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

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

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

January 20, 2000

Kenneth E. May, General Manager
Canyon Fuel Company, LLC
SUFCO Mine
397 South 8th West
Salina, Utah 84564

Re: Link Canyon Substation, Canyon Fuel Company, LLC, SUFCO Mine, ACT/041/002-AM99G, Outgoing File

Dear Mr. May:

Enclosed is a copy of the Division's review of the proposal to build a substation in Link Canyon. The proposal contains deficiencies that will need to be addressed before the proposal can be approved. Please feel free to contact us if you would like to arrange a meeting to discuss these deficiencies or if you have any questions about the requirements. Please respond to this analysis by February 7, 2000.

Sincerely,

A handwritten signature in black ink that reads "Daron R. Haddock".

Daron R. Haddock
Permit Supervisor

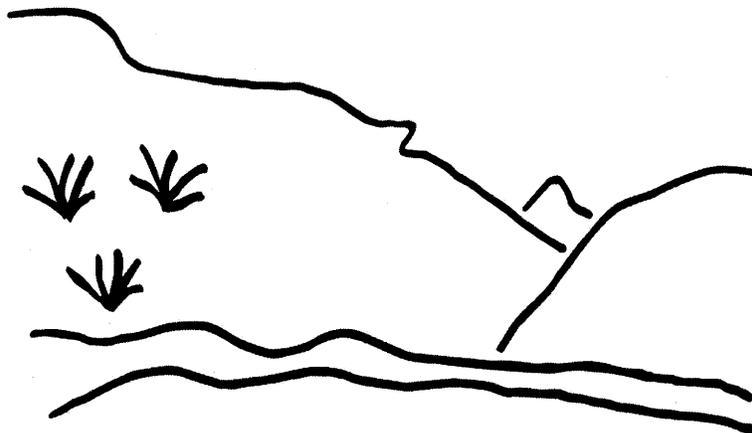
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Enclosure

cc: Mike Davis (Canyon Fuel)
Pete Hess

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State of Utah



Utah Oil Gas and Mining

Coal Regulatory Program

SUFCo Mine
Link Canyon Substation
ACT/041/002 - AM99G
Technical Analysis
January 19, 2000

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TECHNICAL ANALYSIS

INTRODUCTION

The permitting of a new electrical substation in Link Canyon by the SUFCO Mine of Canyon Fuel Company has a history going back to January of 1998. In anticipation of establishing the necessary electrical specifications to implement longwall mining in the Pines Tract lease, the applicant submitted the initial application (ACT/041/002-98A) on January 22, 1998. This application was withdrawn.

On May 20, 1998, a second submittal was received, and it was determined by the UDNR/OGM to be a significant revision; same was enumerated as ACT/041/002-98-1. After various interagency reviews and deficiency responses, the UDNR/OGM approved revision 98-1 on January 11, 1999.

During the underground drilling activities permitted through 98-1, high temperature and pressure zones were encountered, as well as material voids (all due to coal burn) in the upper Hiawatha coal seam. In an attempt to drill in the interburden between the upper and lower Hiawatha coal seams, similarly difficult geologic conditions were encountered. The permittee decided to reclaim the holes and seek a contingency plan.

On October 12, 1999, representatives from the Manti-LaSal National Forest and the Division visited the area where the planned contingency holes would breakout on the surface (.4 miles up canyon) and agreed to certain stipulations in order to keep the drilling contractor on site and the project progressing.

The contingency plan received joint interagency approval to proceed. In order to comply with the stipulated permitting requirement mandated within the contingency plan's approval, the applicant submitted ACT/041/002-AM99G, Link Canyon Substation #2, to the UDNR/OGM on December 6, 1999.

The interdisciplinary review by the Division of the December 6, 1999, submittal has been completed, and this document is a compilation of those reviews.

SUMMARY OF OUTSTANDING DEFICIENCIES (Draft TA Only)

R645-301-322, According to information from the Division of Wildlife Resources, golden eagle nest 31 is not shown in the correct location on Plate 3-3. The applicant needs to confirm the location of this nest and modify Plate 3-3 if necessary.

R645-301-120, R645-301-222 and R645-301-223, The survey report does not include laboratory analyses results or a discussion on soil chemical characterization. There are inconsistencies between the text and Soils Map A within the Order 1 soil survey for soil descriptions, map units and soil families.

R645-301-224 and R645-301-232.200, Soil Unit D side-cast soil materials need to be sampled and characterized for suitability as substitute topsoil since native topsoil is scarce and salvage of native soils provides very limited topsoil resources available for soil redistribution.

R645-301-333, The applicant should commit to not begin construction during the raptor nesting season unless surveys show that nests within one-half mile of the disturbance are not being used.

R645-301-231.100, An on-site soils specialist qualified in making field soil salvage determinations should be present during soil salvage operations.

R645-301-232.200, R645-301-232.720, and R645-301-233, Provide additional soil resources to meet revegetation requirements. Based on soil suitability findings, Unit-D side cast soil materials may provide additional substitute topsoil resource material to augment the limited amounts of native, undisturbed topsoil resources. If adequate quantities of substitute topsoil resources cannot be obtained from the site, then soil borrow will be needed.

R645-301-742, The designs are unclear (page 7-28) as to the route the undisturbed runoff takes after leaving the undisturbed drainage ditch, whether it flows down the road or across the road. In either case the applicant should provide information on both the drainage course and erosion protection of the channel.

R645-301-742, Plate 5-2E needs to show how water will be prevented from flowing down the pad access road. If there is any potential for water from the pad to overtop the water containment berm, sediment control measures must be developed to prevent off-site migration.

R645-301-242.110, Provide additional soil resources to meet adequate revegetation requirements consistent with the approved post-mining land use.

R645-301-341, The applicant will be responsible for revegetation of the entire site, and it is not clear from information in the application whether it will be possible to successfully revegetate areas previously disturbed by mining using the proposed plan. The application needs to include adequate soil information to make this determination, and it is doubtful whether vegetation can be successfully

established on weathered sandstone and shale or on just 1.8 inches of topsoil over this kind of material.

ENVIRONMENTAL RESOURCE INFORMATION

HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

Regulatory Reference: R645-301-411.140

Analysis:

The current mining and reclamation plan includes a copy of a cultural resources survey report done for the previous substation but not for the current proposal. However, the report in the plan references a separate study done by Everett Bassett in 1996 for the State Abandoned Mine Land Reclamation program. This study surveyed the Link Canyon Mine, and the State Historic Preservation Officer (SHPO) concurred with the consultant's recommendation that it was not eligible for listing in the National Register of Historic Places.

Based on this information, the Division should recommend a determination of no effect to SHPO. Also, since no significant cultural resources were found in the Link Canyon area, it is not necessary to keep the report confidential.

Findings:

Information provided in the proposal is considered adequate to meet the requirements of this section of the regulations.

VEGETATION RESOURCE INFORMATION

Regulatory Reference: R645-301-321

Analysis:

The application contains no new vegetation resource information. The area in Link Canyon that would be disturbed has a pinyon/juniper/mountain mahogany community similar to vegetation near the main facilities in East Spring Canyon. Considering the size of the proposed disturbance, the existing information is considered adequate unless the applicant desires to apply the revegetation success standards in R645-301-356.250. This is discussed further under "Revegetation" below.

Findings:

Information provided in the proposal is considered adequate to meet the requirements of this section of the regulations.

FISH AND WILDLIFE RESOURCE INFORMATION

Regulatory Reference: R645-301-322

Analysis:

Wildlife Information

The current mining and reclamation plan contains results of raptor surveys and has been updated through 1997. Plate 3-3 shows two golden eagle nests in Link Canyon, but both were inactive in 1997. According to this map, one is within about 1800 feet of the proposed disturbance, and the other is about 2700 feet away. A falcon scrape is about 3500 feet away.

The Division has received information from Wildlife Resources indicating Plate 3-3 does not show nest 31 in the correct location. According to the map from Wildlife Resources, the nest is actually about 0.45 miles from the proposed disturbance. The applicant needs to confirm the location of this nest and correct Plate 3-3 if necessary.

According to information in the existing mining and reclamation plan, Link Canyon contains high priority deer and elk winter range.

The current mining and reclamation plan includes a survey for bats done in Link and Box Canyons and in some adjacent areas. Spotted bats were not heard in Link Canyon, but two species of *Myotis* were mist netted. There may have been a maternal colony of *Myotis lucifugus* under a bridge in the lower part of Link Canyon. Spotted bats and Townsend's big eared bats are classified by the Forest Service as sensitive species.

The survey was done in early October 1997. This is a transitional time for most bat species when they could still be foraging or when they could be starting to hibernate. Since bats were mist-netted and recorded with the ANABAT, it is assumed most were still active.

The bat study did not consider hibernacula. To do so would necessitate a winter survey. However, because of the small size of the disturbance, it is unlikely any would be affected, and additional bat survey work is not required for this project.

Threatened or Endangered Species

According to information in the existing mining and reclamation plan, there are no known occurrences of threatened or endangered species in the permit area.

Findings:

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

R645-301-322, According to information from the Division of Wildlife Resources, golden eagle nest 31 is not shown in the correct location on Plate 3-3. The applicant needs to confirm the location of this nest and modify Plate 3-3 if necessary.

SOILS RESOURCE INFORMATION

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

Analysis:

Chapter 2, Soils, has been amended to allow construction of a new proposed substation pad in Link Canyon. The original MRP revision contained provisions for a substation pad and borehole breakout to allow power to be taken into the mine. Permission was granted on January 11, 1999 to construct the substation pad. During the 1999 summer, SUFCO constructed the Substation pad as proposed; however, because of an active burn within the coal seam, the borehole breakout was not possible in the area where SUFCO constructed the substation pad.

The current amendment received on December 6, 1999, contains a proposal to construct a new pad 0.4 miles further up the canyon from the present pad in. On October 15, 1999, SUFCO received approval to move the location of the punch out to the new site. The new punch out site is adjacent to the Link Canyon Road and is located at the intersection of the old tramway bench and the Link Canyon Road.. SUFCO proposes to extend the power line the additional 0.4 miles up the canyon and construct a new substation pad adjacent to the current punch out location.

This Analysis section discusses soil resource information as follows:

- Prime Farmland Investigation
- Soil Survey Information
- Soil Characterization

Prime Farmland Investigation

Appendix 2-1 contains a Prime Farmland determinations for the Quitchupah Lease Tract as performed by the Natural Resource Conservation Service. The Quitchupah Lease Tract includes Link Canyon; therefore, no Prime Farmland exists in Link Canyon.

Soil Survey Information

An Order-2 soil survey was completed for the proposed Link Canyon breakout and substation disturbed area and is included in Appendix 2-2. The soils for this area are classified as Strych Pathead Podo families Rockland complex with 30 to 80 percent slopes. The complex contains 30 percent Strych soils, 30 percent Pathead soils, 15 percent Podo soils, 15 percent Rubbleland and 10 percent rock outcrops and finer textured soils. Strych soils are 47 inches deep with rooting depths from 40 to 60 inches. Pathead soils are 60 inches deep with rooting depths 30 to 60 inches. Podo soils are thin at 11 inches deep with rooting depths 20 inches or less. Map unit descriptions are given with an Order-2 soils survey soils map.

Link Canyon Substation-1

A soil survey was conducted specifically for substation pad number 1 and is included in Appendix 2-6. This soil survey was completed on April 8, 1998 and includes two soil pits with profile descriptions. The investigation was completed by Chris Hansen and Mike Davis of Canyon Fuel Company, LLC and Robert Davidson of the Utah Division of Oil, Gas and Mining. Figure 1 illustrates the Link Canyon soil pit locations (LC-1 and LC-2) for the substation pad area. Both soil pits were hand excavated to 20 inches using a pick and shovel. For this soil survey, the soils were not classified and no soils map for the substation area was generated. From the soils descriptions, the soils from LC-1 and LC-2 appear to be either from the Pathead or Podo family inclusions. However, the pit descriptions supply adequate information for determining the quality and quantity of soil available for salvage.

Link Canyon Substation-2

An Order-1 soil survey was conducted in November 1999 for the Link Canyon Substation number 2 and is included in Appendix 2-6. The survey describes three soil types as follows:

Soil Family	Soil Taxonomic Class	Map Unit
Pathead	Loamy-skeletal, mixed (calcareous), frigid Typic Ustorthents	A, E
Podo	Loamy, mixed (calcareous), frigid Lithic Ustorthents	B
Cabba	Loamy, mixed (calcareous), frigid, shallow Typic Ustorthents	B, C, E

Link Canyon Substation

The Order-1 soils map, Soils Map A, is included at the end of the soil survey in Appendix 2-6. Map A shows five different mapping units, A through F, overlain with the proposed substation pad area. The mapping units are described as follows:

Mapping Unit	Map Unit Description
A	Moderately deep, 20" to 40" of soil over shale bedrock. Colluvial and alluvial material derived from sandstone and shale. Thin, dark brown topsoil layer over brown colored subsoils. Pathead Family. 35% to 45% slopes
B	Shallow and very shallow soils over shale, sandstone and some coal. Gravelly to stony loam derived from colluvial and residual materials. Cabba and Podo Families. 40% to 45% slopes.
C	Very shallow soils over shale. Red in color and less stones. Weakly developed and calcareous. Cabba Family. 40% slopes.
D	Disturbed area. Steep, rocky, shallow to moderately deep loamy soils up to 20" thick over sandstone and shale bedrock. Soils are composed of road cut and rocky side cast materials from old tramway. Bedrock exposed in places. 70% to 90% slopes.
E	Surface boulders, 8" to 20" of soil over shale. Pathead and Cabba Families.
F	Disturbed area. Includes old tramway and recent punch out activities. Very shallow to shallow soils composed of mixed sandstone and shale materials.

Soil Characterization

The Mine Reclamation Plan Order-2, Appendix 2-2, soil survey provides map unit descriptors for soil map unit 20, Strych-Pathead-Podo families-Rubbleland complex. Soil family descriptions identify taxonomic classifications, parent material, landscape position, slope, vegetation community, profile descriptions, rooting depths, hydrologic information, plus soil erodibility and hazard.

Link Canyon Substation-1

For the Substation number 1 soil survey, Appendix 2-6, the soil horizons at each sampling location were sampled and characterized according to the State of Utah Division of Oil, Gas and Mining (DOGM) guidelines for topsoil and overburden¹. Sampled parameters included: soil texture; pH; organic matter percent; saturation percent; electrical conductivity; CaCO₃; soluble potassium, magnesium, calcium and sodium; sodium absorption ratio, and extractable selenium and boron. Soils in both pits (LC-1 and LC-2) have very similar characteristics, with all parameters in the DOGM acceptable range. Soil profile descriptions are provided and identify

¹Leatherwood, J., and Duce, D., 1988. Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining. State of Utah Department of Natural Resources, Division of Oil, Gas and Mining.

the volume and type of rock on the surface and within the soil profile. The A horizon contains 10% rock, principally pebbles. The C1 horizons contain 40 to 45% rock, principally pebbles and cobbles. The C2 horizon for LC-1 contains 50% rock fragments, predominantly cobbles. The surface has occasional boulders with a veneer of pebbles and cobbles. Approximately 20 inches of soil from the A and C horizons is available for salvage.

Link Canyon Substation-2

Substation number 2 Order-1 soil survey, Appendix 2-6, includes three soil pits, LCS2-1, LCS2-2 and LCS2-3. Field profile descriptions sheets are provided for each of the pits, including a hand drawn field map showing the location of each soil pit. Pit LCS2-1 is identified as Pathead Family and pit LCS2-3 is identified as Cabba Family. Field profile descriptions include horizon identification, depth, color, texture, structure, consistence, soil reaction to acid, boundary description, % rock fragments, root distribution and pores. In addition, each description sheet includes location, vegetation, parent material, physiography, elevation, slope, aspect, drainage, and surface rock description. The survey indicates that horizons were sampled and sent to a soils laboratory for analyses. *However, the survey report does not include laboratory analyses results or a discussion on soil chemical characterization. There are inconsistencies between the text and Soils Map A within the Order 1 soil survey for soil descriptions, map units and soil families.*

Substitute Topsoil

Link Canyon Substation-2

Soil Unit D is composed of a road cut and rocky side cast material from the old tramway road. According to the Order-1 soil survey, mixed rock and loamy soil materials range up to about 20 inches thick with bedrock exposed in places. Since native topsoil is scarce and salvage of native soils provides very limited topsoil resources available for soil redistribution, these side cast soil materials need to be sampled and characterized for suitability as substitute topsoil.

Findings:

The information provided in the amendment does not meet the regulatory requirements of this section. Prior to approval, the permittee must provide the following in accordance with:

R645-301-120, R645-301-222 and R645-301-223, The survey report does not include laboratory analyses results or a discussion on soil chemical characterization. There are inconsistencies between the text and Soils Map A within the Order 1 soil survey for soil descriptions, map units and soil families.

R645-301-224 and R645-301-232.200, Soil Unit D side-cast soil materials need to be sampled and characterized for suitability as substitute topsoil since native topsoil

is scarce and salvage of native soils provides very limited topsoil resources available for soil redistribution.

LAND USE RESOURCE INFORMATION

Regulatory Reference: R645-301-411

Analysis:

The mining and reclamation plan contains land use information about the existing mine, and approved amendment for the Link Canyon No. 1 substation has information about the Forest Service classification of the Link Canyon area. The proposed Link Canyon facilities appear to be in compliance with Forest Service management plans.

Findings:

Information provided in the proposal is considered adequate to meet the requirements of this section of the regulations.

OPERATION PLAN

MINING OPERATIONS AND FACILITIES

Regulatory Reference: R645-301-529; R645-301-513.500; 30 CFR 75.1711-3

Analysis:

Facilities And Structures Management of Mine Openings

The connection of the underground works to the #2 substation location will be done by drilling four two inch boreholes from in-Mine to the surface, breaking out just above the tramway bench mentioned earlier. As of the writing of this technical analysis, the communication borehole has been completed and cased. The three remaining holes (high voltage power conductor cable holes) are being drilled, and have experienced difficulties similar to those encountered at the original substation location.

The installation of the electrical substation 0.4 miles up-canyon from the original location will not utilize a portal breakout. There will be no mine opening to manage or regulate.

Link Canyon Substation

The Link Canyon substation and power line will create an additional 0.21 acres of disturbance.

Findings:

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

AIR POLLUTION CONTROL PLAN

Regulatory Reference: R645-301-420

Analysis:

The applicant proposes no changes that should affect the Air Quality Approval Order.

Findings:

Information provided in the proposal is considered adequate to meet the requirements of this section of the regulations.

FISH AND WILDLIFE INFORMATION

Regulatory Reference: R645-301-333

Analysis:

Fish and Wildlife Protection

Golden eagles are sometimes sensitive to human disturbance during the nesting period, and the Fish and Wildlife Service recommends a one-half mile buffer zone be maintained from January 1 to August 31; however, there is some latitude to adjust these dates based on local conditions. The applicant commits in the current mining and reclamation plan to avoid the nests in the Link Canyon area and to delay construction until after August 15, 1998. After the facilities are in place, very little mining activity will occur in the area with only emergency maintenance and monthly electrical inspections required.

The commitment in the plan to delay construction until after August 15, 1998, was made specifically for the No. 1 substation. The applicant should commit to not begin construction

during the nesting season unless a survey shows that nests within one-half mile of the disturbance are not being used. If construction begins before and continues into the nesting season, any birds wanting to nest in the area would be able to choose if they can tolerate the disturbance. Because major activity at the site is not expected to continue past the construction period, and because the nests are not extremely close to the proposed substation, there should be few long-term effects.

Link Canyon also contains high priority deer and elk winter range, and it is preferred that the area not be disturbed from November 1 through May 15. The current plan says surface activities will be curtailed from November 1 through April 1, but it does not say construction will not be done during this period. However, because high priority habitat does not fall within the definition of "habitat of unusually high value," the Division cannot make this a requirement. The applicant should avoid visiting the site as much as possible during the winter, and it would be best to avoid disturbance during the morning and evening hours.

Threatened and Endangered Species

The Fish and Wildlife Service reviewed the plan for the Link Canyon substation and Laura Romin commented verbally in a telephone conversation January 18, 2000. The only concern she expressed was about raptors nesting near the proposed facilities, and she felt that with the requirements the Division is making, raptors should be adequately protected. Ms. Romin did not have any concerns for threatened or endangered species and concurred with the Division's assessment that none would be adversely affected.

Findings:

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

R645-301-333, The applicant should commit to not begin construction during the raptor nesting season unless surveys show that nests within one-half mile of the disturbance are not being used.

TOPSOIL AND SUBSOIL

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

Analysis:

The Analysis section discusses operation information for the proposed, substation and power line borehole in Link Canyon as follows:

- Topsoil and Subsoil Removal
- Topsoil Substitutes and Supplements
- Topsoil Storage

Topsoil and Subsoil Removal

Link Canyon Substation-1

For the Link Canyon Substation 1 disturbed area, the A and C horizons will be removed together and stored on the pad out slope. The A horizon is between 6 to 8 inches deep with the C horizons extending down to 20 inches. Therefore, topsoil and subsoil will be salvaged together to an average depth of at least 19 inches across the site during construction of the Substation pad and access road. In-situ rock, cobbles and boulders, will be left in and on the surface of the side cast soils as resource protection.

Although the projected disturbed area is 0.28 acres, the actual projected area of soil disturbance is 0.08 acres. Based on a 20 inch topsoil salvage depth, 224 cubic yards of topsoil will be salvaged from the 0.08 acres. As shown on Plate 5-2D, the entire disturbed area is 0.28 acres, and the actual surface disturbance area for cut and fill (ASCAs 1,2, & 3) is 0.18 acres. The 0.08 acres is based on actual cut-slope area with the remainder 0.10 acres as pad and out slope fill. The cut and fill boundary is shown on Plate 5-2D; everything above the line is cut and below the line is fill.

Since the side-cast topsoil will cover the original topsoil surface on a portion of the slope below the pad, the un-salvaged topsoil will be preserved in-place by using a marker layer, or marker flagging, to mark the proximity of the original, undisturbed topsoil surface. During excavation of the stockpiled side-cast topsoil during reclamation, the flagging will help prevent damage of the original topsoil by marking the undisturbed surface. To insure that the original soil surface will be located during reclamation excavation of the side-cast stockpiled topsoil, a 3-inch wide polyethylene underground warning tape marker will be used as flagging and will be placed on eight foot centerline grid pattern.

Link Canyon Substation-2

Soil salvage depth at Substation number 2 pad is based on Division guidelines and by field observation of root distribution. *Suitability based on guideline criteria cannot be made because soil testing results are not included in the soil survey.* The Order-1 soil survey in Appendix 2-6 states that suitable soil for plant growth of native species basically exists above weathered and hard bedrock. Topsoil is not well-defined and soil materials are mixed without distinct layers. The presence of roots in the soil above the underlying bedrock indicates no significant restricting zones. Based on root distribution, 51 cubic yards of soil are available for salvage from the undisturbed soils as shown in table below.

Link Canyon Substation

As discussed in the amendment, the A and C horizons will be removed together from the salvage area without segregation. No soil will be salvaged from the old tramway road or from Soil Map Unit D since these areas are previously disturbed and Unit D is mostly bedrock or covered with side cast material from the old tramway road. The amendment states that actual soil salvage volumes may differ from the total and are dependant upon field conditions found during construction. *However, the plan does not state that a soils specialist qualified in making field salvage determinations will be present during soil salvage operations.*

Soil Map Unit	Suitable Soil Thickness (inches)	Average Salvage (inches)	Soil Map Area sq. ft.	Soil Salvage Volume (CY)
A	18 to 30	24	612	24
B	2 to 12	8	579	14
C	4 to 8	6	473	9
D	0	0	0	0
E	6 to 12	8	28	1
F	0 to 10	5	198	3
Total				51

Topsoil Substitutes and Supplements

Link Canyon Substation-1

Since the topsoil is thin (6 to 8 inches), the C horizon subsoil will be salvaged with the A-horizon topsoil. Based on analysis results for the C horizon subsoils as shown in Table 1 of Appendix 2-6, there are no problems associated with the C horizon subsoils being used as substitute topsoil.

Link Canyon Substation-2

The amendment does not propose use of substitute topsoil. Furthermore, the amendment states that no soil will be redistributed on the Substation No. 2 disturbed area portions of the old tramway road and out slope. However, these areas will need to be reclaimed at reclamation time to meet revegetation standards, and will require soil redistribution. Based on the 51 cubic yards of salvaged topsoil over the 0.21 acre disturbed area, only 1.8 inches of redistributed soil is available to cover shale and weathered bedrock material. The 1.8 inches of soil cover over shale

and weathered bedrock is not adequate for revegetation. *Therefore, additional soil resources will be required to meet revegetation requirements.*

Soil Unit-D is composed of road cut and rocky side cast material from the old tramway road. According to the Order-1 soil survey, mixed rock and loamy soil materials range up to about 20 inches thick with bedrock exposed in places. Based on soil suitability findings, Unit-D side cast soil materials may provide additional substitute topsoil resource material to augment the limited amounts of native, undisturbed topsoil resources.

Topsoil Storage

Link Canyon Substation-1

Soils salvaged from the Link Canyon Substation-1 area will be stored on the pad out slope. The out slope stockpiled soil will be protected by placing berms and/or silt fences at the base of the slope. Additionally, the soil will be seeded with the seed mix specified in Section 3.30 of the MRP.

Topsoil signs will be placed on the Link Canyon Substation-1 pad out slopes identifying the out slopes as "TOPSOIL." Since the Link Canyon Substation-1 disturbed area is located within cattle grazing areas of the U.S. Forest Service, the amendment states that pad out slopes will be fenced to prevent damage from cattle grazing to the stockpiled topsoil. Plate 5-2D, Detail of Link Canyon Surface Facilities, shows the link fence enclosing the topsoil stockpile out slope. An additional link fence shown is placed to protect the substation pad area.

Since the soil survey only describes soils down to 20 inches, the type and quality of residuum or colluvium material in deeper cuts is unknown. Since the topsoil cannot be contaminated from other less desirable cut or fill materials, segregation and placement of the salvaged topsoil will help preserve the topsoil without contamination from the other cut material. The salvaged topsoil will be removed first and placed on the south end of the pad out slope. The remaining excavated materials from the deeper cuts will be used as fill material for the access road and northern end of the substation pad.

Link Canyon Substation-2

The Substation No. 2 stockpile will be placed at the southern end of the pad as shown on Plate 5-2E. The stockpile will be protected with berms and/or silt fences, a three strand barbwire fence, and vegetation to control erosion. The stockpile will not be moved or disturbed until final reclamation.

Findings:

The information provided in the amendment does not meet the regulatory requirements of this section. Prior to approval, the permittee must provide the following in accordance with:

R645-301-231.100, An on-site soils specialist qualified in making field soil salvage determinations should be present during soil salvage operations.

R645-301-232.200, R645-301-232.720, and R645-301-233, Provide additional soil resources to meet revegetation requirements. Based on soil suitability findings, Unit-D side cast soil materials may provide additional substitute topsoil resource material to augment the limited amounts of native, undisturbed topsoil resources. If adequate quantities of substitute topsoil resources cannot be obtained from the site, then soil borrow will be needed.

INTERIM STABILIZATION

Regulatory Reference: R645-301-331

Analysis:

The existing mining and reclamation plan contains a plan for interim revegetation of disturbed areas. Grasses and forbs from the final reclamation seed mix will be seeded according to the plan for final revegetation. These species should provide adequate erosion control.

Findings:

Information provided in the proposal is considered adequate to meet the requirements of this section of the regulations.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: R645-301-527.100-250

Analysis:

Road Systems Transportation Facilities

The plan classifies the Link Canyon substation #2 access road as an ancillary road, and the submittal adequately addresses the requirement of R645-301-527.100.

Road Specifications

The length of the access road from the public road to the substation fence is 75 feet. Roadway width is 16 feet. Gradient, and cut and fill calculations are depicted on Plate 5-2E, as is the ditch design for the diversion routing the drainage from the undisturbed watershed LINK NO. 2, ASCA 4 and ASCA 7. The specifications for this ditch are indicated in Table 7-9, (Page 7-75). Page 5-41, paragraph 1 indicates that the access road will have a dirt surface.

The requirements of the R645 rules have been met regarding road specifications.

Maintenance Plan

Page 5-42 of submittal ACT/041/002-99G

On page 5-42, SUFCO has committed to maintaining the Link Canyon substation access road within the limits of the disturbed area perimeter. The USFS maintains the public road in this area. SUFCO has committed to repair damage to the public road in the Link Canyon area from impacts associated with mining. The requirements of the R645 rules for a road maintenance plan have been met.

Commitment to Repair Catastrophic Damage

On pages 5-41 and 42 of the submittal, SUFCO commits to repair damage created by catastrophic events for the mine access roads within the permit area. They also have a cooperative agreement with the Sevier County Road Department to repair road damage from any catastrophic event outside of the mine permit area. The requirements of the R645 rules have been met with regard to committing to repair roads both within and outside the mine permit area due to damage caused by catastrophic events.

Geotechnical Analysis

The Link Canyon public access road has been in place for many years. The permittee is not requesting alternative road specifications, nor are steep cut slopes necessary. The requirement of the R645 rules to conduct a geotechnical analysis for the installation of the Link Canyon #2 substation access road is not necessary because alternative road specifications and steep cut slopes have not been requested or designed.

Findings:

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

HYDROLOGIC INFORMATION

Regulatory Reference: R645-301-742, -301-761.

Analysis

The operator submitted Plate 5-2E identifying the extent of the watershed boundary above the Substation #2 pad. There are no standing or flowing surface water resources in the immediate vicinity of the Substation #2. The channel in Link Canyon is ephemeral. The disturbed area boundary is 0.21 acres. The undisturbed drainage above the substation is approximately 25.8 acres. A diversion ditch, sized to transport the runoff from a 10 yr-6 hr precipitation event, will route undisturbed drainage around the disrobed area, collect runoff from ASCA's #4 and #7. The collected flow will be transported down to the roadway drainage then into the main channel. Berms, gravel and silt fences will control and filter the remaining 0.12 ac. of disrobed area drainage from Substation #2.

The operator calculated a peak runoff volume of 0.2 cfs from the 25.8 acre undisturbed area above the Substation #2. A summary of the figures used to calculate the 10 yr- 6 hr precipitation event is shown in Appendix 7-13.

The designs are unclear (page 7-28) as to the route the undisturbed runoff takes after leaving the undisturbed drainage ditch, whether it flows down the road or across the road. In either case the applicant should provide information on both the drainage course and erosion protection of the channel. A culvert with down-slope protection should be provided if the drainage is transmitted across the road. If the drainage is directed down the road, the applicant should ensure that the ditch is sized and protected until it crosses the road.

Plate 5-2E shows an earthen berm around the pad to contain rainfall on the disturbed pad site. The drawing needs to show how water will be prevented from flowing down the pad access road, causing erosion and sedimentation. If there is any potential for water from the pad to overtop the water containment berm, sediment control measures must be developed to prevent off-site sediment migration.

Findings:

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

R645-301-742, The designs are unclear (page 7-28) as to the route the undisturbed runoff takes after leaving the undisturbed drainage ditch, whether it flows down the road or across the road. In either case the applicant should provide information on both

the drainage course and erosion protection of the channel.

R645-301-742, Plate 5-2E needs to show how water will be prevented from flowing down the pad access road. If there is any potential for water from the pad to overtop the water containment berm, sediment control measures must be developed to prevent off-site migration.

RECLAMATION PLAN

UTILITY INSTALLATIONS

“All utility installations associated with the SUFCO Mine will be removed following mining in accordance with the reclamation plan discussed in Section 5.40.”

Findings:

The submittal adequately addresses the requirement of R645-301-540.

POST MINING LAND USES

Regulatory Reference: R645-301-412

Analysis:

Land Use Reclamation Plan

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 proposal is considered adequate to meet the requirements of this section of the regulations.

BACKFILLING AND GRADING

Regulatory Reference R645-301-542.200

Analysis:

Backfilling Plan

Page 5-58 "The regrading plan for the Link Canyon #2 substation facility area will be to reclaim it for it's entire length. This substation facility area will be regraded by removing fill from beneath the pad to the natural ground surface and placing the fill against the adjacent cut slope. Following regrading of the substation facility area the site will be revegetated as indicated in Section 3.40 of the permit.

Plate 5-2E, Detail of Link Canyon Surface Facilities shows cross sections A-A', B-B', and C-C' and dirt volumes for cut and fill of 198 and 84 cubic yards respectively. Lines indicate that the reclamation of the substation access road and pad will return this fill to the approximate original contour of the area. Plate 5-2E has been P. E. certified by Mr. Wes Sorensen, (see 542.310).

Findings:

The submittal adequately addresses the requirements of R645-301-542.200.

MINE OPENINGS

Regulatory Reference: R645-301-542.700

Analysis:

Final Abandonment of Mine Openings and Disposal Areas

Page 5-67, SUFCO MRP Section 5.4.2.7.

The permittee has committed to control additional contributions of sediment to the Link Canyon drainage through the utilization of silt fences and/or berms. The permittee has fulfilled the requirements of the R645 regulations with regard to the reclamation plan necessary to reclaim the Link Canyon substation #2 and it's associated access road.

Findings:

The reclamation plan for the area adequately addresses the requirements of the R645 rules.

TOPSOIL AND SUBSOIL

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

Analysis:

The Analysis section discusses reclamation information as follows:

- Soil Redistribution
- Soil Stabilization

Soil Redistribution

Link Canyon Substation-1

The un-salvaged topsoil buried beneath the side-cast topsoil will be preserved for later reclamation efforts by placement of marker flagging. The flagging will mark the proximity of the original, undisturbed topsoil surface to help prevent surface damage during reclamation and excavation of the side-cast topsoil and other fill materials. The original soil surface will be located during reclamation excavation of the side-cast stockpiled topsoil and fills. Flags are placed on a 8 foot centerline grid pattern.

Final reclamation of the pad will include the removal of the substation equipment and replacement of the fills and soils stored in the pad area. The plan states that pre-existing slopes will be restored to AOC using the side-cast fill materials stored in the pad and road out slopes (pp 5-58 and 5-67). Topsoil from the pad out slope topsoil storage area will be redistributed over the newly restored slope. The reclaimed pad, access road, and affected slopes will be fenced with a three strand barbed wire fence to prevent damage from cattle grazing during reclamation.

Link Canyon Substation-2

The amendment states that no soil will be redistributed on the Substation No. 2 disturbed area portions of the old tramway road and out slope. However, these areas will need to be reclaimed at reclamation time to meet revegetation standards, and will require soil redistribution. Based on the 51 cubic yards of salvaged topsoil over the 0.21 acre disturbed area, only 1.8 inches of redistributed soil is available to cover shale and weathered bedrock material. The 1.8 inches of soil cover over shale and weathered bedrock is not adequate for revegetation. *Therefore, additional soil resources will be required to meet revegetation requirements.*

Soil Stabilization

Link Canyon Substation

Link Canyon is a steep canyon area with an average rainfall of only 11 inches. Therefore, the applicant plans to provide additional measures and other soil stabilization techniques (e.g., deep gouging) to help assure reclamation success. As explained in the revision, deep gouging or pocking provides the following:

- alleviates soil compaction
- increases soil stability
- increases water harvesting

Since the reclaimed area is within a USFS grazing unit, the reclaimed slope will be protected from grazing by fencing.

Findings:

The information provided in the amendment does not meet the regulatory requirements of this section. Prior to approval, the permittee must provide the following in accordance with:

R645-301-242.110, Provide additional soil resources to meet adequate revegetation requirements consistent with the approved post-mining land use.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: R645-301-543.600

Analysis:

Roads

Page 5-66 and 67 of ACT/041/002-99G

The permittee has committed to the following; "The Link Canyon substation #2 access road will be reclaimed for its entire length." "This road will be closed to traffic following reclamation by virtue of its non-existence", (see 542.610).

Findings:

The submittal's commitment to reclaim the #2 substation access road is adequate to meet the reclamation requirements of the R645 rules.

REVEGETATION

Regulatory Reference: R645-301-341

Analysis:

The current mining and reclamation plan includes plans for revegetating the main mine facilities area, and this plan, including the success standards, is mostly adequate for the proposed Link Canyon facilities. There are problems with the topsoil plan and potentially with the revegetation success standard, however.

The applicant will be responsible for revegetation of the entire site, and it is not clear from information in the application if this can be done successfully. The applicant has proposed to only salvage and redistribute soil in the areas not previously disturbed. Using this plan, previously undisturbed areas would receive about nine inches of stockpiled soil at reclamation, and this would be adequate. However, no soil would be salvaged from or replaced on previously disturbed areas, and there is no information in the application indicating the growth media in these areas would be suitable for revegetation. In fact, it appears the material remaining on the surface following reclamation would be mainly weathered sandstone and shale which may not be acceptable.

If the applicant uses soil salvaged from the undisturbed areas to cover the entire site, both previously disturbed and undisturbed, there would be an average of about 1.8 inches of soil. This is not adequate.

If found suitable, it is suggested the applicant consider salvaging and stockpiling some of the material sidecast during previous mining activities. It appears there could be as much as 20 inches of substitute topsoil available in this area.

Since part of the proposed disturbed area was previously disturbed by coal mining, the applicant could choose to apply the revegetation success standards in R645-301-250. To do this, the applicant would need to supply baseline vegetation cover information for previously disturbed areas. The existing standard is acceptable, but unless baseline information is gathered before redisturbance, it will be impossible to use the separate standards for previously mined areas once the substation is built.

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:

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

R645-301-341, The applicant will be responsible for revegetation of the entire site, and it is not clear from information in the application whether it will be possible to successfully revegetate areas previously disturbed by mining using the proposed plan. The application needs to include adequate soil information to make this determination, and it is doubtful whether vegetation can be successfully established on weathered sandstone and shale or on just 1.8 inches of topsoil over this kind of material.