



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)

April 19, 1999

Johnny Pappas, Senior Environmental Engineer
Cyprus Plateau Mining Company
847 Northwest Highway 191
Helper, Utah 84501

Re: Topsoil Borrow Area, Cyprus Plateau Mining Company, Star Point Mine, ACT/007/006-99C, File #2, Carbon County, Utah

Dear Mr. Pappas:

The Division has reviewed your February 17, 1999 application to permit a topsoil borrow site at the Starpoint Mine. The application has been reviewed by Senior Reclamation Specialists Paul Baker, Bob Davidson, Pete Hess, Jim Smith, Wayne Western, and Mike Suflita. The following technical analysis is provided for your review and response by May 7, 1999.

TECHNICAL ANALYSIS:

ADMINISTRATIVE INFORMATION

RIGHT OF ENTRY

Regulatory Reference: R645-301-114

Analysis:

The applicant owns the property on which the topsoil borrow area would be located. Appendix 1-1 contains a letter from Utah Railway Company giving Cyprus Plateau Mining Corporation permission to use the old railroad grade known as the Wattis Branch as a transportation corridor for hauling topsoil and other material for reclamation purposes. This complies with the requirements of this section of the regulations.

Findings:

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

ENVIRONMENTAL RESOURCE INFORMATION

HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

Regulatory Reference: R645-301-411.140

Analysis:

Cultural resources information is in Appendix 4-1 and summarized in Chapter 4 of Exhibit 233. The area contains a historic trash scatter with tobacco tins and some cans. Intermixed in this area was a prehistoric gray quartzite secondary flake. This site was not considered significant. Appendix 4-1 contains a map showing the area that was inventoried.

The area contains no cemeteries, public parks, or units of the National System of Trails or the Wild and Scenic Rivers System.

Findings:

Information provided in the proposal is considered adequate to meet the requirements of this section of the regulations. The Division should recommend to the Division of State History that there will be no effects on cultural resources.

SOILS RESOURCE INFORMATION

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

Analysis:

Chapter 2, Soils, Sections 210 through 224, discuss soil resources within a proposed topsoil borrow area. The borrow area is located approximately 1 mile northeast of the Star Point Mine tipple area and Wattis, Utah. Relevant soils information contained in the amendment includes a current Order I soil survey, published Order III soil survey, and soil characterizations. This Analysis section discusses resource information as follows:

- Prime Farmland Investigation
- Soil Survey Information
- Soil Characterization

Prime Farmland Investigation

During the Order-I soil survey, a Prime Farmland survey of the borrow area was conducted. No evidence of past soil cultivation in the soil borrow area was found during the site

Deficiencies From Amendment 96C

ACT/007/006-99C

April 19, 1999

Page 3

investigation. The amendment identifies that this conclusion is shared both by the soil survey staff and Leland Sasser of the Price area Natural Resource Conservation Service (NRCS). Therefore, based on the Order-I soil survey and personal communication with Leland Sasser of the NRCS, no Prime Farmland exists within the Topsoil Borrow area.

Soil Survey Information

The soil survey information contains both general and site specific surveys as follows:

(1) General, Third Order Soil Survey

Appendix 2-2 includes relevant soil descriptions and information extracted from the Carbon County Soil Survey, published by the United States Department of Agriculture, Soil Conservation Service, National Cooperative Soil Survey, issued in June 1988.

(2) Site specific, First Order Soil Surveys

A site specific Order-I soil survey was performed and prepared by Mr. James Nyenhuis, Certified Professional Soil Scientist (ARCPACS #2753). The Order-I soil survey was conducted in October 1998 and is contained in Appendix 2-1 as prepared by Mt. Nebo Scientific, Inc. Drawing 2-1(A) is the Order-I soils map of the borrow area and also shows soil test pit locations.

All mapping and soil survey work were performed according to the standards of the National Cooperative Soil Survey. The First Order Soil Survey for the proposed topsoil borrow area was correlated with the published National Cooperative Soil Survey for Carbon County. According to the published NRCS report, the borrow area was mapped as Strych very stony loam, 3 to 15 percent slopes (NRCS map unit 113) Steep side slopes along the northwest edge of the borrow area included the Gerst-Badland-Rubbleland Complex, 15 to 50 percent slopes (NRCS map unit 33).

Based on the site-specific soil descriptions, and laboratory data, the two dominant soils on the proposed soil borrow area do not classify as Strych; therefore, at the present time, these two soil units do not have series names. The Order-I soil survey was in agreement with the NRCS for the Gerst-Badland-Rubbleland Complex. Soils and map units for the Star Point Soil Borrow area are identified as follows:

Map Unit

A	Calcic Argiustolls, 2 to 6 percent slopes
B	Aridic Calciustepts, 2 to 6 percent slopes
C	Gerst-Badland-Rubbleland Complex, 50 to 70 percent slopes
DL	Disturbed land

Map Unit A. Map unit A is classified as a "fine-loamy, mixed, superactive, mesic

Calcic Argiustoll” and comprises approximately 85 percent of Unit A, and is described by pits SP2, SP6, SP7, SP8 and SP10. This dominant inclusion has an argillic subsoil horizon. Two inclusions comprise the other 15 percent of Unit A. The larger 10 percent inclusion is classified as a “loamy-skeletal, mixed, superactive, mesic Aridic Calciustoll” and has a cambic horizon, rather than an argillic subsoil horizon, and was described by pit SP4. The smaller 5 percent inclusion is classified as a “fine loamy, mixed, superactive, mesic, Calcic Argiustoll,” but with a non-skeletal (<35 percent rock) “C” horizon, and is described by pit SP5.

Map Unit A is the most widespread unit of the study area, occupying 65 percent of the gently sloping alluvial fan-upland bench surface.

Calcic Argiustoll is a very deep, well drained soil which has formed in mixed alluvium from sandstone and shale. Calcic Argiustolls have a mollic epipedon (a dark-colored surface layer at least 7 inches thick, and with sufficient organic matter content to meet mollic criteria), an argillic subsoil horizon and a calcic subsoil horizon. Slopes are 300 to 400 feet long and are linear, slightly concave, or slightly convex. The present vegetation is mainly big sagebrush; mixed grasses including crested wheatgrass, Indian ricegrass, and Salina wildrye; black sagebrush; broom snakeweed; galleta; and sparse, scattered pinyon and Utah juniper.

Map Unit B. Map Unit B is a very deep, well drained soil and is classified as a “loamy-skeletal, mixed, superactive, mesic, Aridic Calciustep,” and is described by pit locations SP1, SP3, and SP9. No inclusions were noted in this map unit.

Map Unit B is located on slightly convex areas that have more surface rock, often cobbles and stones, and a vegetation of more pinyon and Utah juniper, often in small groves, and less grass and sagebrush than Map Unit A. In context of an alluvial fan model, Map Unit B occupies the convex, more rocky, depositional fingers that traverse the length of the fan surface. Map unit B occupies about 35 percent of the study area, whereas Unit A occupies the 65 percent.

Map Unit C. A steep sideslope located on the northwest edge of the upland bench study area is mapped within the NRCS survey as Map Unit 33 - Gerst-Badland-Rubbleland Complex, 15 to 50 percent slopes. *Both Appendix 2-1 and Chapter 2 have inadvertently labeled Map Unit C (NRCS Map Unit 33) slopes as 50 to 70 percent. These higher percent slopes are classified within the NRCS report as Map Unit 34, Gerst-Badland-Rubbleland Complex, 50 to 70 percent slopes.* Map Unit C is 45 percent Gerst extremely stony loam, eroded; 25 percent Badland; 20 percent Rubbleland; and 10 percent other soils and miscellaneous areas including rock outcrop. The components of this unit area are intricately intermingled, and therefore, the map unit is called a complex.

Map Unit D. The disturbed land map unit is comprised of the abandoned railroad grade embankment located in the southwest portion of the study area. The majority of the railway materials have been removed from atop the embankment. The embankment is currently used as an access route and is composed of compacted, crushed-rock fill and is in a stable, non-eroded

condition. The embankment has not been reclaimed, but has natural vegetation on the side slopes.

Soil Characterization

Soil pedons were characterized by the soil horizons at each sampling location. All profile descriptions are given in both table and text format, with field notes recorded on standard NRCS "232" forms. Photos were taken at each pit location, with a general photo of the study alluvial fan area showing landscape and vegetation.

The soil horizons at each sampling location were sampled and characterized according to the State of Utah Division of Oil, Gas and Mining (DOGGM) guidelines for topsoil and overburden¹. Sampled parameters included: pH, electrical conductivity (EC); saturation percent; calcium, magnesium, and sodium; sodium adsorption ratio (SAR); texture including sand, very fine sand, silt, and clay; organic matter percent; calcium carbonate percent; Boron; and Selenium. Total Kjeldahl Nitrogen (TKN), Nitrate Nitrogen, Total Organic Carbon (TOC), and 1/3 bar and 15 bar water capacity were not analyzed. TKN, Nitrate Nitrogen, and TOC are not necessary given that organic matter percent will be determined. Available water capacity is estimated through the use of soil texture and saturation percent. Rock fragment content (% by volume), and Munsell color were determined in the field by Mr Nyenhuis.

No unacceptable criteria were found for salvageable soils and substitute soils except for percent rock content within the mine site disturbance or proposed facilities area. Although DOGM suitability criteria considers >30% (by volume) rock fragments (for both gravels <3" in size and cobbles 3 to 10" in size) to be unacceptable, and >10% stones and boulders >10" in size to also be unacceptable, the recent trend is to salvage "native soils" with "intrinsic rock content." Appendix 2-2 reports that native soils can be salvaged containing a higher rock content than the DOGM guidelines deems acceptable. Ultimate site reclaimability using these rocky soils enhances reclamation success by providing an environment similar to native conditions. Higher rock content soils provide for a more stable reclaimed surface, aid in water harvesting and ultimate water holding capacity of interstitial soils, and create wildlife habitat and niches on the surface where surface boulders and larger cobble sized rocks are placed.

In summary, all soil materials in Map Units A and B are suitable and acceptable throughout the ten-foot depth of sampling and evaluation for use in reclamation activities as a borrow source.

Findings:

This section of the submittal does not fulfill the requirements of:

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.

R645-301-222 and R645-301-120, Both Appendix 2-1 and Chapter 2 have inadvertently labeled Map Unit C (NRCS Map Unit 33) slopes as 50 to 70 percent. These higher percent slopes are classified with the NRCS Map Unit 34, Gerst-Badland-Rubbleland Complex, 50 to 70 percent slopes.

OPERATION PLAN

TOPSOIL AND SUBSOIL

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

Analysis:

Chapter 2, Soils, Sections 230 through 234 discusses the soil's operation plan for the proposed Starpoint Topsoil Borrow Area amendment. Topsoil protection incorporates traditional methods of salvaging/stockpiling during borrow operations. Relevant analysis information includes soil salvage, stockpiling, and topsoil substitutes and supplements. The Analysis section discusses operation information as follows:

- Topsoil Salvage
- Subsoil Removal
- Temporary Topsoil Storage
- Substitute Topsoil

Topsoil Salvage

For the purpose of maximizing topsoil recovery during construction, all topsoil salvage should occur under the on-site supervision of a Soil Scientist. Topsoil salvage and protection is discussed within the amendment for (1) Topsoil Unit A and B areas and (2) Gerst-Badland-Rubbleland Complex areas.

(1) Topsoil Unit A and B areas

Topsoil salvage areas are identified in Appendix 2-1 as Map Units A and B which are shown on Map 2-1 (A). Based on the Order-I soil survey, the A horizon topsoil is approximately 10 inches thick, and will be removed and placed in the soil storage pile. Volume calculations approximate 26,740 cy of soil can be salvaged from the site and used to reclaim the borrow area. The soil salvage operations are staged (Map 5-1), with approximately 15,690 cy salvaged during Stage 1, and 11,050 cy salvaged during Stage 2 and live hauled to the Stage 1 area. Approximately 4.640 cy of topsoil will be taken from the temporary soil stockpile and distributed

with the 11,050 cy (15,690 cy total) to cover the Stage 1 area. If the borrow soils in Stage 2 area are not needed for the mine site reclamation, then the topsoil salvaged from Stage 1 will be re-distributed over the Stage 1 borrow area at a depth of approximately 10 inches.

Topsoil Salvage Areas and Volumes			
Soil Map Unit	depth (in)	Acres	Volume (yd³)
A	10		15,690
B	10		11,050
C	0		0
DL	0		0
Total	10 avg	19.98	26,740

The amendment states that if Map Units A and B will be disturbed outside the soil harvest boundary, 10 inches of the A horizon will be salvaged and stockpiled with the soils salvaged from within the soil salvage boundary. *However, the amendment is unclear concerning whether topsoil will be salvaged from the temporary access roads prior to construction. All topsoil will be removed from all areas to be disturbed.*

(2) *Gerst-Badland-Rubbleland Complex areas*

The Topsoil Borrow Amendment Chapter 2 and Appendix 2-1 both conclude that the Gerst-Badland-Rubbleland Complex mapping unit is not recommended for any topsoil salvage. The amendment states that no soil will be salvaged within the Gerst-Badland-Rubbleland Complex areas should any disturbance occur within this mapping unit (Unit C). The soils Map 2-1 (A) shows that Map Unit C lies within the northwest boundary of the disturbance area. Furthermore, Map 5-1, shows that soil harvest disturbance will occur directly over Map Unit C.

The NRCS soil survey identifies the Gerst-Badland-Rubbleland Complex mapping unit (#33) as containing significant amounts of soils - 40% Gerst extremely stony loam and 15% other soils. Gerst soils support a significant vegetation community with an overstory of pinyon and Utah juniper with a 15 percent canopy, and understory vegetation with 40 percent grasses, 20 percent forbs, and 40 percent shrubs. These "rocky" soils have intrinsic value for restoring Gerst-Badland-Rubbleland Complex slopes and surfaces during reclamation to match current soil and vegetation conditions. The current vegetation community evolved to fit environmental conditions as they currently exist.

Successful reclamation requires the same soil and rock parameters as currently exist to establish revegetation success standards. The indigenous Gerst-Badland-Rubbleland Complex soils and rock material need to be salvaged and protected in like manner to map Units A and B soils. Since topsoil is less than six inches thick and soils are intricately intermingled, the operator may remove the topsoil and the unconsolidated materials immediately below the topsoil and treat the mixture as topsoil. Salvaged Gerst-Badland-Rubbleland Complex topsoil needs to be segregated and stockpiled separately from Map Units A and B topsoil.

Subsoil Removal

Subsoil removed from the borrow area will be transported directly to the reclamation site and placed. Approximately 242,900 cubic yards of topsoil and subsoil is potentially available from the borrow area. Subtracting the 10-inches of A horizon topsoil, a potential volume of 216,160 cubic yards of subsoil is available as substitute topsoil from the site and may be removed from 10 inches and 10 feet. Approximately 113,950 cubic yards will be available from the Stage 1 area and 101,640 cubic yards from the Stage 2 area.

Temporary Topsoil Storage

The first 10 inches, Horizon A, will be stripped and stored in the northeast corner of the borrow site within the disturbed area boundary (Drawing 5-1, Chapter 5 of Exhibit 233). The soils will be stored only as long as it takes to salvage the remaining horizons to be used for reclamation of the Star Point Mine site. The stockpile will be constructed with minimal soil disturbance.

The stockpile will be constructed in horizontal lifts for 1.5 to 2.0 feet. Tracked equipment will be used to reduce compaction. The pile will be graded to a maximum slope of 2:1. The vegetation removed with the 10 inches of Horizon A will be incorporated into or placed on top of the stockpile.

Substitute Topsoil

No unacceptable criteria were found for salvageable soils and substitute soils except for percent rock content within the mine site disturbance or proposed facilities area. Although DOGM suitability criteria considers >30% (by volume) rock fragments (for both gravels <3" in size and cobbles 3 to 10" in size) to be unacceptable, and >10% stones and boulders >10" in size to also be unacceptable, the recent trend is to salvage "native soils" with "intrinsic rock content." Appendix 2-2 reports that native soils can be salvaged containing a higher rock content than the DOGM guidelines deems acceptable. Ultimate site reclaimability using these rocky soils enhances reclamation success by providing an environment similar to native conditions. Higher rock content soils provide for a more stable reclaimed surface, aid in water harvesting and ultimate water holding capacity of interstitial soils, and create wildlife habitat and niches on the surface where surface boulders and larger cobble sized rocks are placed.

Findings:

This section of the submittal does not fulfill the requirements of:

R645-301-232.100 and R645-301-120, All topsoil must be removed from all areas to be disturbed:

- The amendment is unclear concerning whether topsoil will be salvaged from the temporary access roads prior to construction.
- Salvage indigenous Gerst-Badland-Rubbleland Complex soils and rock material from map Unit C. Since topsoil is less than six inches thick and soils are intricately intermingled, the operator may remove the topsoil and the unconsolidated materials immediately below the topsoil and treat the mixture as topsoil. Salvaged Gerst-Badland-Rubbleland Complex topsoil needs to be segregated and stockpiled separately from Map Units A and B topsoil.

Recommendations:

For the purpose of maximizing topsoil recovery, all topsoil salvage should occur under the on-site supervision of a Soil Scientist.

RECLAMATION PLAN

TOPSOIL AND SUBSOIL

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

Analysis:

Chapter 2, Soils, Sections R645-301-240 through -244, discusses the soil's reclamation plan for the proposed West Ridge Mine. The Analysis section discusses reclamation information as follows:

- Soil Redistribution
- Soil Nutrients and Amendments
- Soil Stabilization

Soil Redistribution

The re-contoured surface will be ripped or loosened (see approved MRP, Chapter 3 and

Section 244) after the borrow soil has been removed. Ripping will be between 12 and 24 inches for reducing surface compaction, and providing a roughened surface to assure topsoil adherence and help promote root penetration. The temporarily stockpiled soils will be distributed to the re-contoured loosened disturbed surface. Maps 5-2, 5-3 and 5-4 show where topsoil will be distributed. Based on the 26,740 cy of salvaged topsoil and an estimated 19.9 acres, approximately 10 inches of soil will be replaced in the reclaimed area.

To help prevent soil compaction, soil moving equipment will refrain from unnecessary operation over spread topsoil. Front-end-loaders and other wheel mounted equipment will be used to transport soil. However, only track-mounted equipment will be used to spread topsoil to help minimize compaction. Replaced topsoil will be loosened prior to seeding.

Soil Nutrients and Amendments

Refer to Section 243 and Chapter 3 of the approved MRP for soil nutrient and amendments.

Soil Stabilization

Erosion control measures may include but will not be limited to mulching, surface roughening and deep gouging. Refer to Section 243 and Chapter 3 of the approved MRP for additional details.

Findings:

The requirements of this section of the regulations are considered adequate.

VEGETATION RESOURCE INFORMATION

Regulatory Reference: R645-301-321

Analysis:

Detailed vegetation information is in Appendix 3-1 and was gathered in 1998. The proposed topsoil borrow area contains a sagebrush/grass community with scattered pinyon and juniper trees. According to the vegetation survey, it was probably once a mature pinyon/juniper community that was disturbed by chaining or other range improvement activities.

The proposed borrow area had 57.63% cover, and the majority of the cover was from grasses (54.24% relative cover). Dominant grasses were blue grama, and Salina wild rye. Shrubs had 42.39% relative cover, and the dominant species were black sage, Wyoming big sage,

and broom snakeweed.

The proposed reference area had a total of 58.13% cover, and relative cover was distributed in a similar manner to the proposed disturbed area. The same species were dominant, and the cover values were not different statistically.

Production in the proposed disturbed and reference areas was 850 and 1000 pounds per acre, respectively, and both areas were rated as being in good range condition. Although these values are estimates from the Natural Resources Conservation Service and cannot be compared statistically, they are similar.

Woody plant density was statistically higher in the proposed disturbed area (11032 per acre) compared to the proposed reference area (8767 per acre). Since these values are used as a guide in developing a technical revegetation standard, the difference is not critical.

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:

Analysis:

Fish and Wildlife Information

The application text references Appendix 3-2 for wildlife information from Chris Colt of the Division of Wildlife Resources. According to the application and the letter from Mr. Colt, the borrow area is considered by Wildlife Resources to be high value big game winter range. This is also shown on Map 322.220a in the current mining and reclamation plan.

Threatened and Endangered Species Information

According to the application, there is a peregrine falcon nest that may or may not be within one mile of the proposed borrow site. Future surveys using GPS equipment should better define the nest location. The letter from Mr. Colt indicates the closest nest is 1.1 miles away. Map 322.220a in the current mining and reclamation plan shows a prairie falcon scrape which the text of the plan says was used by peregrine falcons beginning in 1996. The map confirms the information from Wildlife Resources that the closest nest is just over one mile away.

Bald eagles are the only other listed species that has a potential of being in the area, and this would only be in the winter. There are no known nesting sites in the vicinity of the proposed borrow area.

The consultant doing the vegetation survey searched for endangered, threatened, endemic, or otherwise sensitive plants species and found none. The area does not contain habitat for any listed species although it contains potential habitat for at least two species on the Bureau of Land Management sensitive species list.

Findings:

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

LAND USE RESOURCE INFORMATION

Regulatory Reference: R645-301-411

Analysis:

The proposed borrow area has been used primarily as rangeland and for wildlife habitat, but there is limited recreational use. Production in the area is presented with the vegetation information. An abandoned Utah Railway railroad grade runs through a portion of the southwest corner of the borrow area, and electrical transmission lines run parallel to the borrow area on property to the east and north. There is no farming in the area.

The area is zoned by Carbon County for mining and grazing, and there is no known previous mining activity.

Findings:

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

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: R645-301-411.141, R645-301-323

Archaeological Site and Cultural Resource Maps

Deficiencies From Amendment 96C
ACT/007/006-99C
April 19, 1999
Page 13

The one identified cultural resources site is shown on a map in Appendix 4-1 together with the location of the cultural resources survey.

Vegetation Reference Area Maps

The proposed reference area is shown on Drawing 3-1A.

Findings:

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

OPERATION PLAN

PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES

Regulatory Reference: R645-301-140

Analysis:

Since the area contains no cultural resources, no protection plan is needed.

Findings:

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

AIR POLLUTION CONTROL PLAN

Regulatory Reference: R645-301-420

Analysis:

In Section 420, the applicant commits to perform all mining activities in compliance with the requirements of the Clean Air Act. Chapter 4 of the current mining and reclamation plan contains further information about the Air Quality Approval Order and coordination with the Division of Air Quality.

Findings:

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

INTERIM STABILIZATION

Regulatory Reference: R645-301-331

Analysis:

The application does not contain a specific plan for interim stabilization. Interim stabilization is not generally required at topsoil borrow sites; however, the existing mining and reclamation plan contains an interim revegetation plan that could be used if necessary.

This regulation also requires that the applicant minimize disturbance. The application discusses ways the applicant intends to try to find other sources of growth medium to reclaim the mine. All possible alternatives should be exhausted before the borrow site is disturbed. The proposed borrow site is one of the better sagebrush/grass ranges in the area. It has an excellent mix of grasses and very desirable shrubs, and it is much preferred that the site not be disturbed.

Findings:

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

FISH AND WILDLIFE PROTECTION PLAN

Regulatory Reference: R645-301-333

Analysis:

Protection and Enhancement Plan

The regulations require a protection and mitigation plan when the permit area contains habitats of unusually high value. The proposed topsoil borrow area is in high value big game winter range, but this is not within the definition of habitat of unusually high value. Nevertheless, it is recommended there be no disturbance between December 1 and April 15.

Endangered and Threatened Species and Bald and Golden Eagles

The letter from Chris Colt of the Division of Wildlife Resources contained in Appendix 3-2 says the peregrine falcon nests are far enough away from the proposed activities and that they are screened well enough that there should be no effect on nesting birds.

Wetlands and Habitats of Unusually High Value for Fish and Wildlife

The area is an upland site with no indication of wetlands or riparian areas. As discussed above, it is not habitat of unusually high value for wintering elk and deer.

Findings:

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

RECLAMATION PLAN

LAND USE RECLAMATION PLAN

Regulatory Reference: R645-301-412

Analysis:

The applicant has not proposed an alternative postmining land use. Reclamation activities are intended to restore the premining land uses of grazing and wildlife habitat. The procedures needed to achieve the postmining land use are detailed in other sections of the application and existing mining and reclamation plan, especially those sections dealing with soils and biology.

Findings:

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

REVEGETATION

Regulatory Reference: R645-301-341

Analysis:

Revegetation Plan

Once the borrowed soils have been removed, the borrow area will be regraded, ripped to relieve compaction, and deep gouged or similarly scarified. Tables 341.220c and 341.220d in Section 341 of the current mining and reclamation plan show seed and planting mixes that would be used.

The seed and planting mixes in Tables 341.220c and d are designed for sagebrush areas. A few changes should be made, however. Crested wheatgrass is an introduced species that does very well in sites like this, but it does not meet the criteria in R645-301-353.120 for introduced species. It should be eliminated from the seed mix.

In the past, the Division has routinely approved yellow sweet clover for final reclamation on the premise that it increases soil microbial activity. There are indications this species may have allelopathic properties, and while it is highly palatable, it can also be toxic to livestock and wildlife if eaten at the right developmental stage. The Division recommends this species be removed from the seed mix or that the amount used be reduced.

Black sage is the dominant shrub in the area, but it is not included in the seed or planting mix. It should be planted at the rate of 0.5 to 1.0 pounds pure live seed per acre.

The dominant grass is blue grama, but it is also not included in the seed or planting mix. It should be included at the rate of about one pound pure live seed per acre.

“Gordon Creek” is a released variety of Wyoming big sage that originated in the Gordon Creek area just to the north of the proposed disturbed area. It is recommended this variety be used.

Seeding rates of some other species in the mix are unusually high and could be reduced. In particular, the seeding rates for serviceberry, winterfat, mountain mahogany, and northern sweetvetch could be reduced by about one-third to one-half.

Mulching will be done as shown in the current mining and reclamation plan. According to this plan, hay and/or straw will be applied before final soil surface preparation, and this will be incorporated in the soil by plowing along the contour, deep gouging, or a combination of these methods. After seeding, straw or hay mulch will be applied and anchored by either

crimping it or applying a tackifier. This mulching method has worked very well at other sites.

No irrigation is planned, and pesticides will not be used unless they are approved by the Division.

Success Standards

As discussed above, vegetation in the proposed reference and disturbed areas is very similar. The reference area is considered an acceptable standard.

The Division is required to gain approval from wildlife agencies for the woody species density standards. The standard proposed in the application is that the reclaimed area would have as many stems per acre as the reference area. If the species composition is the same as now, this would be an acceptable standard. However, some of the other shrub species from the seed mix should establish, and many of these are larger plants than black sage and Wyoming big sage. For this reason, the standard needs to be modified.

It is difficult to set an exact standard when it is not known what species will become established in the reclaimed area. However, the Division has consulted with the Division of Wildlife Resources, and the standard decided upon is 4000 plants (rather than stems) per acre of woody species. Depending on how well certain species grow after the area is seeded, it may be necessary to modify this standard. It is more likely the standard would need to be lowered than raised. If larger shrubs, such as fourwing saltbush, predominate the reclaimed area, the standard will need to be lowered. If smaller shrubs, such as black sage and Wyoming big sage, predominate, it could be necessary to raise the standard. The chosen standard is a compromise between the two situations and is the most likely scenario.

Wildlife Habitat

The guzzler and fence will be moved from the current location, and the exact site to which it will be moved will be determined in conjunction with the Division. No other enhancements are planned.

The seed mix in the mining and reclamation plan with the modifications suggested and required is adequate for this area and should provide good wildlife habitat conditions.

Findings:

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

R645-301-341, Crested wheatgrass needs to be removed from the seed mix and black sage and blue grama added.

R645-301-341, The woody species density standard needs to be changed to 4000 plants per acre.

It is recommended that yellow sweet clover be removed from the seed mix or that the seeding rate be reduced. "Gordon Creek" is a variety of Wyoming big sage from just north of the proposed disturbed area, and the Division recommends the applicant use this variety. Seeding rates for serviceberry, northern sweetvetch, mountain mahogany, and winterfat are excessive and could be reduced one-third to one-half.

RECOMMENDATIONS:

The application should not be approved until the deficiencies discussed in this memorandum are adequately addressed.

TECHNICAL ANALYSIS

ENVIRONMENTAL RESOURCE INFORMATION

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

GEOLOGIC RESOURCE INFORMATION

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

Analysis:

The topsoil borrow area is to be located on soils developed from Mancos Shale, which is dominantly marine shale with interbedded sandstone and siltstone. No exploration drill holes or subsidence monitoring are planned for the topsoil borrow area. There will be no coal mining at the site. The application contains sufficient geologic information to assist in determining the probable hydrologic consequences of the operation upon the quality and quantity of surface and ground water in the permit and adjacent areas, including the extent to which surface- and ground-water monitoring is necessary, and determining whether reclamation can be accomplished and whether the proposed operation has been designed to

prevent material damage to the hydrologic balance outside the permit area. There is no subsidence control plan or determination of potentially acid- or toxic-forming strata down to and including the stratum immediately below the coal seam to be mined.

Geologic information includes a description of the areal and structural geology of the proposed permit and adjacent, and other parameters that can influence the required reclamation. Although any significant effect is unlikely, the information can be used to show how the areal and structural geology may affect the occurrence, availability, movement, quantity, and quality of potentially impacted surface and ground water. Geologic information is based on maps, plans, and detailed site specific information in the current MRP. It is also based on geologic literature and practices; however, the references given are unclear: Stokes (1988) is referenced in the text but the reference is not included at the end of Chapter 6 and the two references given at the end of the chapter are not referred to in the text.

The Division has made no determination that additional geologic information is needed to protect the hydrologic balance, to minimize or prevent subsidence, or to meet the performance standards. Because there will be no coal or overburden other than topsoil removed at this site, the Division waives in whole or in part the requirements of the collection and analysis of borehole information required of this section.

Findings:

Geologic information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval the applicant must provide the following information:

R645-301-624.130. - Clarify references in the text of Chapter 6 and in the "References" section at the end of Chapter 6.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

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

Analysis:

Coal Resource and Geologic Information Maps

There are no coal seams to be mined, no coal or rider seams, and no coal crop lines within the proposed permit or adjacent areas.

Existing Surface Configuration Maps

Drawing 5-1 uses contours to adequately represent the existing land surface configuration of the area to be affected by the proposed topsoil borrow operation. The contours extend at least 100 feet beyond the limits of disturbances, show the premining configuration of the land and natural variations in slope, and accurately represent the range of natural slopes and geomorphic differences of the area to be disturbed.

Mine Workings Maps

There are no workings of active, inactive, or abandoned underground mines, including mine openings to the surface within the proposed permit and adjacent areas.

Monitoring Sampling Location Maps

There are no test borings and core samplings within the proposed permit and adjacent areas.

Well Maps

There are no water wells or gas and oil wells within the proposed permit area and adjacent areas.

Contour Maps

Drawing 5-1 uses contours to adequately represent the existing land surface configuration of the area to be affected by the proposed topsoil borrow operation. The contours extend at least 100 feet beyond the limits of disturbances, show the premining configuration of the land and natural variations in slope, and accurately represent the range of natural slopes and geomorphic differences of the area to be disturbed.

Findings:

Maps, plans, and cross sections of resource information provided in the PAP are considered adequate to meet the requirements of this section.

OPERATION PLAN

COAL RECOVERY

Analysis:

No coal is to be mined.

SUBSIDENCE CONTROL PLAN

Analysis:

Performance standards for subsidence control.

There will be no subsidence.

SLIDES AND OTHER DAMAGE

Analysis:

The topsoil borrow operation should not create a potential for slides or other damage that may have a potential adverse effect on public, property, health, safety, or the environment, including potential impoundment hazards.

Findings:

Operations information on Coal Recovery, Subsidence Control, and Slides and Other Damage is adequate to meet the requirements of these sections because no coal is to be mined in the proposed topsoil borrow area.

RECLAMATION PLAN

MINE OPENINGS

Analysis:

There will be no exploration holes, other drillholes or boreholes, shafts, wells, or other exposed underground openings.

Findings:

Reclamation information on Mine Openings is adequate to meet the requirements of this section.

TECHNICAL ANALYSIS:

OPERATION PLAN

ENGINEERING

Regulatory Reference: R645-301-500.

As noted above, the applicant is proposing to disturb approximately twenty acres of their property to obtain a volume of acceptable plant growth medium to assist in the reclamation of the Star Point Mine. The top ten inches stripped will be retained for the reclamation/revegetation of the disturbance. This will be done in two stages, with the top ten inches of stage two being used to recover the stage one area prior to reseeding. The lower 8.73 feet of material (216,160 cubic yards) will be utilized, if needed, for the reclamation of the Mine.

CERTIFICATION OF MAPS

Regulatory Reference: R645-301-512.120. Surface Facilities and Operations.
R645-301-521.165, Topsoil Storage Areas

Analysis:

The applicant has submitted the following maps to address the certification requirements relative to Surface Facilities and Operations.

- 1) Map 5-1---SOIL BORROW AREA TOPOGRAPHY/RUNOFF CONTROL STRUCTURES
- 2) Map 5-2---SOIL BORROW AREA TOPOGRAPHY AND STAGE 1 RECLAMATION CONTOURS
- 3) Map 5-3---SOIL BORROW AREA TOPOGRAPHY AND STAGE 2 RECLAMATION CONTOURS AND CROSS-SECTION LOCATIONS
- 4) Map 5-4---SOIL BORROW AREA CROSS-SECTIONS

All maps are P. E. certified by Mr. Richard B. White of EarthFax Engineering, Inc. and are referenced within the submittal on page 5-1 under 512.100, Cross Sections and Maps.

Findings:

The submitted maps adequately meet the certification requirements of the R645 rules regarding topsoil storage areas (surface facilities and operations).

SURFACE CONFIGURATIONS

Regulatory Reference: R645-301-512.130, -542.300.

Analysis:

**Surface Configurations.
Surface Configuration after Reclamation.**

As noted above, Map 5-3 shows the soil borrow area topography and stage 2 reclamation contours and cross section locations; Map 5-4 shows the soil borrow area cross sections relative to Map 5-3. Both are P. E. certified.

The cross sections shown on Map 5-4 are indicative of the fact that no variance from approximate original contour is needed.

Findings:

Maps 5-1, 5-2, 5-3 and 5-4 reflect the pre-disturbed, disturbed, and post reclamation contours of the borrow area as required by the aforementioned R645 rules.

PLANS AND ENGINEERING DESIGNS

Regulatory Reference: R645-301-512.200.

Analysis:

Plans and Engineering Designs

This submittal is relevant to stripping soil horizons from a 30 acre area to obtain plant growth medium for the reclamation of the Star Point Mine. There will not be any excess spoil, coal mine waste, durable rock fills, impoundments, or primary roads associated with this project. It will not be necessary to apply for a variance from the approximate original contour as part of the reclamation requirements of this disturbed area.

This regulation is not applicable to this project.

Findings:

This regulation is not applicable to this project.

COMPLIANCE WITH MSHA REGULATIONS/MSHA APPROVALS

Regulatory Reference: R645-301-513 et al.

Analysis:

This project is a topsoil/plant growth medium recovery area. There are no coal processing waste dams or embankments, no impoundments or sedimentation ponds, no spoil or processing waste areas, no refuse piles, no mine inflows, no surface coal mining activities, nor any coal mine waste fires associated with this project. This regulation is not applicable.

Findings:

MSHA does not have requirements relative to the design of topsoil borrow areas; no MSHA approvals are necessary for this project. The requirements of the aforementioned regulations are not applicable to this submittal.

INSPECTIONS

Regulatory Reference: R645-301-514, et al.

Analysis:

Engineering Inspections

This project is a topsoil recovery area. There are no refuse piles, embankments, or spoil areas within same that would require engineering designs necessitating compaction requirements. Water volumes, which may create or be considered a hazard, will not be impounded anywhere within this project.

Findings:

Engineering inspections by the permittee are not necessary for this topsoil recovery area project. This regulation is not applicable.

REPORTING AND EMERGENCY PROCEDURES

Regulatory Reference: R645-301-515.

Analysis:

Reporting and Emergency Procedures

Page 5-4 of the engineering section of this submittal addresses these requirements. This project is a topsoil recovery area; there are no refuse disposal areas or impounding structures or any other structures which might present a hazardous situation relative to pending environmental damage or the safety of the public. The design of the topsoil recovery area is such that no potential areas for slides exist; same does not incorporate any impoundments. Should the Star Point Mine be placed under temporary cessation, it is extremely doubtful that same would have any effect on this project. This regulation is not relative to the implementation of this project.

Findings:

This regulation is not relative to this project.

OPERATION PLAN

Regulatory Reference: R645-301-520., -521.

Analysis:

Operation Plan

Page 100-11 of the submittal contains a property description of the ground which is owned by and will be utilized by Cyprus Plateau to implement this topsoil recovery area. The 21.25 acres is considered a sub-area for which this permit amendment application has been submitted. The description is adequate to meet the requirements of 301-521.

Findings:

The property description within this submittal is adequate to meet the requirements of 301-521.

Regulatory Reference: R645-301-521.100 through 190

Analysis:

General

521.100---the property described on page 100-11 is not an area which has been previously mined; this regulation is not applicable.

521.111---the property described above contains no known active, inactive or abandoned underground mines or any mine openings relative to same. This regulation is not applicable.

521.112---the property described above contains no existing or previously surface mined areas. This regulation is not applicable.

521.121---the property described above contains no buildings within or within 1000 feet of the area which is to be disturbed. An existing, abandoned railroad grade (owned by the Utah Railway Company) bypasses the area. Cyprus has been granted use of same for a haul road to the Star Point operation. **It is not known if the granted permission will allow the applicant to install any necessary safety berms or allow watering of the roadway for fugitive dust suppression requirements, (MSHA and DEQ/BAQ).**

521.122---the property described above contains no known surface or subsurface man made features within the proposed permit area; the aforementioned railroad grade is adjacent to the proposed disturbance. This regulation is not applicable.

521.123---the property described above has no public roads within or within 100 feet of the proposed permit area. This regulation is not applicable.

521.124---the property described above does not contain nor will contain any spoil, waste, coal development waste, noncoal waste, dams, embankments or impoundments or water treatment or air pollution control facilities. This regulation is not applicable.

521.125---the property described above contains no impoundments or embankments constructed from coal processing or mine development waste. No such structures will be implemented within this permit area during the life of this project. This regulation is not applicable.

521.130, et al.---as indicated on page 1-2 of Exhibit 233, under 112.600, the owners of record for surface and mineral properties contiguous to this proposed permit area are listed in the approved M & RP and shown on Map 112.500a.

Property owners contiguous to this proposed topsoil borrow area are the U.S. of A., the State of Utah, and Donald Hatch of Salmon, Idaho. As previously noted, Utah Railway Company owns the abandoned track grade adjacent to this proposed area. This regulation has been adequately addressed.

Findings:

Aforementioned regulations which are relative to the topsoil borrow area permit amendment, as noted above, are adequate to address the requirements of the R645 regulations.

MINE MAPS AND PERMIT AREA MAPS

Regulatory Reference: R645-301-521.140,-521.141

Analysis:

Boundaries of Proposed Affected Areas

The boundaries of this proposed topsoil borrow area (affected area over estimated total life of the coal mining and reclamation operations) are accurately depicted on Map 5-1, and Map 112.500a. Page 100-11 of the text gives the legal description and deed information relative to this site.

Findings:

The submitted information is adequate to meet the requirements of 521.140 and 141.

SIGNS AND MARKERS

Regulatory Reference: R645-301-521.200, -521.240, -521.250, -521.260

Analysis:

Signs and Markers Specifications
Mine and Permit Identification Signs
Perimeter Markers
Buffer Zone Markers

A mine permit identification sign will be posted at the point of access to the topsoil borrow area site where the roadway which will be constructed to same from the Utah Railway track grade lies. Disturbed area perimeter markers will be implemented to delineate the topsoil borrow area prior to any soil removal disturbance. No streams exist in the area of the soil borrow

area; the requirement relative to buffer zone markers is irrelevant. Topsoil markers will be placed on the topsoil storage pile in the NE corner of the borrow area site. All signs will meet standard specification requirements relative to durability and will be maintained until final bond release of this area. All information regarding the aforementioned can be found on Pages 5-7 and 5-8 of the submittal.

Findings:

The submitted information relative to the R645 rules regarding signs and markers, permit identification, perimeter markers, buffer zone, and topsoil storage area markers is adequate to meet the requirements of the R645 rules.

OPERATIONAL DESIGN CRITERIA AND PLANS

Regulatory Reference: R645-301-531.

Analysis:

General

This soil borrow area will be a stripping and reclamation operation only. There will be no impoundments, sediment ponds, coal processing waste dams, banks or embankments within same. This regulation is not applicable.

Findings:

R645-301-531 is not applicable to this project.

Regulatory Reference: R645-301-532.

Analysis:

Sediment Control

The methods to be implemented for the control of sediment include the installation of silt fences, berms, straw bales, or surface roughening techniques. Page 5-10 of this submittal describes the aforementioned. Map 5-1, SOIL BORROW AREA TOPOGRAPHY AND RUNOFF CONTROL STRUCTURES shows berm and silt fence locations; the reclamation drainage channel associated with this project (RC-1) is depicted on Map 5-2, SOIL BORROW AREA TOPOGRAPHY AND STAGE 1 RECLAMATION CONTOURS.

Sediment control measures for this soil borrow area are described in detail in Section 730 of the exhibit, and in the approved MRP. The runoff control structures within the borrow area

have been designed to convey runoff in a non-erosive manner. Sediment yields in the borrow area will be minimized by disturbing the smallest practicable area during the construction for the shortest period and by reclaiming the area suitable for reclamation as soon as practicable following the stripping operations.

Findings:

Pages 5-9 and 5-10 of the submittal are adequate to describe the sediment controls which are to be implemented for this topsoil borrow area project; the R645 rules relative to sediment control for Operational Design Criteria and Plans have been met.

ROADS

Regulatory Reference: R645-301-534.

Analysis:

Roads

There will not be any primary roads constructed in association with this topsoil borrow area. Two temporary ancillary roads will be constructed to provide access from the Utah Railway track grade into the borrow pit. The temporary roads will be constructed and maintained according to Section 534.200 of the approved mining and reclamation plan. Same will be contoured, and revegetated during the reclamation process.

The submittal commits Cyprus to utilizing County and State standards when designing and constructing any and all roads within the permit area, thus minimizing any damage to public or private property.

No acidic or toxic materials will be used for the surfacing of any roads affiliated with this project. Road surfaces will typically consist of compacted native material, possibly with some native aggregates included. Compaction will be assisted by watering to control fugitive dust when necessary.

Findings:

The minimum regulatory requirements relative to ancillary roads in the R645 rules have been adequately addressed.

SPOIL

Regulatory Reference: R645-301-535.

Analysis:

Spoil

This project is a topsoil borrow area; soil will be removed by stripping the top 9.2 feet of earth in increments by dozer, loading same using FEL and hauling by truck. There will be no coal seams exposed or mined by this project; hence, no spoil will be generated.

Findings:

As no spoil will be generated during the implementation of this project, the R645 rules relative to spoil are not applicable.

COAL MINE WASTE

Regulatory Reference: R645-301-536.

Analysis:

Coal Mine Waste

This project is a topsoil borrow area; no coal mining will be performed. No coal mine waste will be generated. These R645 rules are not applicable.

Findings:

The R645 rules relative to coal mine waste are not applicable.

REGRADED SLOPES

Regulatory Reference: R645-301-537.

Analysis:

Regraded Slopes

Exhibit 233 addresses the requirements of 537.100 and 537.200 et al. on pages 5-12 and 5-13 of the engineering section. No mining or reclamation activities will be conducted in the soil

Deficiencies From Amendment 96C

ACT/007/006-99C

April 19, 1999

Page 31

borrow area that require Division approval for alternative specifications or for steep cut slopes. Cyprus Plateau Mining Corporation is capable of meeting the regulatory requirements relative to the protection of fish, wildlife, and related environmental values, access road design certification, road classification, road maintenance, road specifications, and road design to ensure environmental protection and safety.

Any ancillary roads which will be constructed in association with this project will be temporary in nature. Drainage from same will report to the borrow area; there will be no flows associated with same off of the permitted area until after reclamation of the site.

The temporary roads will be reclaimed/revegetated upon completion of the soil procurement process.

Findings:

The requirements of R645-301-537, for Regraded Slopes has been adequately addressed.

RECLAMATION PLAN

Regulatory Reference: R645-301-540., -541.100, -541.400

Analysis:

**Reclamation Plan
Commitment to Reclaim
Reclamation Plan for Affected Lands**

Page 5-13 of Exhibit 233 commits Cyprus to submit a reclamation plan for this area within the permit area which meets the environmental protection performance standards of the State Program. Cyprus feels that Exhibit 233 honors that commitment.

Findings:

The aforementioned R645 rules have been adequately addressed by Exhibit 233.

NARRATIVES, MAPS, AND PLANS

Regulatory References: R645-301-542., -542.100, -542.200 -542.300, -542.400, -542.500, -542.600, -542.700, -542.800.

Analysis:

Reclamation Timetable
Backfilling, Grading, Compacting, Soil Stabilization
Final Surface configuration Maps and Cross Sections
Removal of Temporary Structures
Removal of Sedimentation Pond
Roads
Final Abandonment of Mine Openings and Disposal Areas
Reclamation Costs (Bond Estimate)

This analysis will cover all aforementioned regulations with the exception of 542.800, Reclamation Costs. Bond estimates should be addressed by Mr. Wayne Western, Reclamation Specialist of the DOGM SLO.

Figure 5-1, (Page 5-15) of Exhibit 233 is the reclamation timetable presented for this project. The scheduling depicted by same leaves the period from May through September vacant. The permittee plans to order seed and mulch in April; no site activities will be performed until the October through December window. This appears to be acceptable from an engineering perspective relative to the R645 rules.

Page 5-14 of Exhibit 233 indicates that upon completion of the soil salvaging activities, the site will be recontoured to the approximate proposed contours depicted on Maps 5-2 or 5-3, dependent on the degree of salvaging implemented at the site (as determined by the volume requirements necessary to reclaim the Star Point site). Upon completion of the rough grading at the borrow site, the soil which was stored in the temporary topsoil storage pile (NE corner of the borrow site) will be redistributed and prepared according to Chapter 2 of Exhibit 233.

Final surface configurations will be determined according to either Map 5-2 or 5-3, depending upon the amount of soil which is removed from the borrow. Drawing 5-4 depicts reclamation cross sections relative to Map 5-3. Although no reclamation cross sections are shown relative to Map 5-2, (Stage 1), final contours would be between the existing ground configuration shown and the reclamation contours shown for Stage 2, (Map 5-3). These maps and cross sections are adequate to meet the requirements of the R645 rules.

There are no temporary "structures" within the proposed permit area. A wildlife guzzler with a surrounding fence exists within the proposed permit area. This regulatory requirement is not applicable.

As noted previously, there are nor will there be any impoundments associated with this topsoil borrow area project. This regulatory requirement is not applicable.

All requirements relative to the R645 rules regarding roads have been previously addressed. There are no primary roads involved with this project; hence, the leaving of a road in order to support the approved post mining land use is not requested by the applicant or any of the

adjacent land owners. Access to the proposed borrow area will be temporary; same will be provided by a temporary agreement with the owner of the abandoned railroad track grade, Utah Railway. Upon reclamation of the site, the temporary access will be terminated.

Should further work be required within the borrow site, post-initial reclamation activities, it will probably be necessary for the applicant to apply for another trans-travel agreement.

No underground mine openings or waste disposal areas will exist within this proposed soil borrow area. This regulatory requirement is not applicable.

Appendix 8-1 of Exhibit 233 is relative to the reclamation costs associated with this project. These are to be reviewed by the reclamation bond specialist in the Salt Lake Office of the DOGM.

Findings:

The maps, drawings and text submitted as part of Exhibit 233 as they relate to the aforementioned regulatory requirements are felt to be adequate. The minimum regulatory requirements have been met.

RECLAMATION DESIGN CRITERIA AND PLANS

Regulatory Reference: R645-301-550. -301-551., -301-552., -301-553.

Analysis:

Reclamation Design Criteria and Plans
Casing and Sealing of Underground Openings
Permanent Features
 Small Depressions
 Permanent Impoundments
Backfilling and Grading

This project is relative to the reclamation of an underground coal mine. There are no openings to underground works within the area which is proposed to be permitted.

Small depressions ranging in depth from 12 to 24 inches will be implemented to retain moisture, minimize erosion, and assist revegetation of the area. This information appears on pages 5-16 through 5-18 of Exhibit 233.

There are no impoundments associated with this topsoil borrow area.

This is a soil borrow area; the area will be graded to achieve a near original configuration

upon completion of the soil stripping activities. Stockpiled "A" horizon material will then be spread, treated and revegetated as described in Section 240 of Exhibit 233 and Chapter 3 of the approved mining and reclamation plan. Small depressions or "pocks" (12 to 24 inches deep) will be implemented prior to seeding to enhance moisture retention and minimize erosion. In turn, off site sediment impacts will be reduced. Additional detail is provided in Section 760 of Exhibit 233. Exhibit 233 commits to reclaiming this soil borrow area in a manner consistent with the approved post-mining land use.

The removal of soil from this borrow area will not expose any coal seams or other acid or toxic forming materials to the environment. No spoil will be generated.

No coal processing waste will be stored or disposed of within this proposed permit area. No cut and fill terraces will be built at the site. No highwalls exist nor will any be built within the proposed soil borrow area. As previously noted, the soil borrow area has not been previously mined. No settled or revegetated fills currently exist or will exist within the proposed area to be permitted.

There is nothing in Exhibit 233 relative to thin or thick overburden; there are no coal seams relative to this operation.

Findings:

Exhibit 233 adequately address the requirements of the R645 rules mentioned above.

PERFORMANCE STANDARDS

Regulatory Reference: R645-301-560.

Analysis:

Performance Standards

Page 5-19 of Exhibit 233, section 560 relative to performance standards commits the applicant to conduct soil recovery and reclamation operations at the soil borrow area in a manner consistent with the approved permit and the performance standards applicable to the State Program. This meets the minimum regulatory requirements.

Findings:

Exhibit 233 adequately addresses the minimum regulatory requirements of the R645 rules relative to performance standards.

CONCLUSIONS AND RECOMMENDATIONS

Access to the proposed topsoil borrow area will be provided through a temporary agreement with Utah Railway Company via an abandoned track grade. It is recommended that should it be necessary for the permittee to build berms where necessary for the safety of haul trucks, some agreement be in place prior to same. Also, roadway watering of the grade may be necessary to suppress fugitive dust, both from a respiratory and visibility requirement, (MSHA).

If additional machine work is necessary in the borrow area, post-initial reclamation activities, the permittee will need to request another trespass agreement from Utah Railway.

With regard to the wildlife guzzler/fence which is currently located on the applicant's property, no mention is made (at least in the Engineering portion) in Exhibit 233 relative to the relocation of this device. It is recommended that this be done.

None of the previous recommendations are significant enough to prevent a recommendation for approval of this proposed permit amendment relative to a soil borrow area.

Findings:

Exhibit 233 adequately addresses the requirements of the R645 rules relative to engineering.

It is recommended that Exhibit 233 (ACT/007/006-99B) be approved as submitted.

TECHNICAL ANALYSIS

OPERATION PLAN

Regulatory Reference: R645-301-742

Analysis:

The amendment contains a description of the sediment control measures to be used. These include silt fences, and a berm between the topsoil storage pile and the excavated borrow area. Numerous references in the text in chapters two, five, and seven reference the use of these methods. See also Dwg. 5-1 which shows their location. The silt fences will be of the type in the approved MRP and, importantly, will be installed before any borrow activities are begun. These methods are typical for such operations and are expected to be adequate. The plan to only use the borrow area only if necessary and then to divide the area into two stages of operation will significantly reduce sediment losses.

There is, however, one important omission in the plan with regards to sediment control. The reclamation schedule on page 5-15 only covers the tasks related to seeding, mulching, and fertilization. There is no indication of the time interval between the end of borrowing operations and the beginning of revegetation. Page 2-13 indicates, "Should the salvage of borrow soils require more than one season, the salvaged topsoil for reclamation of the borrow area will be seeded with a quick growing vegetative cover....to help control erosion from wind and water." Page 2-14 indicates, "The stockpile will be protected from wind and water erosion by prompt establishment and maintenance of a vegetative cover (if time permits)." In both cases no mention is made of the borrow area itself and there is no definite time established. Page 5-10 also commits to "Reclaiming areas suitable for reclamation as soon as practicable following the stripping operations." Page 3-10 indicates, "Reclamation activities prior to final reclamation will, to the extent feasible, be performed contemporaneously with soil borrow operations." Neither of these are definitive as to the actual time between end of borrowing and start of reclamation. As related verbally by the Applicant, the nature of this project is to take the borrowed soil to two locations in the minesite reclamation area resulting in some delays in the removal of the soil from the borrow pit.

The leaving of the borrow area and its topsoil storage pile open for extended times causes several concerns. First, there is the risk of summer thunderstorms which can and do result in several inches of rainfall which results in substantial soil loss and could cause the soil to be washed off the new permit area. The schedule shows the reclamation beginning in October, with the thunderstorm season of July and August occurring just before. That scenario will have the entire borrow area and topsoil pile exposed to such storms.

The second concern is the growth of weeds in the borrow area if its left open for extended periods. These weed plants and seeds would then be transported to the minesite reclamation area and infect that area in addition to the new borrow area. This would create a substantial problem in the reclamation process.

Typically, the Division has approved reclamation plans with a two week interval between the time the soil is removed from an area and seeding takes place on that same area. This operation appears to need more time, however, that time should not exceed two months.

Other regulations bearing on this issue are:

R645-301-341, The plan will include, at a minimum: A detailed schedule and timetable for the completion of each major step in the revegetation plan.

R645-301-352, Contemporaneous Reclamation. Revegetation on all land that is disturbed by coal mining and reclamation operations, will occur as contemporaneously as practicable with mining operations, The Division may establish schedules that define contemporaneous reclamation.

R645-301-532, 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....

Finding:

The plan does not meet minimum regulatory requirements in its present form. The Applicant must address those deficiencies as found in this analysis and provide the following, prior to approval, in accordance either the requirements of:

R645-301-742, adequate sediment control in the form of a revised timetable and commitments to revegetate borrow and topsoil areas no longer than two months after work is finished in these areas.

Regulatory Reference R645-301-729

Analysis:

Comparison of the maps in the application to the Gentry Mountain Cumulative Hydrologic Impact Assessment (CHIA) show that the proposed borrow area is about one-quarter mile inside the CHIA boundary. This indicates the CHIA will not need to be redone and the Probable Hydrologic Consequences Determination will not need to be altered by the proposed borrow area. The borrow area is expected to cause a relatively minor impact, especially when compared to the other activities of the mining operation.

Finding:

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

Regulatory Reference: R645-301-731.200

Analysis:

The plan has no provision for surface or ground water monitoring at the new borrow area. There are only ephemeral streams near the site and no groundwater aquifers are in the area. The operation will not impound any water and no surface or ground water impacts are expected. The disturbed area is small and given all these factors it does not appear necessary to perform any monitoring at the site.

Deficiencies From Amendment 96C
ACT/007/006-99C
April 19, 1999
Page 38

Finding:

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

Regulatory Reference R645-301-731.300

Analysis:

As detailed in Chapter 2 and described in Chapter 7, soils analysis of the borrow area materials shows no acid-forming or toxic-forming materials are present at the site.

Finding:

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

Regulatory References R645-301-731.500, .600, .800; -301-733, -734, -735, -736, -738

Analysis:

Numerous regulatory references do not apply to this proposed amendment because the relevant situations are not present at the borrow site. These include no Discharges, Stream Buffer Zones, Water Rights and Replacement, Impoundments, Discharge Structures, Disposal of Excess Spoil, and Temporary Casing and Sealing of Wells.

Finding:

The information provided in the application is considered adequate to meet the requirements of these sections of the regulations.

RECLAMATION PLAN

Regulatory Reference R645-301-760

Analysis:

The reclamation plan for the borrow area is to grade and contour the site after soil removal to approximately original contour and blending the edges of the site with the

Deficiencies From Amendment 96C

ACT/007/006-99C

April 19, 1999

Page 39

surrounding land. There will be positive drainage at all points and the natural channel in the southeast corner is restored. Drawings 5-2 and 5-3 give reclamation topography for restoring the site with one and two stages of soil removal. Appendix 7-1 provides calculations for RC-1, the restored natural channel. The appropriate design of a 10-year, 6-hour storm is used and the channel appears appropriately designed.

The site is to have the stored topsoil respread with the area then being roughened with mounds and depressions having a depth of 12 to 24 inches. Then the area will be seeded, fertilized, and mulched. This is a typical treatment for reclamation and is expected to be successful.

There is a deficiency in the omission of a time schedule showing the interval between the end of borrow operations and the start of reseeded. That situation is detailed in the Operations Plan portion of this Technical Analysis and will not be covered again here.

Finding:

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

RECOMMENDATION:

Prior to approval, the requirements of R645-301-742 must be provided as detailed above.

If you have any questions please call.

Sincerely,

for 
Joseph C. Helfrich
Permit Supervisor

tam

cc: Price Field Office

O:\007006.STP\FINAL\DEF.99B