access the Link Canyon substation.

A culvert and power pole will be located in this area.

The Permittee is bringing a powerline from the Link Canyon substation to the Link Canyon Portal.

Findings:

The information submitted meets the minimum requirement of this section.

EXISTING STRUCTURES:

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

Minimum Regulatory Requirements:

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

Provide a description of each existing structure proposed to be used in connection with or to facilitate the surface coal mining and reclamation operation. The description shall include: the location; plans of the structure which describe its current condition; approximate dates on which construction of the existing structure was begun and completed; and, a showing, including

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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:

There are no existing structures at the Link Canyon Portal area. The Permittee will reopen one of the two cave-in portals.

Findings:

The information submitted meets the minimum requirement of this section.

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:

The Permittee did not state what measures would be taken to protect the public when work is being done within 100 feet of the Link Canyon Road.

Findings:

The information provided will not meet the minimum requirement of this section. Prior to approval the Permittee must provide the following in accordance with:

R645-301-521.133, The Permittee must state how the public will be protected from mining and reclamation activities that will be conducted within 100 feet of a public road.

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AIR POLLUTION CONTROL PLAN

Regulatory Reference: 30 CFR 784.26, 817.95; R645-301-244, 301-420.

Minimum Regulatory Requirements:

For all surface operations associated with mining activities, the application shall contain an air pollution control plan which includes the following: an air quality monitoring program, if required by the Division, to provide sufficient data to evaluate the effectiveness of the fugitive dust control practices to comply with applicable Federal and State air quality standards; and, a plan for fugitive dust control practices such that all exposed surface areas shall be protected and stabilized to effectively control erosion and air pollution attendant to erosion.

Analysis:

The operator will control fugitive dust by application of water to areas where needed (Section 4.2.2, page 4-17). The Convulsion Canyon Mine operates under Division of Air Quality approval order DAQE-714-98 dated October 28, 1998 found in Appendix 4-4.

Findings:

The information provided in the MRP is adequate for the Air Pollution Control Plan requirements 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,

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- but not limited to: backstowing or backfilling of voids; leaving support pillars of coal; leaving areas in which no coal is 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:

Subsidence Control Plan

There will be a small amount of mining to connect the Link Canyon Mine to the SUFCO mine. There will be no second mining in this area. Therefore, no subsidence should take place. The plan does not need to be changed.

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Findings:

The information submitted meets the minimum requirement of this section.

FISH AND WILDLIFE INFORMATION

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

Minimum Regulatory Requirements:

Protection and enhancement plan

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

Analysis:

Bald and Golden Eagles

Golden eagles are sensitive to human disturbance during the nesting period. The Fish and Wildlife Service recommends a one-half mile buffer zone with no disturbance be maintained from January 1 to August 31. The nests will be monitored to see if they are being used. After the facilities are in place, very little mining activity will occur in the area with only emergency maintenance and monthly inspections.

Link Canyon also contains high priority deer and elk winter range. The current plan says surface activities will be curtailed from December 1 through April 15 (page 3-42) for big game and January 1 to August 15 for raptors. That leaves August 15 to December 1 for construction activities.

Findings:

The information provided meets the minimum Fish and Wildlife Information requirements of the regulations.

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;

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and, the material will be retained in a condition more suitable for redistribution than if stockpiled.

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

Analysis:

Removal and Storage

Regulation 645-301-232.100 requires topsoil removal from all disturbed areas. The disturbed area boundary encompasses 0.23 acres. The boundary has been drawn wider than the expected disturbed area. Topsoil will be removed along the portal access road and at the portal pad, approximately 0.14 acres of new disturbance, but not from beneath the proposed power distribution structures. Therefore, there will be 0.09 acres of undisturbed ground within the disturbed area. Should the area of disturbance expand to the disturbed area boundary and encompass the additional 0.09 acres, topsoil must be removed from those 0.09 acres prior to disturbance.

Soils will be removed from all disturbed areas with the exception of the power pole disturbance and from undisturbed islands within the disturbed area. Flagging of the actual disturbed area versus the disturbed area boundary would help to delineate the boundary of topsoil recovery.

The Permittee will have a qualified person on site during construction and reclamation phases (Section 2.3.1.1, page 2-13). Soil types and approximate salvage depth and area are related in a table in Section 2.3.1.1, page 2-13. In this table, the area of salvage sums to 0.1 acre and the recovery depth of six inches will be used on the riparian areas (RP), the Calcic Ustochrepts (CU), and the Typic Ustochrepts, light colored (TUL). But a recovery of only four inches is planned for the Typic Ustochrepts eroded, carbonatic (TUE) soils. The Division recommends a removal depth of six inches for all locations.

Soil removal equipment was not noted in the application.

The plan indicates in Section 2.3.1.1 page 2-11 that topsoil will be carefully separated from the subsoil since most of the subsoils are not suitable as substitute topsoil or growth media, due to excessive carbonate content.

Approximately 80 yards of topsoil will be stockpiled. The approximate dimensions are not shown. The yardage and dimensions of the stored topsoil can be reported in an As-Built submittal.

The topsoil stockpile is located on Plate 5-2F. Berms (and/or silt fences) and a three-strand barbed wire fence will be used to protect stored topsoil (Section 2.3.1.4, page 2-18). The stockpile will be vegetated (Section 2.3.4.2, page 2-23), but the seed mix was not mentioned.

The surface of the stockpile should be pitted to retain moisture and reduce erosion. This practice is described in the Practical Guide to Reclamation (DOGM, 2000), available at <http://dogm.nr.state.ut.us>. The stockpile will be mulched and seeded using the mix in Table 3-4, after September 15 (231.400).

The Division recommends that the colonies of *Mahonia repens* (Creeping Oregon Grape) are scooped from surface layer of soil and placed on top of the topsoil pile and lightly covered with additional topsoil. Transplanting these plants would provide immediate protection and erosion control on the topsoil pile. The surface layer of soil carried with the transplanting operation is valuable for it contains seeds, microorganisms, organic matter, elevated levels of nitrogen and phosphorus.

The Division recommends that the surface soil be brought to approximately 15% moisture either through water irrigation or precipitation prior to initiating topsoil removal operations.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Accordingly, the Permittee must address those deficiencies as found within this Draft Technical Memo and provide the following, prior to approval, in accordance with the requirements of:

- R645-301-232.100, The Permittee must flag areas within the disturbed area which will not have topsoil removed.
- R645-301-232.200, The Permittee should commit to the salvage of six inches of soil from the entire disturbed area including TUE, TUL, CU and RP soil types.
- R645-301-231.400, The Permittee must relate the volume of topsoil salvaged and dimensions of the topsoil pile in As-Built maps.
- R645-301-234.220, The Permittee should evaluate an alternate location for storage of the topsoil pile, out of the drainage on a level slope.
- R645-301-234.230, The application should describe surface pitting of the stockpile to retain moisture and reduce erosion and should indicate what seed mix will be used to establish vegetation on the topsoil pile.
- R645-301-231.100, The application should describe topsoil handling plans including the equipment to be used and moisture content below which soils will not be handled and the topsoil salvage described in the application should include separate handling of the *Mahonia repens* (creeping mahonia) for transplanting to the surface layer of the topsoil pile.

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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:

A plan for interim revegetation is found in Section 3.5.3 of the MRP.

Findings:

The information provided meets the minimum Vegetation requirements 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;

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- 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.

Analysis:

Road Classification System

The Permittee will construct a road from the Link Canyon Road to the Link Canyon Portal. This road has been classified as an ancillary road. There will be no frequent travel on this road. The road will be reclaimed during reclamation of this area.

Findings:

The information submitted meets the minimum requirement of this section.

HYDROLOGIC INFORMATION

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

Minimum Regulatory Requirements:

General

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

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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 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.

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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 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.

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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 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.

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Siltation Structures: Sedimentation ponds

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

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

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

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

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

Siltation Structures: Other treatment facilities

Other treatment facilities shall be designed to treat the 10-year, 24-hour precipitation 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.

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Analysis:

General

The proposed new disturbed area is 0.23 acre in size, with an estimated 0.14 acre actually to be disturbed and needing reclamation. The entire area is contained within the present approved Permit Area. The access road to the pad and portal area branches off the Link Canyon Road for a maximum distance of about 200 feet. Link Canyon Road is a public road. The road and portal would be constructed by simple cut and fill methods. There is a small riparian area, about 40 feet by 50 feet or 0.05 acre, at the old portal. The source of this water is unknown, but believed due to two possible sources. The first is water that has accumulated within, and filled up, the old Link Canyon Mine. This is believed most likely. The second possible source is a spring located above the portal, higher up in Link Canyon. Opening the portal is expected to reveal the water source. Water flows in this riparian area are estimated to be 5 gallons per minute or less, depending on the season of the year.

Surface-Water Monitoring

No water monitoring has been done at this site in the past and none is needed as a result of reopening the old portal.

Discharges into an Underground Mine

Water is believed to have filled up the old Link Canyon Mine. The Operator proposes to remove this water during rehabilitation of the surface portal. Water removal would be by draining it into the SUFCO Mine and discharging that water at UPDES point number 003, which is an existing discharge at the main minesite.

Underground water is expected to continue flowing to the area during and after this new construction. The Operator proposes to implement a water collection and pumped discharge system that will allow water in the abandoned mine, only, to be discharged near the old portal site. There is also an option to discharge the water at another old portal about 100 feet south of the portal to be reopened. Either option would maintain flows to the Link Canyon drainage and preserve riparian areas.

It's worth noting that when the Pines Tract was evaluated for mining, the U.S. Forest Service developed an Environmental Impact Statement. That EIS anticipated a new company operating the mines in this area and development of a completely new disturbed area for a minesite in Link Canyon, at the site of the proposed portal opening. Further, that new minesite was assumed to completely obliterate the riparian area being discussed here. This would mean no water flows for the life of the new mine. This current proposal will also obliterate the riparian area. However, the water flow will be maintained during the operation of the mine and will be restored at reclamation. The total time during which the riparian area proper will be lost is about 8 to 10 years, as opposed to the life of mine anticipated by a new minesite in Link Canyon.

Diversions

Plate 5-2F shows two drainage diversion ditches, Channel 1 and Channel 2, leading to a catch basin. These ditches have been designed with only consideration of the runoff of the road and pad areas, each about 0.04 acre respectively. The resulting flows of 0.02 cfs are minimal. There is, however, one significant omission in the design of these two channels. That is, there are undisturbed drainages, originating outside the disturbed area, contributing water to these ditches. The ditches must be redesigned to accommodate these undisturbed drainage contribution. The ditches were designed using a 10-year, 6-hour design storm, which is appropriate for a temporary diversion on an intermittent stream. The diversion ditches have 0.3 foot of freeboard, which is adequate design.

Typical of Utah coal mines, there is a culvert under the disturbed area to convey storm runoff under the area. The culvert was designed using the 10-year, 6-hour storm and the design used the 776-acre drainage area above the inlet to the culvert. While Manning's n and other aspects of the calculation are appropriate, the Division questions the runoff curve numbers part of that calculation. Muskingum soil (nearly bare and untilled, and alluvial valley fans) and short grass pasture were selected as the soil types for the drainage. This resulted in runoff curve numbers of 63 and 70 for the two subdrainages. Given the percentage of rock outcrop in Link Canyon above the portal, these runoff curve numbers appear low. The Operator will need to justify, or revise, the runoff curve numbers and quantify the amount of rock outcrop involved in the drainage. Also, the undisturbed drainage flowing onto the disturbed area must be added to the culvert calculations. It appears the culvert will need to be larger, or multiple culverts be used.

Stream Buffer Zones

The drainage area above the new portal is 776 acres, which is greater than one square mile. By regulatory definition the stream is "intermittent". Therefore, stream buffer zone signs will be required.

Sediment Control Measures

The slope adjacent to the Link Canyon Portal access road will be disturbed and excavated to create the roadway. Plate 5-2F indicates that a cut approximately six feet deep and 15 feet high will be made on the slope. What measures will be taken to provide interim reclamation and stability of the cutslope during mining?

Several areas of the road and pad construction are below the road and pad. Silt fences at the lower end of the construction will protect these areas. The Plate 5-2F needs to show the location of all silt fences. Further, the plate needs to show the direction of drainage across the road and pad to the diversion ditches. The Alternate Sediment Control Areas (ASCA) areas also need to be shown on the plate. Calculations for the ASCA areas are provided and show the silt fences should be adequate to contain sediment from the areas.

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No details are provided to show construction of the catch basin shown on Plate 5-2F. These will need to be shown, especially that this basin will prevent excess sediment from leaving the new disturbed area. The Operator will need to commit to cleaning out this basin as needed to keep the basin operating as a sediment trap.

Discharge Structures

There is no indication of riprap or other channel erosion protection at the outlet of the culvert. If the culvert discharge is onto bedrock, this would be acceptable. If the culvert discharge is onto erodible materials, erosion protection must be provided. The Operator must justify lack of discharge structures or provide them.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Accordingly, the Permittee must address those deficiencies as found within this Draft Technical Memo and provide the following, prior to approval, in accordance with the requirements of:

R645-301-121.200, Indicate on Plate 5-2F 1) The direction of water drainage on the road and portal pad areas, 2) The location of all silt fences, 3) Darker contour lines, 4) The elevation at the connection point where the existing SUFCO mine joins the access to the old Link Canyon mine, and 5) Location of all the Alternate Sediment Control Areas.

R645-301-742.300, 1) Redesign Channel 1 and Channel 2 to accommodate the undisturbed drainage flows into those ditches, 2) Justify, or revise, the runoff curve numbers and quantify the amount of rock outcrop involved in the drainage above the culvert, and 3) Add the undisturbed drainage flowing onto the disturbed area to the culvert size calculations.

R645-301-731.600, Provide stream buffer zones signs and indicate their placement on Plate 5-2F.

R645-301-742, Show construction of the catch basin indicated on Plate 5-2F. Include features that prevent excess sediment from leaving the new disturbed area. The Operator will need to commit to cleaning out this basin as needed to keep the basin operating as a sediment trap.

R645-301-744, Justify the lack of discharge structures at the culvert outlet or provide them.

R645-301-742.113, The Permittee must indicate what measures will be taken during operations to provide interim reclamation and stability of the cutslopes disturbed for fill.

SIGNS AND MARKERS

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

Minimum Regulatory Requirements:

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

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

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

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

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

Analysis:

The plan indicates that the disturbed area is 0.23 acres, but that the alternate sediment control area and the actual disturbed area is only 0.14 acres (page 1-37). The requirement for placement of signs and markers is to delineate the perimeter of all affected areas. The plan describes placement of signs to delineate the affected area boundary in Section 5.2.1.2 page 5-16. In this case, the Division is uncertain whether the disturbed area boundary (0.23 acres) or the actual disturbed area (0.14) will be delineated.

Findings:

The information provided is not considered adequate to meet the Signs and Markers requirements of the Regulations. Prior to approval, the Permittee must submit the following in accordance with:

R645-301-521.251, The Permittee has designated a disturbed area and an Actual disturbed area on page 1-37 of the application, therefore, to avoid confusion, the application must specify plans for placement of signs and markers.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

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

Minimum Regulatory Requirements:

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

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The following shall be shown for the proposed permit area:

Affected area maps

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

Mining facilities maps

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

Mine workings maps

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

Monitoring and sampling location maps

Elevations and locations of test borings and core samplings. Elevations and locations of monitoring stations used to gather data on water quality and quantity, subsidence, fish and wildlife, and air quality, as required during mining operations.

Certification Requirements

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

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

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

Analysis:

Affected Area Maps

Affected area map will not be required because no second mining will take place.

Mining Facilities Maps

The mine facility is on Plate 5-2F. This map is P.E. certified. The Permittee will need to show the utility corridor on Plate 5-2F as a requirement of R645-301-521.161.

Bonded area map

Plate 5-2F shows the disturbed area boundaries, which are considered the bonded area boundaries. The location of the disturbed area is not shown in relation with other known points such as township and range or UTM coordinates.

The Division is in the process of plotting all permit and disturbed area boundaries. Having the location of the disturbed area boundaries tied into known points is essential.

To avoid confusion, the Permittee must show the location of the Link Canyon portal facility on a map that shows the location of all disturbed areas. This information is important so that readers of the MRP will be able to locate all disturbed areas.

Mine Workings Maps

The Permittee has submitted a mine-working map showing a portion of the SUFCO and the old Link Canyon Mines see Plate 5-2F.

Findings:

The information provided will not meet the minimum requirement of this section. Prior to approval the Permittee must provide the following in accordance with:

R645-301-521.160 thru R645-301-521.161, The Permittee must provide a map showing the powerline corridor.

R645-301-521.190, The Permittee will reference the location of the disturbed area boundaries on Plate 5-2F to show coordinates such as township and range or UTM. In addition, the Permittee must also the location of all disturbed area boundaries on one map.

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POSTMINING LAND USES

Regulatory Reference: 30 CFR 784.15, 784.200, 785.16, 817.133; R645-301-412, -301-413, -301-414, -302-270, -302-271, -302-272, -302-273, -302-274, -302-275.

Minimum Regulatory Requirements:

In general, all disturbed areas shall be restored in a timely manner to conditions that are capable of supporting: the uses they were capable of supporting before any mining; or higher or better uses.

Provide a detailed description of the proposed use, following reclamation, of the land to be affected within the proposed permit area by surface operations or facilities, including a discussion of the utility and capacity of the reclaimed land to support a variety of alternative uses, and the relationship of the proposed use to existing land-use policies and plans. This description shall explain: how the proposed postmining land use is to be achieved and the necessary support activities which may be needed to achieve the proposed land use; where a land use different from the premining land use is proposed, all materials needed for approval of the alternative use; and, the consideration given to making all of the proposed underground mining activities consistent with surface owner plans and applicable State and local land-use plans and programs.

The description shall be accompanied by a copy of the comments concerning the proposed use from the legal or equitable owner of record of the surface areas to be affected by surface operations or facilities within the proposed permit area and the State and local government agencies which would have to initiate, implement, approve, or authorize the proposed use of the land following reclamation.

Determine premining uses of land. The premining uses of land to which the postmining land use is compared shall be those uses which the land previously supported, if the land has not been previously mined and has been properly managed. The postmining land use for land that has been previously mined and not reclaimed shall be judged on the basis of the land use that existed prior to any mining; Provided that, If the land cannot be reclaimed to the land use that existed prior to any mining because of the previously mined condition, the postmining land use shall be judged on the basis of the highest and best use that can be achieved which is compatible with surrounding areas and does not require the disturbance of areas previously unaffected by mining.

Criteria for alternative postmining land uses. Higher or better uses may be approved as alternative postmining land uses after consultation with the landowner or the land management agency having jurisdiction over the lands, if the proposed uses meet the following criteria: there is a reasonable likelihood for achievement of the use; the use does not present any actual or probable hazard to public health and safety, or threat of water diminution or pollution; and , the use will not be impractical or unreasonable, inconsistent with applicable land use policies or plans, involve unreasonable delay in implementation, or cause or contribute to violation of Federal, State, or local law.

Approval of an alternative postmining land use, may be met by requesting approval through the permit revision procedures rather than requesting such approval in the original permit application. The original permit application, however, must demonstrate that the land will be returned to its premining land use capability. An application for a permit revision of this type must be submitted in accordance with the requirements of filing for a Significant Permit Revision and shall constitute a significant alternation from the mining operations contemplated by the original permit, and shall be subject to the requirements for permits, permit processing, and administrative and judicial of decisions on permits under the regulatory program.

Surface coal mining operations may be conducted under a variance from the requirement to restore disturbed areas to their approximate original contour, if the following requirements are satisfied:

- 1.) The Division grants a variance from approximate original contour restoration requirements.
- 2.) The alternative postmining land use requirements are met.
- 3.) All applicable requirements of the act and the regulatory program, other than the requirement to restore disturbed areas to their approximate original contour, are met.
- 4.) After consultation with the appropriate land use planning agencies, if any, the potential use is shown to constitute an equal or better economic or public use.
- 5.) The proposed use is designed and certified by a qualified registered professional engineer in conformance with professional standards established to assure the stability, drainage, and configuration necessary for the intended use of the site.
- 6.) After approval, where required, of the appropriate State environmental agencies, the watershed of the permit and adjacent areas is shown to be improved.
- 7.) The highwall is completely backfilled with spoil material, in a manner which results in a static factor of

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safety of at least 1.3, using standard geotechnical analysis.

8.) Only the amount of spoil as is necessary to achieve the postmining land use, ensure the stability of spoil retained on the bench, and all spoil not retained on the bench shall be placed in accordance with all other applicable regulatory requirements.

9.) The surface landowner of the permit area has knowingly requested, in writing, that a variance be granted, so as to render the land after reclamation, suitable for an industrial, commercial, residential, or public use (including recreational facilities.)

10.) Federal, State, and local government agencies with an interest in the proposed land use have an adequate period in which to review and comment on the proposed use.

Analysis:

No changes to the postmining land use are proposed, and the reclamation plan appears to be in compliance with the management plan of the Forest Service.

Findings:

Information provided in the amendment is considered adequate to meet the requirements of this 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, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, -301-542, -301-731, -301-732, -301-733, -301-764.

Minimum Regulatory Requirements:

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

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

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

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

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

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

Analysis:

The information is vague in determining if the Link Canyon Portal area will return to approximate original contour and how the area will be reclaimed.

Plate 5-2F does not show all of the power poles or the reclamation of these poles. Narrative or map is needed to give this information.

Findings:

The information provided will not meet the minimum requirement of this section. Prior to approval the Permittee must provide the following in accordance with:

R645-301-542 thru R645-301-542.500, Maps, plan, and narrative for the reclamation of the Link Canyon Portal area and power poles. A total number of power poles will needed to be in the narrative or shown on a map.

R645-301-553.110, The Permittee must state in the amendment how the Link Canyon Portal area will be reclaimed to Approximate Original Contour.

BACKFILLING AND GRADING

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

Minimum Regulatory Requirements:

General

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

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

If it is determined by the Division that disturbance of the existing spoil or underground development waste would increase environmental harm or adversely affect the health and safety of the public, the Division may allow the existing spoil or underground

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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.

Analysis:

General

The Permittee has submitted backfilling and grading information for the reclamation of the Link Canyon Portal area. This information is on Plate 5-2F. The Permittee will cut 234.83 cubic yards and fill 278.20 cubic yards.

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Findings:

The information provided meets the minimum requirement of this section.

MINE OPENINGS

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

Minimum Regulatory Requirements:

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

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

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

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

Analysis:

The Permittee has given information on sealing the portal. The plan is to seal the mine opening at least 25 ft. inside the mine. The seal will be constructed of solid concrete blocks using mortar. Also, MSHA regulation requires a 4-inch hitch into solid ribs, floor, and roof. The Permittee has committed to 16-inch hitch into solid ribs, floor, and roof.

Findings:

The information submitted meets the minimum requirement of this section.

TOPSOIL AND SUBSOIL

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

Minimum Regulatory Requirements:

Redistribution

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

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

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

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

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

Analysis:

Redistribution

Topsoil will be transported with wheel mounted equipment, but spread with track-mounted equipment (Section 2.4.2.1). Topsoil will be redistributed over the area to an approximate thickness of six inches (Section 2.4.2.1 page 2-25).

The MRP indicates in Section 2.4.3 that stored topsoil will be tested for levels of nitrate nitrogen, phosphorus and potassium at the time of reclamation. Application rates should attempt to re-establish baseline conditions.

Findings:

The information provided in the application is adequate for the purposes 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

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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.

Analysis:

Reclamation

The road will be reclaimed during reclamation.

Findings:

The information submitted meets the minimum requirement of this section.

HYDROLOGIC INFORMATION

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

Minimum Regulatory Requirements:

Hydrologic reclamation plan

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

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

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

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

Analysis:

Gravity Discharges

The amendment does not discuss any plans for restoration of the water flows to the

existing riparian area. Since the water is present before reopening of the portal, it's expected that water would be restored when the portal area is reclaimed. The Operator needs to provide a plan for water flow restoration as part of the Reclamation Plan.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Accordingly, the Permittee must address those deficiencies as found within this Draft Technical Memo and provide the following, prior to approval, in accordance with the requirements of:

R645-301-731.520, Provide a plan for restoration of water flow at the reclaimed portal.

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.

Analysis:

General Requirements

The current MRP includes a general seed mixture for seeding all reclaimed areas. The seed mixture has low diversity and alfalfa is an unnecessary introduced species. Oregon grape a dominant soil stabilizer in the area immediately surrounding the portal access road should be added as a transplant for Link Canyon portal disturbed area. The recommended rate for

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broadcast seeding is 50 to 100 seeds per square foot. The seed mixture needs to be reevaluated in terms of seeds per square foot.

The riparian area will be planted with willow, red osier dogwood, woods rose and alder. Shrubs will be planted in late August through early October (page 3-46). The application should be revised to state that cuttings from willows should be planted from dormant stock in early spring. The NRCS Plant Materials Centers at <http://plant-materials.nrcs.usda.gov/idpmc/> provide excellent instructions for restoring riparian or wetland areas. Plugs of sedges from the adjacent portal wet area could also be transplanted.

The current mining and reclamation plan includes plans for vegetating the main mine facilities area, and this plan, including the success standards for a Pinyon-Juniper reference area. The riparian area requires a success standard and this area must be delineated on a map to match the preexisting riparian area. The Division's Vegetation Information Guidelines do not require a reference area if disturbance is less than one acre but success standards are required. The access road will also require a success standard if the existing Pinyon-Juniper reference area does not adequately represents the area (see deficiency under Vegetation Resources).

Link Canyon is used to trail cattle to the top of the plateau, and it is anticipated they would graze on vegetation in the reclaimed area. This could reduce vegetation establishment and success, so the Division recommends the applicant fence the reclaimed area

Findings:

The information provided does not meet the minimum Revegetation requirements of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-353, The seed mixture must be modified to eliminate introduced species, provide 50 to 100 seeds per square foot, and provide greater diversity.

R645-301-353, The species selected for transplanting for the access road must also include Oregon grape. The MRP must be modified to plant cuttings from willows during early spring.

R645-301-356, the success standards for the access road and portal area must be established.

STABILIZATION OF SURFACE AREAS

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

Minimum Regulatory Requirements:

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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:

The final surface will be pitted (Section 2.4.2.1). All areas will be mulched (Section 2.4.4.1).

Placement of large rocks and boulders and slash is also encouraged.

In accordance with R645-301-244.300, rills and gullies that contribute to a violation of water quality or that disrupt the post-mining land use will be filled, regraded or stabilized (Section 2.4.4.3).

Findings:

The information in the PAP does not meet the requirements of the Regulations with regard to stabilization of the soil surface and control of erosion and air pollution attendant to erosion. Prior to approval and in accordance with:

R645-301-244.200, The application should describe replacement of boulders and stones to the surface.

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

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schedule and the performance bond required for full reclamation of the initial area to be disturbed; or, an incremental-bond schedule and the performance bond required for the first increment in the schedule.

Form of bond

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

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

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

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

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

Determination of bond amount

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

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

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

Analysis:

Determination of Bond Amount

The Permittee has not submitted bonding information for the Link Canyon Portal project.

Findings:

The information provided will not meet the minimum requirement of this section. Prior to approval the Permittee must provide the following in accordance with:

R645-301-800, The Permittee must provide the information necessary for the Division to calculate the bond amount to reclaim the Link Canyon Portal Project. The Permittee must have an adequate bond in place to cover all of SUFCO Mine's bonded areas.