

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

May 13, 2005

TO: Internal File

THRU: Pam Grubaugh-Littig, Permit Supervisor

THRU: Dana Dean, Co-Team Lead
Wayne Western, Co-Team Lead

FROM: Jerriann Ernstsens, Ph.D., Environmental Specialist, Biologist

RE: Lila Canyon Extension, UtahAmerican Energy Inc., Horse Canyon Mine,
C/007/0013, Task ID #2159

SUMMARY:

The Division received an updated application to include the Lila Canyon Mine area into the Horse Canyon Mine permit in March 2005. This memo reviews the Permittee's responses to the biology and archeology sections.

The proposed permit area is 5,992.07 acres with 40.77 acres of surface disturbance for the facilities site. The project is in T16S R14E Sections 10, 11, 12, 15, 14, 13, 22, 23, 24, 26, and 25, and in T16S R15E Sections 19 and 30. The acreage and section numbers do not include transportation or power line corridors.

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GENERAL CONTENTS

PERMIT APPLICATION FORMAT AND CONTENTS

Regulatory Reference: 30 CFR 777.11; R645-301-120.

Analysis:

The MRP-Part B does not meet the requirements of Permit Application Format and Contents for the Biology Chapter and Archeology Section because there are raptor maps illustrating nest locations as well as historic information in incorrect locations.

Findings:

Information provided in the plan does not meet the minimum Permit Application Format and Contents in General Contents requirements of the regulations. Prior to approval, the Permittee must act in accordance with the following:

R645-301-121.300, UEI must move all maps illustrating raptor nest locations from the MRP-Parts A & B to the Confidential File. UEI must prepare a separate confidential folder for Part A. To keep consistent with the folder "Lila Confidential File", UEI may want to title the folder for Part A "Horse Canyon Confidential File".

R645-300-124.300, UEI must move Appendix X-1 and X-2 from the MRP-Part A Volume IV to the Confidential File

REPORTING OF TECHNICAL DATA

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

Analysis:

The MRP-Part B meets the requirements of R645-301-130 for the Biology Chapter and Archeology Section because qualified professionals conducted or directed the surveys and analysis.

Findings:

Information provided in the plan meets the minimum Reporting of Technical Data in General Contents requirements of the regulations.

ENVIRONMENTAL RESOURCE INFORMATION

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

HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

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

Analysis:

The Lila Expansion MRP–Part B meets the requirements of R645-301-411 pertaining to historic resources. The MRP includes numerous evaluations of historic resources that focus on the permit area (see Lila Confidential Files in Division PIC room after June 2005). It also includes narratives and maps that describe or illustrate locations of historic resources within or adjacent the permit area. UEI summarizes the results of reports up to 2004 and provides details of historic properties within the Lila permit area (Lila Confidential File, Appendix 4-1 pp. 11-15 from MRP-Part B). There is proof of coordination efforts and clearances from the SHPO.

Keith Montgomery (1999) conducted a cultural resource inventory of transportation corridors and power line route for the Lila Canyon Extension. The results showed that 42EM2517 is eligible for listing to NRHP. The consultant stated that this site is susceptible to damage caused by secondary mining operations and recommends moving the transportation route to protect the site and conducting a data recovery project. BLM provided record of communications, which UEI will include in the confidential file. The data recovery project will begin following the Notice to Proceed, which is issued by BLM following mine plan approval. The BLM will be the overseeing agency.

BLM submitted the data recovery plan for 42EM2517 drafted by Montgomery to SHPO. A stipulation of the plan was that BLM will enter a Programmatic Agreement with SHPO. This agreement must be signed and approved before the right-of-way is authorized (EA page 58; July 2000).

Blaine Miller (1991) conducted a cultural resource inventory in T16S R14E (report number U-91BL-656). His results showed that 42EM2255 and 42EM2256 are eligible for listing

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to NRHP. Currently, the PAP does not include a complete report. UEI could not locate the completed report because BLM or SHPO no longer have the report on file.

Sites 42EM2255 and 42EM2256 are not near the proposed surface disturbance, but are within the 21.5-degree angle of draw for subsidence. The Division, under consultation with SHPO, determined that the Lila project will not likely affect 42EM2255 and 42EM2256.

Additional information relating to historic properties:

The Division received comments that UEI must perform cultural surveys for all areas subject to subsidence. The MRP-Part B includes a subsidence control map (Plate 5-3); and “Lila Confidential Files” include a cultural map (Plate 4-3) and results from cultural and historic evaluations that focus on the Lila Canyon Extension area.

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.

It is important that UEI employees avoid all historic properties during the life of the project. In the event that construction or operations uncover historic properties, Section 106 of the National Historic Preservation Act and 36 CFR 800.13 require that the UEI stop all work in the vicinity and notify the Division. UEI, the Division, and other appropriate parties will develop a strategy to avoid the site or mitigate the impacts at that time.

Findings:

Information provided in the plan meets the minimum Environmental -Historic and Archeological Resource Information requirements of the regulations.

VEGETATION RESOURCE INFORMATION

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

The MRP-Part B meets the requirements of R645-301-321 because there is adequate discussion of plant communities observed within the permit area. The MRP contains many supporting documents on vegetation for the permit area. Volume 2 (Appendix 3-1 and 3-2) contains vegetation surveys, vegetation maps, and productivity estimates of the main mine facilities area. The MRP also includes adequate vegetation analysis needed for assessing reclamation potential and success.

The Division received comments about a lack of current data for the entire permit area. The King (2003) report includes quantitative and qualitative details of vegetation resources for

the proposed Lila disturbed and reference areas (Appendix 3-1). Dr. King surveyed for cover, cover by species, shrub density, and similarity of composition for reference and proposed disturbance areas. Another comment was the lack of evaluations for biological crust. Dr. King evaluated cryptobiotic soils as one of the baseline measurements for the proposed disturbed and reference areas.

NRCS evaluated productivity levels for the proposed disturbed site and reference area in 2003. A fire had burned both areas several years ago. The plant communities showed signs of drought stress, but were in fair health. The area did not show signs of over grazing by cattle. There was evidence of mule deer use. Mormon crickets were on top of the plateau, but not in either of the evaluated areas.

The Division received comments that the MRP-Part B should identify important plant communities such as riparian areas. Appendix 7-7 and Chapter 3 provide information on springs and drainages including a brief description of plant communities associated with springs.

Plate 3-2 shows plant communities including communities associated with the spring and drainage locations. The monitoring locations [e.g., 2) L-15-G] within the disturbance area are associated with mine discharge (L5S), sediment pond (L4S), and intermittent/ephemeral acting stream drainage (L1S). There are no springs or seeps within the disturbance area (JBR, 1985).

Appendix 7-7 describes all drainages within the permit area as intermittent or ephemeral. There is one 75' section described as intermittent/perennial that is located off the permit area - near Stinky Springs Wash (Reach 9C). There are no drainages within the permit area described as riparian or wetlands. There are greater numbers of spring observations in the NW, NE, and SE corners of the permit area than in all other areas of the permit (Plate 7-1A). It does not appear that many of the springs are within the 21.5-degree angle of draw (Plate 5-3, Plate 7-1A, DOGM generated map). The monitoring locations near these areas are L11G, L7G, L9G, and L12G. The habitat description for monitoring stations L9G and L12G are "minor wet meadows". The seep in the Stinky Springs Wash, which is associated with monitoring point L17G, is very important to Big Horn Sheep.

Findings:

Information provided in the plan meets the minimum Environmental - Vegetation Resource Information requirements of the regulations.

FISH AND WILDLIFE RESOURCE INFORMATION

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Analysis:

GENERAL WILDLIFE

The MRP-Part B does not meet the requirements of R645-301-322 because there is inadequate discussion, supporting documentation, or maps on fish and wildlife resource for the permit and adjacent areas. The MRP is missing information for raptor monitoring and insufficient information to design the protection and enhancement plan for the species.

The MRP-Part B Vol. 2 App. 3-3 through 3-6 provides information on raptors, threatened and endangered species, and other wildlife species.

The Division received comments that the MRP-Part B does not contain site-specific resource information, fails to address high value wildlife habitats, and lacks sufficient information to design the protection plan. The Division consulted with DWR and BLM to determine the level of detail required for wildlife information. The agencies declined to require additional monitoring of the wildlife species. However, the agencies agreed that UEI should:

- Survey all seeps and springs (including descriptions of riparian habitat, seep and spring vegetation, and amphibians).
- Monitor south canyon water source(s) i.e., Stinky Springs.
- Calculate water consumption.

Ungulates

The MRP-Part B includes wildlife information in Section 322.220 and the wildlife map (Plate 3-1). Plate 3-1 shows habitat within the Lila permit area for Rocky Mountain bighorn sheep, elk, and mule deer. Plate 3-1 shows habitat within the proposed surface facilities for Rocky Mountain bighorn sheep and yearlong habitat for mule deer. A large area west and southwest of the permit boundary is yearlong habitat for pronghorn. DWR, USFWS, and BLM developed a mitigation plan to offset impacts to bighorn sheep as well as mule deer, elk, and chukars (see details in Operations).

There are big horn sheep in Lila Canyon and in an unnamed canyon located in the southwest corner of the permit area. The seeps in the unnamed canyon are significant water sources for the sheep. UEI agreed to monitor two of the springs (L-16-G and L-17-G) on a quarterly basis beginning the second quarter of 2002. The hydrology database provides data for these springs. UEI also moved the permit boundary further north to avoid these springs.

Amphibians and Reptiles

The PHC (Appendix 7-7) mentions that UEI has not observed amphibians while water monitoring. The Division may reassess the need to monitor wildlife species during mining operations as conditions change or new information becomes available.

Game Birds, Migratory Birds, and Raptors

Sections 23 and 26, T.16 S., R.14 E. may be potential habitat for cliff-dwelling raptors. The DWR 2003 survey concentrated within Sections 9, 10, 15, 22, and marginally in Sections 11, 14, and 23, T.16 S., R.14 E. The survey did not include Section 26. UEI must ensure that subsequent surveys include all suitable raptor habitat within the permit area, including Section 26, T.16 S., R.14 E. (R645-301-322.100).

After consultation with the DWR (June 8, 2004), the Division will require UEI to conduct raptor surveys at least two years immediately prior to and one year following facilities construction (R645-301-322.100). UEI will refer to the mining map overlaid with potential cliff habitat (Plates 5-3 and 5-5). Premining surveys will provide baseline and post-disturbance data sufficient to update the protection and enhancement plan as operations change.

Five Golden eagle nests are within the 0.5-mile (2640') buffer zone for the surface facility area. Raptor surveys over the course of five years, beginning in 1998, showed that eagles have not used or tended these five nests since 1999. DWR stated that one possible reason for the low nesting activity over these past few years is drought.

Information from DWR shows that water sources up Lila Canyon are heavily used by chukars. DWR mentioned that mining operations near the mouth of the canyon would affect these birds. DWR, USFWS, and BLM developed a mitigation plan to offset impacts to chukars as well as to bighorn sheep, mule deer, and elk (see details in Operations of this TA).

THREATENED, ENDANGERED, AND SENSITIVE ANIMAL/PLANT SPECIES (TES)

Appendices for Chapter 3 include the following wildlife and TES-related resource surveys:

- Appendix 3-3: Diana Whittington (USFWS, April 2003) TES correspondence.
- Appendix 3-4: Nine separate TES entries (1999 - 2002).
- Appendix 3-5: DWR 2003 Raptor survey.
- Appendix 3-6: 'Fauna of southeastern Utah and life requisites regarding their ecosystems' (reference only).

The MRP-Part B includes a current TES list as well as an overview of habitat and occurrence data for all the TES species in Emery County (Appendix 3-3). The list also mentions that the Colorado River cutthroat trout is a Conservation species. Reports in Appendix 3.3 show

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that TES species are not known to occur within the permit area, but there may be suitable habitat for certain species.

Mexican Spotted Owl (MSO)

Appendix 3-4 includes a letter “Summary of Mexican Spotted Owl Habitat Survey Within the Lila Canyon Coal Lease Area” that summarizes the Willey MSO report (2002) and provides an action plan for MSO. The Willey study showed there is suitable MSO habitat within the Lila Canyon permit area. In the action plan and Section 333, UEI agrees to conduct “formal” MSO calling surveys of specific areas described by two conditions: 1) the areas are identified by the 2000 model and supported by the Willey flyover results and 2) the areas are classified as subsidence zones.

The ground-truthing survey for MSO habitat is normally recommended prior to the calling survey for birds. DWR (May 27, 2004, June 9, 2004), nevertheless, considers the Willey flyover as an adequate substitute for the ground-truthing survey for habitat. UEI is still responsible for conducting the calling survey two years prior to reaching potential MSO habitat. The success of this action will depend on UEI’s awareness of mine scheduling coupled to habitat locations. The MRP Part-B provides a mine map overlain with potential MSO habitat (Plates 5-3 Lila Confidential File).

Plants

Mr. Mel Coonrod surveyed for many TES plant species (May 1999, August 2000, April 2002, May 2002). The observations for individuals were positive only for canyon sweetvetch. Mr. Coonrod recommended a protection program for sweetvetch, which is summarized in Operations of this TA.

The Biological Assessment (Aug 2000) references the May 1999 submittal of field results for Barneby reed-mustard, Jones cycladenia, Last Chance townsendia, Maguire daisy, Winkler cactus, and Wright fishhook cactus. The May 1999 submittal, however, does not include results for these species. Irrespective of this discrepancy, the Utah Heritage Program considers that there is very little chance that any of these TES species will occur near the Lila facilities area.

Mr. Coonrod (2000 Biological Assessment) stated that there is suitable habitat for San Rafael (Despain footcactus), Winkler cactus, and Wright fishhook cactus within the proposed site. The Utah Heritage Program, however, considers that there is very little chance that any of the three TES species will occur near the Lila mine. The Division does not impose further requirement at this time to conduct field surveys for these species.

The Division coordinated with DWR and BLM and both agencies agreed that the Lila Extension area has potential habitat for the Cliff’s blazing star, canyon sweetvetch, and

creutzfeldt-flower (all BLM candidate and sensitive species). UEI will survey these species at least the year construction begins or one year prior to construction (Section 321.100 pg. 4). The areas with most potential for Cliff's blazing star and creutzfeldt-flower include the proposed surface facilities area and north of the pediment (Section 15). The optimum months to survey Cliff's blazing star and creutzfeldt-flower are late June to middle August and late April to June, respectively. If the results are positive for these species, UEI must immediately submit a protection/mitigation plan as part of Section 333 for these species. UEI must implement the plan prior to disturbance.

Mr. Coonrod (1999) recommended monitoring for canyon sweetvetch. The best time to identify this species is in middle June to early July (depending on drought conditions). The areas to survey canyon sweetvetch include the proposed surface facilities area and south of the pediment (Section 21). UEI will also survey this species at least the year construction begins or one year prior to construction.

Findings:

Information provided in the plan does not meet the minimum Environmental - Fish and Wildlife Resource Information requirements of the regulations. Prior to approval, the Permittee must act in accordance with the following:

- R645-301-322.100**, (1) Survey all suitable raptor habitat including Section 26, T.16 S., R. 14 E. (2) Conduct raptor surveys at least two years immediately prior to and one year following facilities construction.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

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

Analysis:

Cultural Resource Maps

The MRP-Part B Plate 4-3 (Lila Confidential Files) illustrates historic resource locations within and adjacent to the permit area.

Vegetation Reference Area Maps

The MRP-Part-B provides descriptions and maps of plant communities within the permit area. Plate 3-2 locates "land features" of the permit area including plant communities (listed above), spring locations, and geologic formations. Appendix 3-1 provides a description and

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quantitative survey of the vegetation as well as a map of the plant communities within the permit and reference areas. The vegetation map in Appendix 3-1 shows the boundary for the reference area.

Findings:

Information provided in the plan meets the minimum Environmental - Maps, Plans, and Cross Section Resource Information requirements of the regulations.

OPERATION PLAN

PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES

Regulatory Reference: 30 CFR784.17; R645-301-411.

Analysis:

The MRP-Part B meets the requirements of R645-301-411.144 because UEI identifies parks or historic resources that mining operations may adversely affect. UEI provides adequate information pertaining to a protection plan.

There are no public parks, or units of the National System of Trails or the Wild and Scenic Rivers system within the proposed permit area.

There are known cultural resources, listed eligible for listing in the National Register of Historic Places, within or adjacent to the permit area. The BLM will conduct a data recovery project for site 42EM2517. This project will begin following the Notice to Proceed, which is issued by BLM following mine plan approval. The BLM will be the overseeing agency.

Findings:

Information provided in the plan meets the minimum Operations - Protection of Public Parks and Historic Places requirements of the regulations.

FISH AND WILDLIFE INFORMATION

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

Analysis:

GENERAL WILDLIFE

The MRP-Part B does not meet the requirements of R645-301-333, R645-301-342, or R645-301-358 because there is not an adequate plan for the protection of raptors during construction, operations, or reclamation phases.

The plan includes constructing a culvert and sediment pond in the southwest portion of the proposed disturbed area. Wildlife uses this drainage as a transportation corridor. It is not obvious to the Division that the mine needs to disturb this drainage when there are islands of undisturbed areas on the pediment within the disturbed area boundary. Regulation R645-301-358 requires minimizing disturbances and adverse impacts. The Division recommended keeping operation activities out of the drainages.

The conveyor from the rock tunnel to the run of mine coal stockpile is elevated to avoid restriction of large mammal movement. The only fence shown on the surface facilities map is along the road, about 1000 feet long. UEI assesses that the fence will not impede large mammal movement up-canyon, but will restrict movement in the drainage to the south.

UEI commits to discharge all suitable water encountered during mining in a manner that it becomes available to wildlife. Ensuring water quality suitability is a requirement of the UPDES discharge permit. The application discusses the possible benefits of water in the sediment pond to wildlife in Chapter 3, page 20.

The Division received comments that UEI's statement "... operational activities at the site will impact the wildlife slightly. But ... most of the wildlife...will either accept or adjust their behavior to coexist with the operation" (page 16; Section 333) is dismissive and unsupported, and does not satisfy the rules. The MRP-Part B now provides observations that support UEI's statement.

The plan includes annually training mine employees on environmental awareness (Section 333, pages 17-21).

Protection and Enhancement Plan [Sheila Mo8]

Ungulates

There is no designation of critical habitat for ungulates within the disturbed area. There is a large area designated as critical habitat for mule deer, but it is east of the disturbed area. Plate 3-1 shows that the disturbed and adjacent areas are yearlong habitat for pronghorn, mule deer, and Rocky Mountain bighorn sheep.

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Table 3-2 (page 9) shows 800 acres of sheep habitat and EA UT-070-99-22 states that there are approximately 25 sheep in the area. DWR determined that mining operations in Lila Canyon will not impact these sheep.

DWR, USFWS, and BLM developed a mitigation plan, during the EA process (Sections 322.220, 333), to offset impacts to bighorn sheep as well as mule deer, elk, raptors, and chukars. The plan is a habitat enhancement project for about 70 acres of pinyon-juniper woodland, shrubs, forbs, and grasses, as well as to install two guzzlers. The overseeing agencies for this project are the BLM and DWR. These agencies will define the parameters of and implement the project following mine plan approval (Section 333).

The Division received comments on the need for cultural resource and TES clearances on mitigation projects. BLM and DWR are the leading agencies and will be responsible for Cultural Resource and TES clearances.

Migratory Birds, Game Birds, and Raptors

UEI plans to have below ground power lines (Section 322.210) and construct all lines following the guidelines developed by the Environmental Criteria for Electric Transmission Systems or the Division. PacifiCorp will design and construct the power line from the distribution line to the Lila Canyon substation to the surface facility.

The agencies participating (USFWS, DWR, and BLM) in the EA wildlife mitigation plan decided there is a high probability that eagles will abandon all nests near the proposed surface facilities area because of close proximity to operations (Section 333, page 17). UEI will conduct first seam mining (pillars remain) to help prevent loss of nests caused by subsidence. UEI also agrees to initiate the EA prey enhancement mitigation plan and to contact the Division to initiate a separate mitigation plan if there are future/unknown nests lost as a result of operations (page 3-10; Section 322.220).

UEI will conduct raptor surveys at a minimum of a one-mile radius around any new activity (Section 333.200 page 19). These surveys will help ensure that raptors, nests or young, are not adversely affected through mining or mine-related activity except the two golden eagle nests mentioned in Section 358.200. UEI established a one-half mile buffer zone of no disturbance during critical nesting periods for raptors. This buffer zone is adequate to protect eggs and chicks from abandonment (DWR). If nests are active when UEI begins construction, it may be necessary to delay construction until the nesting season ends. Additionally, UEI agrees to contact the Division to initiate a separate mitigation plan if there are future nests lost as a result of operations.

After consultation with the DWR, the Division requires UEI to conduct raptor surveys within a one-mile buffer zone of the surface facilities area once every three years (R645-301-

333). Collecting data for baseline as well as during operations is a minimum requirement. Other mines, such as Deer Creek, have agreed to monitor raptors, annually.

The Division received comments concerning the coal haul road and impacts to wildlife. UEI will instruct employees to move road kill to the sides of the road and contact DWR when road kills are reported (Section 333, page 18). These measures will help reduce road kill of raptors, especially Golden Eagles that are scavenging from the road kill. The Division recommends extending this protective measure to include removing road kill from the permit area to the interstate.

Amphibians and Reptiles

The Division received comments that subsidence could damage snake dens. DWR and BLM wildlife Biologist, in consultation with the Division, determined that loss of snake dens to subsidence will be random and a minor impact to the overall population of snakes. The agencies require no snake-related survey.

Endangered and Threatened Species

UEI must follow the recommendation of UEI consultant, Mr. Coonrod (1999), to monitor and minimize impact to canyon sweetvetch. UEI will survey canyon sweetvetch, Cliff's blazing star, and creutzfeldt-flower at least the year construction begins or one year prior to construction. If the results are positive for these species, UEI must immediately submit a protection/mitigation plan to go into Chapter 3 Section 333.

The MRP-Part B states that the "Applicant does not plan to monitor any wildlife species during the life of the operation with the exception of raptors" (page19; Section 333.200). The MRP-Part B also includes a separate commitment to survey Mexican spotted owl according to USFWS.

The Fish and Wildlife Service commented that there should be an evaluation of effects on the Colorado pikeminnow (squawfish) on 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.

UEI calculated the estimated amount of water consumed by the mine. UEI provided the mass balance equation-parameters and total expected water loss from mining operations. UEI estimates that the amount of water loss expected from mining operations totals 70.63 acre-feet, annually (Appendix 7-3 PHC). This volume of water is below the 100-acre foot threshold that requires mitigation (USFWS).

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The Division received that UEI has not assessed the potential impact of mine water discharge increasing salinity by running over the Mancos Shale before it drains to the Price River. Increasing salinity is in conflict with the Colorado River Basin Salinity Control Program and potentially could affect the Colorado River endangered fish. The Division contacted the USFWS and they stated salinity is not a concern to the fish, however, selenium is a concern.

UEI commented that if modeling shows mine discharge to reach the Price River, the operator will commit to monitoring at the point of discharge. The modeling (Appendix 7-9) showed mine discharge will not reach the Colorado River.

The Division contacted the Bureau of Reclamation (BOR) concerning the mine water discharge and the Colorado River Basin Salinity Control Program. The BOR has no regulatory requirement for salinity control. However, if the mine discharges and contributes to salinity, then BOR would be interested in working with the mine to reduce the output. Working with the mine could include the BOR paying to pipe the water to the Price River. The BOR also stated that since the BLM has salinity mandates, they should be the agency that addresses this issue.

The USFWS did not identify the southwestern willow flycatcher as a species that may occur in the area of influence. The Division received comments to address this species because of the influence of mining on Range Creek. UEI addresses the possible impacts of mining operations on Range Creek and the willow flycatcher. The Biology and Hydrology sections of the MRP-Part B describe the vegetation and geological constraints for potential habitat for or mining impacts to this species or Range Creek. (Sections 322.210 pages 5, 8; 724.200 page 23; Appendix 7-3 PHC).

Bald and Golden Eagles

Five Golden eagle nests are within the 0.5-mile (2640') buffer zone for the surface facility area. Plate 5-3 (Lila Confidential File) shows raptor nests and the subsidence angle of draw. Two golden eagle nests are within the subsidence angle of draw. UEI and collaborating agencies concluded that there is a high probability that the eagles will abandon these nests because of proximity to operations. The EA mitigation plan for 70 acres of habitat improvement described above was developed, in part, for the loss of these nests.

Wetlands and Habitats of Unusually High Value for Fish and Wildlife

A standard stipulation on federal coal leases is that the lessees monitor the effects of underground mining on vegetation. The MRP-Part B includes a plan to monitor vegetation with color infrared photography every five years. This commitment is consistent with Division requirements for other mines and is acceptable.

According to the MRP-Part B, there are no wetlands, riparian areas, or perennial drainages within the proposed permit area. There are greater numbers of observations of springs in the NW, NE, and SE corners of the permit area than other areas in the permit area (Plate 7-1A). The monitoring locations near these areas are L11G, L7G, L9G, and L12G. The habitat description for monitoring stations L9G and L12G are "minor wet meadows". The seep in the Stinky Springs Wash, which is associated with monitoring point L17G, is very important to Big Horn Sheep. At this time, it does not appear that many of the springs are within the 21.5-degree angle of draw (Plate 5-3, Plate 7-1A, and a DOGM generated map).

Appendix 7-7 describes community types near the water monitoring sites (basically referencing Plate 3-2), provides a landscape picture for each of the sites, and briefly describes a repair plan for subsidence of springs and drainages. UEI assesses that it is unlikely that subsidence will negatively impact springs, seeps, and drainages, but commits to regrade and fill subsidence-related cracks, fissures, or sinkholes. UEI may opt to use the best available techniques available at the time of repair, including the possibility of seeding the repaired area. UEI will notify the Division prior to any repair of seeps, springs, or drainages.

UEI will help protect escarpment habitat from subsidence with a minimum of 200' barriers. UEI assesses there should be no effects of subsidence on surface or ground waters because the permit area has only ephemeral flow associated with precipitation events. (page 13). UEI commits to:

- Monitor mined areas in the spring for evidence of subsidence according to the subsidence control plan (Section 525 page 14).
- Monitor ephemeral stream channels in areas of potential subsidence.
- Monitor vegetation using of infrared aerial photography every five years (Section 332 page 14).
- Develop a mitigation plan and submit the plan to the Division for approval if mining impacts vegetation and wildlife. Mitigation may include to: (Section 332, page 15)
 - a. Enhance habitat by increasing forage productivity in undisturbed areas.
 - b. Provide water sources.

Findings:

Information provided in the plan does not meet the minimum Operations - Fish and Wildlife Information requirements of the regulations. Prior to approval, the Permittee must act in accordance with the following:

R645-301-333, Conduct raptor surveys within a one-mile buffer zone of the surface facilities area once every three years.

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VEGETATION

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

Analysis:

Mel Coonrod (1999) recommends monitoring and implementing a protection program for canyon sweetvetch. Mr. Coonrod protection recommendations include using sediment traps during construction of transportation/utility corridor to minimize sediment loading in the dry wash associated with Section 21 and sweetvetch observation locations. UEI will implement a protection plan to lessen impact prior to disturbance (Appendix 7-3 page 3).

UEI plans to revegetate with an interim seed mix on all incidental disturbances. Tables 3.4/3.5 and state the interim and final seed mix. The mixture contains a high proportion of Blue flax, an aggressive self-seeding native species.

Section 331 refers to the revegetation plan in Section 340 for further information about revegetation methods. The Revegetation section in the Reclamation Plan details the plan.

Findings:

Information provided in the plan meets the minimum Operations - Vegetation requirements of the regulations.

RECLAMATION PLAN

GENERAL REQUIREMENTS

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

Analysis:

Any soils not salvaged and protected are subject to contamination from mine operations, compaction, and mixing with unsuitable materials. Some of the deeper subsoils have very high (>65%) rock contents with parent materials from marine shales that could severely limit vegetation establishment and growth. UEI will have difficulty achieving revegetation success if

reclamation projects include the use of contaminated material or root “unfriendly” material as part of the growth medium.

The reclamation plan calls for:

- Removing all structures and coal from the site.
- Backfilling and grading the site to approximate premining contours.
- Ripping the backfill material to 16-18 inches.
- Replacing the salvaged/stored topsoil.
- Ripping the topsoil to a depth of 6-18 inches or pocking (primary method) the surface after topsoil placement (Section 341.220).
- Analyzing the growth medium for fertilizer requirements (recommended fertilizer rate is 100 pounds per acre of 16-16-8).

Because of limited precipitation, the Division considers surface roughening essential at this site. In conjunction with roughening, the track hoe can cast any vegetation, dead trees, and large rocks back onto the reclaimed surface (Appendix 5-8). This debris provides solar protection and increases available moisture in small areas as well as increases topographic and vegetation diversity.

Incorporating hay/straw (especially hay) as an amendment during gouging is the current standard treatment for soil stability. UEI may want to incorporate noxious weed-free hay/straw during gouging to better ensure a timely and successful reclamation. One of the goals of incorporating hay/straw during gouging is to amend the soil with organic material. Hay is better than straw as a soil amendment because it has a higher N:C ratio. UEI may decide to use hay rather than straw. Often, a fiber mulch follows seeding to provide surface protection from rain and wind. UEI should refer to the Vegetation Guidelines for methods and application rates.

The reclamation project will include applications of fertilizer (if needed), seed with the hydromulch (at 2000 pounds per acre), and tackifier (at 100 pounds per acre). The plan states that the hydroseed/mulch and fertilizer applications will be separate (Section 341.220).

The reclamation plan does not include irrigation. The Division does not anticipate the necessity to irrigate as long as UEI uses water-harvesting methods, such as gouging.

Findings:

Information provided in the plan meets the minimum Reclamation - General Requirements of the regulations.

TECHNICAL MEMO

PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES

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

Analysis:

UEI considers that the EA (UT-070-99-22 July 2000) mitigation plan will enhance the vegetation for an additional 70 acres.

The plan includes maintaining the sediment pond through the life of the operation and removing it when effluent meets reclamation criteria. 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 (minimum of 2 years after the last augmented seeding).

The species in the seed mixture will potentially provide good forage and cover for wildlife. UEI will reclaim the pinyon/juniper area to a grass/shrub community. This plan may enhance the quality of habitat in the area.

Findings:

Information provided in the plan meets the minimum Reclamation - Postmining Land Uses requirements of the regulations.

CONTEMPORANEOUS RECLAMATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.100; R645-301-352, -301-553, -302-280, -302-281, -302-282, -302-283, -302-284.

Analysis:

UEI plans to reclaim all disturbed areas not planned for use as contemporaneously as possible and within the constraints of seasonality.

Findings:

Information provided in the plan meets the minimum Reclamation - Contemporaneous Reclamation requirements of the regulations.

REVEGETATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

Analysis:

The MRP-Part B meets the requirements of R645-301-353 through R645-301-356 because the MRP includes a reclamation plan and discussion of how the reclamation measures will meet the performance standards.

The seed mixture for interim and final reclamation is the same (Table 3.4/3.5). The mix consists of 19 native species: 7 grasses, 5 forbs, and 7 shrubs. UEI reduced the amount of rabbit brush in the seed mix, which will help increase the chance of adequate diversity for the site. UEI will use noxious weed free seed.

Appendix 5.8 (page 3) and Table 3-3 describe the plan for planting bare-root or containerized seedlings if it “appears that woody plant density is lacking”. UEI will supplemental plant up to two years following seeding.

The plan states that for the woody plant supplement project s "the species and numbers will be determined from the evaluation of the ocular estimates. UEI will consult with the Division and DWR to provide the species and numbers of seedlings following the ocular evaluation (Appendix 5-8 page 3).

The Division received comments that UEI should not use lethal means of control for weeds and wildlife. The MRP-Part B states that “no use of pesticides or chemical that have serious consequences to plants or wildlife will be used...unless recommended by a regulatory agency...” (Section 333.200, page 18/19). The plan clearly states to apply the Utah State regulations concerning weed control in Chapter 3, pages 32-33.

Timing

Table 3-3 provides a general reclamation timetable.

Salina wildrye, galleta, and blue grama are three of the more dominant grasses in the proposed disturbed and reference areas. Galleta and blue grama are warm season grasses. The Division’s experience is that these species do not establish well when seeded in the fall. The Division has no knowledge of successfully planting warm season species in the summer in Utah. UEI, however, agrees to establish demonstration plots to test whether summer seeding will increase establishment of the warm season species (Section 354, page 28).

TECHNICAL MEMO

Mulching and Other Soil Stabilizing Practices

The reclamation plan includes applying the seed with 500 pounds per acre of wood fiber mulch and 100 pounds per acre of tackifier. The plan also includes mulching the seeded, reclaimed site with 1500-2000 pounds per acre of wood fiber mulch and 100 pounds per acre of a tackifier (Appendix 5-8 and Section 341.230).

Vascular vegetation and biological soil crusts (cryptogamic soil) currently stabilize the undisturbed area. Dr. King's report shows that the soil crusts contribute 7 and 14% of the total cover for the proposed disturbed and reference areas, respectively. Reestablishment of cryptogamic soil ensures long-term stabilization and plant community restoration. The Division recognizes the recovery rates for cryptogamic soil are slow. Furthermore, that the period of extended liability may not be enough time to see "mature" or significant colonies. UEI, however, may accelerate the recovery period through cryptogamic soil- related best management practices (BMP) known at the time of reclamation.

Standards for Success

The effectiveness of vegetation for approved postmining land use as well as the extent of cover of the reclaimed area compared to the reference area determines revegetation success. To avoid impacting the reference area by mining activity, UEI, Dr. King, and the Division established a new reference area in 2003, slightly farther from the mine entrance than before. If operations disturb the site, the Division may require a new location.

UEI will establish plant cover, woody plant density, and productivity at a minimum of 90% of the reference area (at a confidence interval of 0.1). UEI will meet diversity standards with the species in the final seed mix, and may plant additional plantings of seedlings to contribute to diversity (at year two). Woody plant density is set at 1500 stems per acre.

Wildlife habitat is the primary postmine land use. UEI does not plan to require or use animal control measures.

Section 358.100 refers to Appendix 3-3, which contains a current (2003) letter from the USFWS on threatened and endangered species. This section also states that the environmental coordinator will identify possible TE species, notify the Division, and "take what ever actions are necessary to safeguard both the species and its habitat".

The MRP-Part B states there are "no wetlands and / or riparian areas within the area of potential disturbance". There are springs and wet meadows in the area that are considered habitats of high value for wildlife..

Findings:

Information provided in the plan meets the minimum Reclamation - Revegetation requirements of the regulations.

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