0010

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)

May 30, 2000

TO: Internal File

THRU: David Darby, Project Team Lead

FROM: Paul Baker, Reclamation Biologist

RE: Lila Canyon Significant Revision to the Horse Canyon Mining and Reclamation Plan, UtahAmerican Energy, Inc., Horse Canyon Mine, ACT/007/013-SR98(1)-3

SUMMARY:

UtahAmerican Energy, Inc., has submitted a significant revision to the plan for the Horse Canyon Mine. A new mine would be built in Lila Canyon to access coal reserves to the south of the current Horse Canyon permit area.

TECHNICAL ANALYSIS:

ADMINISTRATIVE INFORMATION

OWNERSHIP AND CONTROL INFORMATION

Regulatory Reference: R645-301-112

Analysis:

The applicant is UtahAmerican Energy, Inc., a Utah corporation. The application gives the name, address and telephone number of the applicant and its resident agent and includes the employer identification number for the applicant. UtahAmerican will pay the abandoned mine reclamation fee.

Section 112.300 of the application says ownership and control information is in Appendix 1-1, and Appendix 1-1 references Appendix 1-7 of Part "A" of the Horse Canyon mining and reclamation plan for ownership and control information. Section 112.340 says identifying information about affiliated coal mining and reclamation operations is in Appendix 1-2, and this appendix references Appendix 1-9 of Part "A" of the Horse Canyon plan for this information. The applicant has added the employer identification number for Coal Resources, Inc., UtahAmerican Energy, Inc., and has changed one of the officers for UtahAmerican.

Most of this ownership and control information has been previously approved as part of the Horse Canyon mining and reclamation plan. Some of it is hard to follow, but it is possible to determine the corporate structure.

The application is required to include the names, addresses, permit numbers, regulatory authorities, employer identification numbers, and MSHA numbers together with dates of issuance for coal mining and reclamation operations owned or controlled by the applicant or by any person that owns or controls the applicant, and this information is in Appendix 1-9 of the Horse Canyon plan and Section 112.340 of the current application. No permitted operations are shown for Coal Resources, Inc.; PennAmerican Coal, Inc.; AmCoal Holdings, Inc.; Mill Creek Mining Company; Pinski Corporation; American Coal Sales Company; West Virginia Resources, Inc.; Pennsylvania Transloading, Inc.; Sunburst Resources, Inc.; Ohio Valley Resources, Inc.; and Spring Church Coal Company. It is assumed these companies do not have associated coal mining and reclamation operations.

Section 112.500 of the text and Plates 4-1, 5-3, and 5-4 show surface and coal ownership in and contiguous to both the existing permit area and the proposed addition.

The application shows MSHA identification numbers for both the Horse Canyon and Lila Canyon Mines, but it says the refuse pile identification number has yet to be issued. The applicant will need to obtain an MSHA identification number for the refuse pile.

According to this section of the application, there are no lands, interests in lands, options, or pending bids on interests held or made by the applicant for lands contiguous to the proposed addition to the permit area. Plates 4-1 and 5-3 shows federal leases to the south of the proposed addition to the permit area that are labeled "area of future mining."

Findings:

Information in the application 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:

R645-301-112.700, The application needs to include the MSHA number for the refuse pile.

VIOLATION INFORMATION

Regulatory Reference: R645-301-113

Analysis:

According to the application, neither UtahAmerican Energy nor any subsidiary, affiliate, or persons controlled by or under common control with them has had a federal or state permit suspended or revoked in the past five years, and these same entities have not forfeited a performance bond or similar security. The application says Appendix 1-3 contains a list of violations received by affiliated companies for the past three years, but Appendix 1-3 says these violations are listed in Appendix 1-8 of the Horse Canyon mining and reclamation plan.. It appears from this information there is one violation that has yet to be terminated and that administrative proceedings are ongoing.

Information in this and the ownership and control section will need to be checked in the applicant violator system, but it appears the application contains the required information to comply with R645-301-113.

Findings:

Information provided in the application is considered adequate to satisfy the requirements of this section of the regulations.

RIGHT OF ENTRY

Regulatory Reference: R645-301-114

Analysis:

According to the application, UtahAmerican Energy has subleased 5544.01 acres of federal coal from Intermountain Power Agency (IPA). This was executed on August 24, 1998, and UtahAmerican Energy bases its right to enter on language contained in the leases and quoted in the application. The Bureau of Land Management approved the subleases on February 16, 1999. Table 1-1 shows the legal descriptions and acreages for the federal leases. The total permit area, including both permit area "A," the existing permit area, and permit area "B," the proposed addition, would be 6461.79 acres.

Parts of Sections 33 and 34, Township 15 South, Range 14 East, are in the current Horse Canyon permit area, and, according to Plate 5-4, they contain unleased federal coal. Therefore, while they may be considered part of the current permit area, the applicant has no right to mine these areas.

According to Plate 5-4 and other plates, the surface facilities would be built in Section 15 of Township 16 South, Range 14 East. The land is managed by the Bureau of Land Management, but it is not in the federal coal leases. The application includes a letter from the Bureau of Land Management indicating applications for rights of way for certain facilities have been received, but the application does not include required right of entry information for these areas.

The School and Institutional Trust Lands Administration (SITLA) commented that they administer lands in the current permit area (not the Lila Canyon Tract), including coal resources. However, the existing Horse Canyon plan is for reclamation only.

SITLA also commented that UtahAmerican Energy presently has no applications, leases, permits, rights of way, or rights of entry to conduct any activities on or within these lands. SITLA does not manage the coal resources within the proposed addition to the permit area, only the surface of some areas, so right of entry is not needed unless UtahAmerican needs surface access which is not proposed at this time.

Findings:

Information provided in the application 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:

R645-301-114, The application needs to include right of entry information for the portions of the proposed revised permit area in the E½ SE¼ and SW¼ of Section 15 of Township 16 South, Range 14 East, the proposed facilities area.

UNSUITABILITY CLAIMS

Regulatory Reference: R645-301-115

Analysis:

According to the application, the proposed addition to the permit area is not in an area designated as unsuitable for mining, and the applicant is not aware of petitions to designate the

area as unsuitable. Mining operations will not be conducted within 300 feet of an occupied dwelling, but they would be within 100 feet of an Emery County road.

The application says UtahAmerican Energy has received permission from Emery County to construct mining facilities and conduct mining operations within 100 feet of the road and refers to an agreement letter in Appendix 1-4. The agreement in this appendix is for construction of the road and requires UtahAmerican to acquire an encroachment permit from the county. The agreement acknowledges the mine would be built within 100 feet of the Emery County road. It also gives certain conditions with which UtahAmerican will need to comply when they receive the encroachment permit, but since the applicant has not yet received the encroachment permit, the agreement does not constitute approval.

Appendix 4-2 contains portions of the minutes of an Emery County Commission meeting where the commission approved the Large Scale Industrial Site Plan for the Lila Canyon Mine. The applicant's representative contends this approval constitutes approval to mine within 100 feet of the Emery County road. The applicant has not supplied the Division a copy of the portion of the site plan dealing with the road, so the Division does not know exactly what the county approved and whether this approval meets the requirements of the regulation. However, the application also includes a copy of a letter from Rex Funk, Road Supervisor for Emery County. Mr. Funk's letter says Emery County understands mining and reclamation activities would occur within 100 feet of the county road and that this issue was specifically discussed during the Planning and Zoning Commission phases of the County Permit. The letter goes on to say, "We have no problem with this issue provided that a 6' chain link fence is installed around UEI's activities at a distance of 100' from the public road as protection from any normal hazards generally associated with your industry."

The information in the letter from Mr. Funk is contradictory. He indicates mining and reclamation operations would be allowed within 100 feet of the road but then says these activities would need to be kept within a chain link fence at least 100 feet from the road. Therefore, the Division is still unsure whether mining and reclamation operations would be allowed within 100 feet of the Emery County road.

If approval, or a portion of the approval, for having the mine within 100 feet of the road is to be in Appendix 4-2, the section of the application dealing with unsuitability claims should refer to this appendix.

Findings:

Information provided in the application 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:

R645-301-115, The application needs to contain approval from the public road authority authorizing mining and reclamation operations within 100 feet of a public road. While it appears Emery County may have given this approval, information in the application is contradictory. If the approval is to be in Appendix 4-2, the section of the application dealing with unsuitability claims should reference this appendix.

PERMIT TERM, INSURANCE, PROOF OF PUBLICATION, AND FACILITIES USED IN COMMON

Regulatory Reference: R645-301-116 and -117

Analysis:

The permit term for which the applicant is applying is five years. The beginning of construction is planned for 2001 with mining operations ending in 2025. This assumes adjacent federal leases can be acquired.

A certificate of liability insurance meeting Division requirements is in Appendix 8-2 & 8-3.

Appendix 1-5 contains copies of the newspaper advertisement and proof of publication.

No facilities or structures would be used in common with another coal mining and reclamation operation.

Findings:

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

ENVIRONMENTAL RESOURCE INFORMATION

HISTORIC AND ARCHAEOLOGICAL RESOURCE INFORMATION

Regulatory Reference: R645-301-411.140

Analysis:

Appendix 4-1 of the application contains information from three cultural resource surveys, including one done specifically for the proposed facilities area. There are several cultural resource sites in the vicinity, but only an isolated artifact was found in the proposed disturbed area. One site is listed on the National Register of Historic Places. It is a tree in Horse Canyon inscribed by Sam Gilson, a prominent rancher and promoter of the uses of gilsonite.

The information in the application is considered adequate. Maps and reports on archaeological resources have been marked confidential..

There are no cemeteries in or within 100 feet of the proposed addition to the permit area, and it contains no units of the National System of Trails or Wild and Scenic Rivers system.

Findings:

Information provided in the application is considered adequate to meet the requirements of this section of the regulations. The Division must keep confidential any information that would enable a person to locate any of the cultural resource sites.

VEGETATION INFORMATION

Regulatory Reference: R645-301-321

Analysis:

Appendices 3-1 and 3-2 contain vegetation information about the Horse Canyon and "South Lease" areas. Additional information is in the existing Horse Canyon plan. These studies were done in 1981, 1982, 1983, 1985, and 1999. With the exceptions of a study by Patrick Collins in Appendix VIII-1 in the current Horse Canyon plan and a 1999 vegetation inventory in Appendix 3-2 of the application, the application does not show who conducted the studies as required in R645-301-120. According to the applicant, this information is no longer available.

The 1999 vegetation inventory was site-specific to the proposed disturbed area and nearby proposed reference area, and the following discussion concerns this report. The 1999 study includes a map showing the vegetation communities in relation to the proposed disturbance, but it does not show sample locations.

The vegetation inventory done in 1999 is for the grass/shrub community and a corresponding reference area to the west of the proposed disturbed area. Predominant species in both areas were cheatgrass, Salina wild rye, snakeweed, blue grama, needle and thread grass,

Indian ricegrass, galleta, and purple three awn. Total vegetative cover in the proposed disturbed area was 39.7%, and it was 44.8% in the reference area.

The application previously contained a copy of a report for a 1998 vegetation study. According to information in this study, vegetative cover in the proposed disturbed pinyon/juniper area was 19.7% (excluding lichens). Dominant species were Salina wild rye, Utah juniper, two-needle pinyon, and green rabbitbrush. The plants identified as green rabbitbrush were probably, instead, snakeweed. No green rabbitbrush was identified in the area in the 1999 survey, and a Division representative did not find green rabbitbrush in the area.

While the applicant is not proposing to use a pinyon/juniper community as a success standard, the application still needs to contain basic information about all communities that would be disturbed. The application includes productivity and woody plant density information for the pinyon/juniper community, but it does not include vegetative cover information for this area. Since, as discussed below, it is not necessary to do a statistical comparison between the proposed disturbed pinyon/juniper area and the revegetation reference area, the information from the 1998 report that was included in previous submittals, if revised to show correct species identifications, would fulfill this requirement. Any discussion in this report about statistical analyses should be deleted.

Although the Division would normally compare vegetation cover in the reference area statistically with cover in the proposed disturbed area, this is impossible with the data the Division anticipates is available for the pinyon/juniper area. Nevertheless, since the applicant proposes using a reference area from a different community as a success standard for the entire site, and since vegetative cover in the proposed disturbed pinyon/juniper community was so much lower than in the grass/shrub reference area, the cover data from the pinyon/juniper area should be adequate.

A table in the 1999 study shows woody plant densities in the proposed disturbed grass/shrub and pinyon/juniper communities and in the reference area. Densities were 6260, 1560, and 7200 stems per acre for these three communities, respectively. In the grass/shrub areas, 88% of the woody plants were snakeweed, a poisonous plant.

Appendix 3-7 contains productivity estimates done by George Cook, formerly of the Natural Resources Conservation Service, for the area proposed to be disturbed and associated reference area. Both the grass/shrub proposed disturbed and reference areas had production of about 850 pounds per acre, and the pinyon/juniper community had production of about 250-300 pounds per acre.

Mr. Cook rated the three areas as being in good range condition, but it is unusual for an area with 28% relative cover from cheatgrass to be considered in good range condition. It is possible that although cover from cheatgrass was high, production may have been low, and

production is the parameter used in range condition assessments.

Findings:

Information provided in the application 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:

R645-301-321, The applicant needs to supply vegetation cover information for the proposed disturbed pinyon/juniper community.

FISH AND WILDLIFE RESOURCE INFORMATION

Regulatory Reference: R645-301-322

Analysis:

Wildlife Information

Wildlife habitat is discussed in Section 322.220, and Plate 3-1 shows habitat areas for elk, mule deer, Rocky Mountain bighorn sheep, pronghorns, and raptors. According to Plate 3-1, the proposed disturbed area contains habitat for Rocky Mountain bighorn sheep and mule deer, and pronghorns and raptors are nearby. The proposed addition to the permit area includes areas of critical habitat for elk and deer, but the proposed disturbed area does not include these habitats.

Raptor surveys were conducted in the area in 1990, 1998, and 1999. Plate 3-1 shows locations of six nests within about one mile of the proposed surface facilities, and Appendix 3-5 contains further information, including two maps showing nest locations. Five of the six nests near Lila Canyon were golden eagle nests and one was a falcon scrape. According to Section 322.220, the entire permit area plus an area within 1 mile of the proposed surface facilities were surveyed for raptor nests. Plate 5-3 now shows raptor nests and subsidence limits. According to Plate 5-3, one golden eagle nest would be in the subsidence area. It is unclear whether results from the 1999 raptor survey were included on either Plate 3-1 or Plate 5-3, but the maps are considered to be adequate information for planning the mitigation and enhancement plan required in R645-301-330.

The applicant commits to conduct raptor surveys one year prior to all proposed new construction or potentially disruptive mining activity. This should be done in all suitable habitat within a one mile radius of these activities and needs to include the main facilities area. If any of the nests near the proposed facilities is active when the applicant begins construction, it may be necessary to delay the start of construction until the nest is no longer being used.

The application indicates the applicant has consulted with the Fish and Wildlife Service, the Division of Wildlife Resources, and the Bureau of Land Management concerning raptor nests in the vicinity of the mine. They determined there is a high probability golden eagle nests near the surface facilities would be abandoned.

Information about other wildlife species includes a statement that many birds of high federal interest would not inhabit the area because the intermittent stream channels lack riparian vegetation. The application also references a Division of Wildlife Resources publication entitled "Fauna of Southeastern Utah and Life Requisites Regrading their Ecosystems." This publication is available to the Division, and it contains general information about species in the area.

Threatened and Endangered Species

Table 3-1 lists seven threatened or endangered species the application says may occur in Emery county or that could be affected by the mine. Appendix 3-3 contains a letter from the Fish and Wildlife Service listing threatened and endangered species that occur in Emery county.

The proposed addition to the permit area contains habitat for some species on the list of threatened or endangered species in Emery county, but these species have not been found. Each species occurring in Emery county is discussed below.

The Fish and Wildlife Service commented that the applicant needs to assess vegetation in the proposed addition to the permit area to determine whether southwestern willow flycatcher habitat exists. According to their letter, breeding habitat is typified by areas of dense willow or willow mixed with a variety of riparian shrubs and small trees.

The application documents that the proposed addition to the permit area does not contain habitat for southwestern willow flycatchers. There are no perennial water sources or riparian areas in either the current permit area or the proposed addition, and according to verbal information from the applicant's consultant, there are few, if any, willows or similar riparian-type vegetation associated with the seeps and springs in the proposed addition to the permit area. There may have been a few willows or shrubs, but there were no dense patches as would be required by southwestern willow flycatchers.

Bald eagles are fairly common winter residents of Utah, and they could visit the area. However, they generally like to roost in large trees that do not exist in the proposed disturbed area. Therefore, it is unlikely they will be adversely affected.

Four fish species of the Upper Colorado River drainage are listed as threatened or endangered, and although the mine would not affect them directly, water usage has been determined to adversely affect these species. As discussed in the fish and wildlife protection part of this review, the mine is expected to use about 21.3 acre-feet of water annually, including water

lost through mine ventilation. Mitigation is required when the annual depletion exceeds 100 acre-feet.

Black-footed ferrets have historically been found in eastern Utah, but, with the exception of the population recently reintroduced to the Uintah Basin, there have been no confirmed sightings in recent years. If any were in the area, it is most likely they would be affected by road construction.

(Information in the following discussion on the distribution of plants is from *A Utah Flora* or is verbal information from Bob Thompson, a botanist with the Forest Service.)

Barneby reed-mustard (*Schoencrambe barnebyi*) grows at elevations of about 5600 to 5700 feet on the Chinle formation. The proposed disturbed area is at a higher elevation, and it does not contain the Chinle formation. Therefore, the area is not considered habitat for this species.

The reported elevation range for Jones cycladenia (*Cycladenia humilis* Var. *jonesii*) overlaps the proposed disturbed area, but it grows in sandy gypsiferous soils derived from the Cutler, Summerville, and Chinle formations, and these are not found in the proposed addition to the permit area.

Last chance Townsendia (*Townsendia aprica*) grows in salt desert shrub and pinyon-juniper communities on clay or clay-silt exposures of the Mancos Shale. It has been found mainly in the Fremont Junction area and not on the east side of the San Rafael Swell.

The Maguire daisy (*Erigeron maguirei*) has only been found in a few places in the San Rafael Swell and in Capitol Reef National Park in canyon bottoms in the Wingate and Navajo Sandstone formations. There is essentially no possibility this species could occur in the proposed addition to the permit area.

Three cactus species are included on the Fish and Wildlife Service list. The San Rafael cactus or Despain footcactus (*Pediocactus despainii*) is very difficult to find and grows in open pinyon/juniper communities in and on the edges of the San Rafael Swell. This is the type of habitat in the proposed disturbed area, and, according to Bob Thompson of the Forest Service, there is potential this species could occur in the area. However, the application indicates the applicant's consultant searched for this plant and did not find it.

According to Mr. Thompson, the Wright fishhook cactus (*Sclerocactus wrightiae*) also has potential of occurring in the area. It grows in salt desert shrub and shrub/grass to juniper communities in soil derived from Mancos Shale and other formations. The applicant's consultant also searched for and did not find this species.

The Winkler cactus (*Pediocactus winkleri*) is a tiny plant that grows in salt desert shrub communities at lower elevations than those in the proposed disturbed area. Its distribution is more to the west, and it is unlikely it occurs in the proposed addition to the permit area.

The Division received comments from the Fish and Wildlife Service dated April 14, 1999, and further comments dated October 14, 1999. They felt the Division had adequately responded to their concerns and did not disagree with the Division's findings concerning threatened or endangered species.

Findings:

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

LAND USE RESOURCE INFORMATION

Regulatory Reference: R645-301-411

Analysis:

Premining land uses of the proposed addition to the permit area include grazing, wildlife habitat, coal mining, and limited recreation. Grazing allotment boundaries are show on Plate 4-2, and wildlife habitat is show on Plate 3-1. Production in the grazing allotments in terms of animal unit months is shown in Table 4-3.

Boundaries of the Turtle Canyon Wilderness Study area and the areas identified in the 1999 wilderness inventory as having wilderness characteristics, both discussed below, should be shown on a land use map, such as Plate 4-2. The applicant responded to this deficiency in the previous review by indicating this information was available to the Division on a map in the environmental assessment; however, since the environmental assessment has not been issued, it is not available to the Division.

According to the application, Lila Canyon is within an area identified by the Bureau of Land Management as the Range Valley Mountain Habitat Management Plan Area. A habitat management plan was adopted in 1991 to provide management for various wildlife and for access management.

The proposed addition to the permit area does not support a wide variety of land uses because of the limited access and remote location, rugged topography, limited soils, and lack of rainfall and surface water. Water rights are discussed in Chapter 7, and water uses include stock watering and various uses for coal mining.

The land is zoned by Emery County for mining and grazing. A small portion of the proposed permit area addition overlaps with the Turtle Canyon Wilderness Study Area. The application contains a copy of the 1993 environmental assessment prepared for management of the Turtle Canyon Wilderness Study Area, and it says underground mining would be acceptable in this area.

The Bureau of Land Management's 1999 Utah Wilderness Inventory identifies areas with wilderness character in addition to the previously-identified wilderness study areas. One of these areas overlaps the proposed addition to the permit area and is very close to, and may even overlap, the proposed disturbed area. The application includes copies of two memoranda from the Bureau of Land Management. One of these says, "While the planning process is being completed on lands found to have wilderness characteristics in the 1999 Wilderness Inventory, the management prescriptions of existing land management plans do not change." Therefore, it appears the Bureau of Land Management will be managing these lands as in the past until further assessment has been completed.

There has been some previous mining activity in Lila Canyon, but it is unknown how much coal was mined. The road on the bottom of Lila Canyon was built in the 1950's to provide access for coal exploration. There is a sealed portal in the left fork of the canyon where the Sunnyside Seam was exposed and coal mined, and the coal was probably transported back through the Horse Canyon Mine. It is believed mining occurred during the 1970's or early 1980's. If mining occurred during this time period, it should have been regulated under Title V of SMCRA.

Findings:

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

R645-301-411.110, Boundaries of the Turtle Canyon Wilderness Study area and the areas identified in the 1999 wilderness inventory as having wilderness characteristics need to be shown on a land use map, such as Plate 4-2.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

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

Archaeological Site and Cultural Resource Maps

The locations of cultural and historic resources in the area are shown on Plate 4-3 and on maps in Appendix 4-1. This information is adequate but needs to be kept confidential.

Vegetation Reference Area Maps

The 1999 vegetation study includes a map showing the vegetation communities in relation to the proposed disturbance. Plate 3-2 shows vegetation communities of the proposed addition to the permit area.

Findings:

Information provided in the proposal is 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:

The proposed addition to the permit area contains no known cultural resources listed or eligible for listing in the National Register of Historic Places, public parks, or units of the National System of Trails or the Wild and Scenic Rivers system. Therefore, no protection plan is needed, and the State Historic Preservation Officer has concurred with this determination.

The Turtle Canyon Wilderness Study Area overlaps with the proposed addition to the permit area in the following locations:

Township 16 South, Range 14 East
Section 13, E½ NW¼, NE¼
Section 24, NE¼ NW¼, N½ NE¼

Township 16 South, Range 14 East
Section 19, SE¼ SW¼, Lots 3 and 4
Section 30, SW¼ NE¼

The policy of the Bureau of Land Management is to not allow surface occupancy in wilderness study areas any more than absolutely necessary and only in cases where there are valid existing rights. The applicant has not proposed surface-disturbing activities in these areas, and considering the topography, the Bureau of Land Management feels it is unlikely exploration, ventilation shafts, or other disturbance would be practical. If the applicant proposes surface-disturbing activities in these areas, they will be scrutinized very carefully.

The Bureau of Land Management has prepared two environmental analyses discussing the anticipated effects of subsidence in these areas. If subsidence is expressed on the surface, it is likely to consist of a lowering of the land elevation with some surface cracks, and there could be some disruption of the hydrologic balance. Overall, however, the Bureau of Land Management felt the effects of undermining these areas would be small.

The "Land Use Resource Information" section of this analysis discusses the 1999 Utah Wilderness Inventory. According to information from the Bureau of Land Management and contained in the application, the land will not be managed as a wilderness study area until further analyses have been completed.

Findings:

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

AIR POLLUTION CONTROL PLAN

Regulatory Reference: R645-301-420

Analysis:

Appendix 4-3 contains a copy of the Air Quality Approval Order from the Division of Air Quality. A letter in Appendix 4-3 from Jay Marshall to the Division of Air Quality says the applicant was requesting approval for a throughput of up to 2,000,000 tons per year, but the Approval Order says up to 1,500,000 tons of coal could be mined in a rolling twelve month period. Section 523 of the application indicates production should be between 1,000,000 and 1,500,000 tons per year for the first five years but that production could peak at 4,500,000 tons. Therefore, the application is consistent with the Air Quality Approval Order for the first five years. Any increase in production after five years would require amendments to both the Air Quality Approval Order and the mining and reclamation plan.

Findings:

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

INTERIM STABILIZATION

Regulatory Reference: R645-301-331

Analysis:

All incidental disturbances that will not be used as part of the operations will be revegetated with an interim seed mix. Table 3.4/3.5 is a seed mix that would be used for both interim and final revegetation. While this seed mix should provide adequate erosion protection for both interim and final reclamation, the Division recommends the applicant include one or more rhizomatous grass species to enhance vegetation cover and erosion control further.

Section 331 refers to the revegetation plan in Section 340 for further information about revegetation methods. The details of this plan are discussed under "Revegetation" below.

Findings:

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

While the species in the seed mix should be adequate for interim revegetation, the Division recommends adding at least one species of rhizomatous grass, such as western wheatgrass or thickspike wheatgrass.

SUBSIDENCE

Regulatory Reference: R645-301-332

Analysis:

According to the application, the main potential effects of subsidence would be escarpment failure and disruption of surface and ground water. One eagle nest is in the subsidence area. Protection of this nest or mitigation for its loss is discussed in detail in the section of this analysis dealing with the fish and wildlife protection plan.

Section 525.100 says limited renewable resource lands exist within the area surveyed and that limited areas were found that contribute to the long-range productivity of water supply or fiber products.

The value of the lands within the proposed addition to the permit area as renewable resource lands is discussed elsewhere in the application; however, there is no indication any of the land is not within the definition of renewable resource lands.

According to the application, ground water will probably be intercepted in the course of mining, but it is not known whether it is perched or an active recharge aquifer. If the mine was to discharge water, it could benefit wildlife, at least through the life of the mine.

The mitigation for losses of wildlife habitat through subsidence could include habitat enhancement to increase production of selected forage species, and development of off-site water sources, such as guzzlers.

Subsidence cracks are occasionally large enough to be dangerous for wildlife, livestock, and people that might be in the area. The applicant has committed in Sections 525.160 and 525.231 to restore to the extent technologically and economically feasible material damage to the surface lands. This commitment is in accordance with regulatory requirements and is considered adequate.

A standard stipulation on federal leases is that the lessee monitor the effects of underground mining on vegetation. The application includes a plan to monitor vegetation with color infrared photography every five years. This commitment is consistent with commitments other mines have made and is acceptable.

Findings:

Information provided in the application is 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

In Section 333, the application says the major impacts to wildlife in and around the mine

will be the loss of habitat during construction and through the life of the mine. It also says most wildlife will either accept the mine or adjust behavior to coexist with the operation.

Operational impacts, such as collisions with mine-associated vehicles, loss of habitat during the life of the mine, wildlife disturbance, and fragmentation of nearby habitat, are difficult to quantify but would be the greatest impacts from the mine. The Fish and Wildlife Service commented that the mine's disturbance would kill most burrowing animals and others that are less mobile. It would also result in habitat fragmentation and dislocation of some animals to less desirable or already-occupied areas. Although wildlife can coexist with mining operations, animals may be forced to adjust their behaviors and may be otherwise stressed in ways that reduce their chances for survival

The applicant has committed to train mine employees annually on environmental awareness. This will include wildlife protection measures, such as avoidance during stress periods, caution in driving, recognition of threatened or endangered species, and instructions to remove wildlife carcasses well off the road to avoid collisions with scavenging raptors. Wildlife Resources will be notified of any large game killed on the road, and the applicant will request that they be moved to safeguard raptors. The applicant will instruct personnel as to current regulations pertaining to off road vehicle and firearm use.

All suitable water encountered during mining will be discharged in a manner that it becomes available to wildlife. The applicant will need to ensure the water rights allow for this use and that the water quality is suitable. The water rights listed in Table 7-2 indicate the uses are for "mining" and "other." Ensuring that water quality is suitable should be possible through testing required for the discharge permit.

The application discusses the possible benefits of water in the sediment pond to wildlife. In the event water in the pond contains materials hazardous to wildlife, it would be removed and the pond monitored to ensure no negative effects on wildlife.

Wildlife Resources indicates there are bighorn sheep that spend all year in the Lila Canyon area, and use by sheep is expected to be curtailed following construction. Wildlife Resources also commented that Lila Canyon, and more particularly the water sources up the canyon, are heavily used by chukars, and they feel the mining operations will affect these birds. They suggested the applicant install some watering structures of a suitable design and said these water sources would greatly benefit chukars and other area wildlife. According to the application, the applicant has agreed to install two guzzlers.

The applicant has also agreed to participate in a habitat enhancement project on about 70 acres to convert this from pinyon-juniper woodland to shrubs, forbs, and grasses. Wildlife Resources feels the conversion from pinyon-juniper to a grass-shrub community would profit both big game and raptors. In their experience, jackrabbit and cottontail rabbit populations

increase markedly with this change in vegetation, and they believe this would greatly benefit raptors.

As the mitigation projects are completed, some details should be included in the application or mining and reclamation plan. If this does not happen, it is easy to lose track of what was accomplished. If the applicant or anyone else visits the mitigation sites, general comments on use should be noted and reported to Wildlife Resources and the Division.

Endangered and Threatened Species and Bald and Golden Eagles

In a letter dated April 28, 2000, the Fish and Wildlife Service concurred with the Division's findings that the project is not likely to affect the southwestern willow flycatcher, the bald eagle, or listed plant species. Any water depletions from the Upper Colorado River Basin are considered to jeopardize the continued existence or adversely modify the critical habitat of four Colorado River endangered fish species, but depletions are addressed by existing inter-agency section 7 agreements. No mitigation is required for annual depletions under 100 acre-feet, and since the depletion resulting from the mine is expected to be about 21.3 acre-feet, no mitigation is required at this time.

The Fish and Wildlife Service commented in a letter dated April 14, 1999, that there should be an evaluation of effects on the Colorado pikeminnow (formerly the Colorado squawfish) of a water discharge line to the Price River. This discharge line was apparently proposed early in the planning process for the mine, but it is no longer being planned.

The applicant commits to establish a one-half mile buffer zone of no disturbance during critical nesting periods. This is adequate to protect eggs and chicks from abandonment, and this commitment combined with the mitigation discussed above should be adequate for the loss of most nests near the mine. If any nests are active when the applicant plans to begin construction, it might be necessary to delay construction until the nesting season has ended.

Section 358.200 contains a commitment to safeguard any escarpment that has been identified as a raptor nest site; however, there is one nest within the subsidence area as shown on Plate 5-3. The Division assumes this nest could actually be lost, not just not used. In Section 322.220, the application indicates loss of the nest is not relevant since the applicant will have already mitigated for loss of the nest.

The mitigation is for loss of *use* of the nests in proximity to the mine for the period of the mine operations rather than for actual loss of the nests or nest sites. After discussing this situation with the Division of Wildlife Resources and the Fish and Wildlife Service, the Division has decided the application needs to contain a commitment to provide an alternate nest site if this nest is lost through subsidence. Loss of the nest would be determined in raptor nest monitoring. If the nest site remains undamaged after subsidence is complete, no additional mitigation would be necessary.

It is possible this nest could be used in spite of its proximity to the mine. For this reason, it will be necessary to monitor the site near the time when it would be undermined. It might be necessary to preclude birds from using the nest when subsidence is expected.

In Section 358.200, the applicant commits to conduct a raptor survey to ensure that raptors or their nests or young will not be adversely affected though any mining or mine-related activity. If any previously unknown nests are found, it may be necessary to develop protection or mitigation plans.

Since no threatened or endangered species are known to occur in the proposed addition to the permit area, no protection or mitigation measures are needed..

R645-301-358.510 requires that the operator ensure that power lines used for or incidental to coal mining and reclamation operations within the permit area be designed, constructed and maintained to minimize electrocution hazards to raptors. The application contains a commitment to this effect. The Fish and Wildlife Service recommends application of power line designs such as those in the Avian Power Line Interaction Committee's "Mitigating Bird Collisions with Power Lines: the State of the Art in 1994," or "Suggested Practices for Raptor Protection on Power Lines: the State of the Art in 1996," prepared for the Edison Electric Institute/Raptor Research Foundation, Washington, D. C.

Wetlands and Habitats of Unusually High Value for Fish and Wildlife

The application says the proposed disturbed area contains critical winter range for deer and elk, and it discusses a mitigation plan for the habitat that would be lost during the life of the mine. The "Protection and Mitigation Plan" section of this review discusses this issue further.

According to the application, there are no wetlands or riparian areas within the proposed addition to the permit area. While there are a few springs in the area, there are no perennial drainages.

Findings:

Information provided in the application is not considered 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 has committed to not subside escarpments that contain eagle nests, but it appears the area near one nest would be subsided. The applicant needs to contain a commitment that an alternate nest will be provided if this nest is lost through the effects of subsidence. If the nest is not lost, no additional mitigation would be needed.

While the access road and power lines will probably not be regulated by the Division, the Division of Wildlife Resources and Fish and Wildlife Service commented on these facilities. It is very important that power lines be designed and constructed in accordance with the most current technology to avoid electrocutions. The poles will be used by golden eagles, ferruginous hawks, and other raptors.

Many big game animals are killed in collisions with vehicles used to haul coal, and it is vital that drivers be instructed on the importance of maintaining proper speeds and watching for wildlife. Any animals killed must be taken well off the road to avoid scavengers, including eagles, being hit. They should also be reported to Wildlife Resources.

The Division finds that there is not likely to be any adverse effect to any threatened or endangered species with the exception of four fish species of the Upper Colorado River Basin: the Colorado pikeminnow, the humpback chub, the bonytail chub, and the razorback sucker. While water consumption by the proposed operation would consume about 21.3 acre-feet of water annually and thus jeopardize the continued existence of or adversely modify the critical habitat of these species, existing inter-agency section 7 agreements address these concerns. The Fish and Wildlife Service has concurred with these findings.

RECLAMATION PLAN

LAND USE RECLAMATION PLAN

Regulatory Reference: R645-301-412

Analysis:

The postmining land uses will be the same as premining land uses. This will be accomplished through the reclamation plan presented in other sections of the application. Support activities to achieve the postmining land uses will include site monitoring; remedial actions, such as regrading, reseeding, and replanting; and fencing as necessary to restrict access and grazing.

The postmining land use is in accordance with the Bureau of Land Management's management plans. Appendix 4-2 contains a letter from the Bureau of Land Management stating the postmining land use for the area is wildlife habitat, grazing, and incidental recreation.

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

Table 3-3 in Chapter 3 is a general reclamation timetable. According to this timetable, seeding and mulching would begin about the first of October, depending on the weather, and seedlings would be planted about the first of November. Except as discussed below, these are the normal times for planting, and the schedule is acceptable.

Blue grama and galleta are two of the dominant grasses in the area proposed to be disturbed, and they are both warm season grasses. Other mines in Utah have had a great deal of difficulty establishing these species on reclaimed sites, and this may be because they are often seeded in the fall. Mines in New Mexico and Arizona usually seed these species in the summer to take advantage of late summer rains, but, to the Division's knowledge, no Utah mines have attempted to establish these species by planting them in the summer.

The applicant has committed to establish test plots to test whether summer seeding will increase establishment of the warm season species. With this commitment, the Division is willing to accept the plan to seed in the fall. Further details of the test plot plan are discussed in the "Field Trials" section of this analysis.

Following demolition, the area would be regraded to approximate original contour. These areas will then be ripped 18 inches deep and disced. Topsoil will then be distributed to depths from six to eighteen inches as discussed in Chapter 2.

It is vital that there be soil for plants to have adequate rooting depth. Studies of plant phenology have clearly shown plants in arid areas use soil water from increasing depths as the growing season continues, and if there is inadequate rooting depth, production and vegetative cover will decrease.

Any soils not salvaged and protected would be subject to contamination from mine operations, compaction, and mixing with unsuitable materials. Some of the deeper subsoils, below the roots, have very high (>65%) rock contents, and some are derived from marine shales that could severely limit vegetation establishment and growth. If these materials were in the rooting zone, it would be difficult or impossible to achieve revegetation success.

Following topsoil redistribution, the soil will be tilled until large clods on the surface are diminishing. Tilling the soil to reduce the number and size of clods has not been necessary at

other Utah mines because clods are broken up as the soil is redistributed, but a limited amount of tilling would probably not be detrimental. Gouging or pocking (see below) would also serve to break up large clods.

According to Section 553.230, surface preparation will include pock marking to minimize the potential for erosion and to enhance vegetation establishment. Because of the limited precipitation, the Division considers surface roughening to be essential at this site. Figure 1 in Appendix 5-8 is diagrams of pock mark configurations.

Appendix 5-8 says that in conjunction with pock marking, the track hoe can cast any vegetation, dead trees, and large rocks back onto the reclaimed surface. This debris provides solar protection but also increases available moisture in small areas and increases topographic and vegetation diversity.

The seed mixture for final reclamation is shown in Table 3.4/3.5. It consists of 22 species, 19 of which are native to the area. The introduced species are yellow sweet clover, alfalfa, and prostrate kochia, and the application discusses the reasons for using these species. Based on the reasons in the application, the Division can allow using these three species.

There is controversy whether yellow sweet clover should be included for revegetation, but the applicant would apply it at a rate of only 0.5 pounds per acre for broadcast seeding and half this rate for drilling. At this rate, it should not dominate the site or spread to adjacent areas. The application says yellow sweet clover has proven beneficial in rapid establishment on marginal sites and that, as a legume, it should be able to fix nitrogen. The application includes a commitment to use inoculated seed.

Alfalfa was recommended by the Division of Wildlife Resources, and because this site is marginal for alfalfa, it should not be overly aggressive. There is evidence forage kochia competes well with downy brome, a weed that dominates much of the proposed disturbed area.

The seeding rate shown in Table 3.4/3.5 is about 125 seeds per square foot for areas that are broadcast seeded and half this rate for drill seeded areas. This is a little higher than the rate recommended by the *Interagency Forage and Conservation Planting Guide for Utah* but is acceptable.

Appendix 5-8 says that if seeding does not result in shrub densities exceeding the success standard, bare root or containerized seedlings may be planted at a rate of approximately 200 per acre. The ratio and species would be determined by the Bureau of Land Management and the Division of Wildlife Resources. The application gives adequate details of when and how seedlings would be planted.

If the applicant plants any seedlings, the species and rates would need to be approved by the Division and this information included in the application or mining and reclamation plan.

The discussion in the application is for a conceptual plan, and although the Division can approve the concept as written, details would need to be approved before being implemented.

Section 341.220 says seed and fertilizer will be broadcast by hand or with a rotary seeder. A light cover of soil will be spread over broadcast seed. Although this section seems to indicate the entire area would be broadcast seeded, there is a paragraph discussing calibration of seed boxes indicating a drill might be used. Appendix 5-8 says the area will be hydroseeded, and although hydroseeding is a form of broadcast seeding and is acceptable, it is not the same as broadcasting by hand or with a rotary seeder. The applicant needs to clarify what seeding methods will be used. Drill seeding is likely to decrease surface roughening and should not be used.

According to Chapter 3, the site will be mulched with 2000 pounds per acre of wood fiber mulch with 60 pounds per acre of a tackifier. Chapter 2 says tackifier will be applied at a rate of 50 pounds per acre. Appendix 5-8 says 500 pounds per acre of wood fiber mulch and 100 pounds per acre of tackifier will be applied with the seed followed by application of an additional 1500 to 2000 pounds per acre of mulch and 100 pounds of tackifier. The application needs to be consistent.

There will be no irrigation, and no pest or disease control measures are planned. The Division does not anticipate irrigation will be necessary as long as water harvesting methods are used. There are no serious pest control problems in the area of which the Division is aware, so, hopefully, no control measures will be necessary.

Section 357.301 says the Lila Canyon Mine would like to reserve the right to apply for augmentation of reclaimed areas thus extending the bond liability period on a site specific case scenario. This statement is acceptable but unnecessary. The regulations in R645-301-357 are designed to allow a limited amount of reseeding and other work for specific purposes without lengthening the extended liability period.

Success Standards

The reference area for the mine site disturbance was established adjacent to the proposed facilities during the summer of 1999, and the application refers to Plate 3-1. Plate 3-1 shows wildlife habitats in the general area but does not show the reference area. Figure 1 in the report for the 1999 vegetation survey shows the reference area location. The reference in the application to Plate 3-1 should be corrected or could just be deleted. The application also says this reference area was chosen with the help of DOGM. This statement is not correct and should be eliminated. While a Division representative has been reviewing the success standards, the applicant did not seek or receive input from the Division when the reference area was being chosen.

The grass/shrub reference area is similar in most respects to the proposed disturbed grass/shrub areas, and it is considered an acceptable success standard. At the time of final reclamation, the range condition of the reference area will need to be reevaluated to ensure it is still in fair or better range condition. In the meantime, the reference area needs to be marked and should not be disturbed without first designating another revegetation success standard. The Division recommends the reference area be checked every five years to help ensure it remains in fair or better condition.

The applicant is proposing to use the grass shrub reference area as a success standard for the pinyon/juniper community. Pinyon/juniper areas generally provide relatively little forage for wildlife or livestock compared to a grass/shrub community, and the Division considers the proposal acceptable. The applicant has not presented enough data to statistically compare vegetation cover values between the reference area and the proposed disturbed pinyon/juniper area, but cover in the reference area was measured at over twice the value in the pinyon/juniper area. This may be a difficult standard to achieve, but it is not unrealistic since there will be a different vegetation community in the pinyon/juniper area.

The Division is required in R645-301-356.230 to consult with the Division of Wildlife Resources and gain approval for the tree and shrub density standard for success. The standard set in consultation with Wildlife Resources is 1500 per acre, and this standard has been included in the application. The standard was based more on the species expected to become established in the area than on the existing vegetation.

Section 341.250 discusses success standards for diversity, seasonality, and erosion control. To judge diversity, every species with more than 20% frequency would be classified into a life form. The standard is that the reclaimed area must have at least as many species in each life form, except introduced and undesirable species, as the reference area. The reclaimed and reference areas would not need to have exactly the same species. Life form categories would be native grass, native broadleaf forb, native shrub, desirable introduced, and undesirable species. Undesirable species are those generally classified as weeds or that are poisonous to livestock or wildlife. For seasonality, the life form categories would simply be warm and cool season. This is a relatively easy standard to measure and is acceptable.

Although the numbers may be different when reference area vegetation is measured for bond release, the diversity standard according to information gathered in 1999 would be two shrub species, one broadleaf forb, and six grasses. In addition, two undesirable species were encountered with greater than 20% frequency. There were three warm season species, five cool season, and one species (purple three-awn) about which no information on seasonality was found.

The proposed erosion standard is that vegetation will have demonstrated its erosion control effectiveness when UPDES effluent standards are met. All drainages leading away from the permit area would be sampled as often as practical. This standard is considered acceptable.

Field Trials

The application says the methods outlined have a proven performance based on the successful reclamation of the Horse Canyon Mine. Section 354 discusses timing of seeding for blue grama and galleta. The applicant will use these species in the interim seed mix adjacent to the sediment pond. The west half of the pond disturbance will be seeded in mid-summer following construction. The east half will be seeded in the late fall. The line separating these two areas will be staked, and ocular estimates of reclamation success will be taken each fall for three years. If there appears to be a difference in the two areas, quantitative samples will be taken. If it is possible to derive a conclusion about timing of seeding, the reclamation plan can be modified at the time of permit renewal.

Wildlife Habitat

The application says the sediment pond will be maintained through the life of the operation and will be removed when effluent criteria are met after reclamation. Sections 761 and 763.100 indicate the sediment pond will remain in place until the stability and vegetation requirements for Phase II Bond Release are met and that this will be a minimum of 2 years after the last augmented seeding.

A water source in this area would serve as a wildlife habitat enhancement; however, it is not known whether the pond would actually contain water a significant part of the year and would thus serve as an enhancement. It is also not known whether the water quality would be suitable for wildlife use. Even if it does contain water, the enhancement would only be temporary.

The species in the seed mixture will potentially provide good forage and cover for wildlife. The pinyon/juniper area will be reclaimed to a grass/shrub community, and this should enhance the quality of habitat in the area. There are plenty of pinyon/juniper areas nearby to provide cover, but the greatest need is the increased forage that would be provided in a grass/shrub area.

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:

R645-301-341.220, Section 341.220 says seed and fertilizer will be broadcast by hand or with a rotary seeder. A light cover of soil will be spread over broadcast seed. Although this section seems to indicate the entire area would be broadcast seeded, there is a paragraph discussing calibration of seed boxes indicating some areas would be drill seeded. Also, Appendix

5-8 says the reclaimed area will be hydroseeded. The applicant needs to clarify what seeding methods will be used. Since drill seeding is likely to decrease surface roughening, this method should not be used.

R645-301-341.230, Mulching methods and rates need to be consistent throughout the application.

R645-301-323, The application says the revegetation reference area is shown on Plate 3-1, but this statement needs to be corrected or eliminated. The reference area is shown on Figure 1 of the report for the 1999 vegetation inventory. Also, the application has a statement that the reference area was chosen with the help of DOGM, and this is not correct.

RECOMMENDATIONS:

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

sm
O:\007013.HOR\FINAL\pbbsr98(1)-4LC.wpd