

# TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

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May 4, 2005

TO: Internal File

THRU: Wayne Hedberg, Permit Supervisor

FROM: Jerriann Ernstsens, Ph.D., Environmental Scientist, Biology.

RE: Replacement of Volume 11, Energy West Mining Company, PacifiCorp, Deer Creek Mine, C/015/0018, Task ID #2195

## **SUMMARY:**

The Permittee submitted a plan on December 21, 2004 "Deer Creek Mine North Rilda Canyon Portal Facilities". This plan includes disturbing surface areas for a portal, sediment pond, storage areas, approximate 157 stall parking lot, bathhouse, parking garage, and other small facilities. The Permittee has thoughtfully limited the footprint of disturbance by moving the facilities area to avoid stream alterations.

This memo provides evaluations of the second review of the Biology and Land Use sections in the Deer Creek Mine North Rilda Canyon Portal Facilities amendment.

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**TECHNICAL ANALYSIS:**

**GENERAL CONTENTS**

**PERMIT APPLICATION FORMAT AND CONTENTS**

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

**Analysis:**

The Mine and Reclamation Plan (MRP) does not meet R645-301-121.100 and R645-301-121.200 because there is unclear information in the Biology or Land Use chapters. The Permittee must clarify that the USGS macroinvertebrate data may supplement the surveys conducted during and after 2004.

The Permittee must clarify that they will comply with the exclusionary period during construction and reclamation. The Permittee must clarify the exclusionary period to either include the calving/fawning or remove the reference to calving (Amendment p. 17, 26).

**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:

**R645-301-121.200**, Clarify that the USGS macroinvertebrate data may supplement the surveys conducted during and after 2004. • Clarify that the Permittee will comply with the exclusionary period during construction and reclamation. • Clarify the exclusionary period phrase to either include the calving/fawning or remove the reference to calving (p. 17, 26).

**REPORTING OF TECHNICAL DATA**

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

**Analysis:**

The MRP meets R645-301-130 because qualified professionals conducted or directed the surveys and analysis for the supporting biological and archeological related documents. The MRP meets R645-300-124.330 because the historic resource documents for the Rilda facilities project are in the Confidential File (Division PIC room).

There are mislocated confidential documents in certain Deer Creek volumes. The Permittee will attend to these documents as a response to the Division's request dated December

8, 2004.

**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 MRP meets R645-301-411 regulations pertaining to historic resources. The MRP (Confidential Files) includes evaluations of historic resources that focus on the permit area. It also includes narratives and maps, which describe and show locations within or adjacent to specific projects, of historic resources that may be included in or eligible for inclusion in the National Register. There is proof of coordination efforts and clearances from the SHPO.

There are no cemeteries, parks, trails designated by National Systems of Trails, or rivers designated as Wild and Scenic Rivers.

It is important for the Permittee to understand that workers must avoid all historic resources during the life of the project. In the event that construction or operations uncover historic resources, the Permittee must stop all work near the resources and notify the Division. At that time, DCM, Division, and other appropriate parties will develop a strategy to avoid the site or mitigate the impacts.

**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.

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**Analysis:**

The MRP meets R645-301-321 because there is adequate discussion of plant communities observed within the permit area. Vegetation surveys and maps for the permit area are in different volumes of the MRP. Volume 11, Sec. 300, App. A provides vegetation surveys of the Rilda mine facilities and adjacent areas. Volume 11, Maps 300-1 and 300-2 and Vol. 11, Sec. 300, App. A provide the vegetation and reference area maps for the Rilda facilities project.

The MRP describes the permit area as having a diversified topography with conifer, aspen, transitional, and pinyon-juniper ecosystems. The major plant communities within the permit area include white fir/aspen, sagebrush/grass, and pinyon juniper/mountain brush. Drawing #: MFS1821B illustrates vegetation types in the Mill Fork lease area.

The MRP defines the community types for the Rilda Canyon area as mixed coniferous forests, pinyon-juniper woodlands, mountain brush lands, and riparian areas. The USFS-derived vegetation map (300-1) illustrates these community types with the riparian area as a narrow strip near the proposed facilities area. This map also illustrates aspen forestlands to the west and north of the proposed facilities area.

**Findings:**

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

**FISH AND WILDLIFE RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 784.21; R645-301-322.

**Analysis:**

GENERAL WILDLIFE

The MRP meets R645-301-322 because there is adequate discussion, supporting documentation, or maps on fish and wildlife resource for the permit and adjacent areas.

Ungulates

Other large mammals

Bats

Richard Sherwin, Dr. Duke Rogers, and Carl Johansson conducted (1997; Vol. 12, App. A) a bat survey for the spotted bat and Townsend's big-eared bat within Huntington, Straight, and Cottonwood canyons. Results showed no Townsend's big-eared bats. Observations of spotted bats were solitary and evenly spaced over foraging habitat (lower elevations off the lease area). There are roosting sites in suitable cliffs within lease area and throughout the Huntington drainage. The surveyors hypothesized that, because of the number of individuals, current mining operations or cliff failure did not seem to have long-term impacts to the spotted bat population. These surveyors recommended further surveys to verify their hypothesis (Vol. 12, App. A, p. 11).

Joel and Gabrielle Diamond conducted (October 2004; Vol. 11, Sec. 300, App. G) acoustic, capture, and habitat bat surveys with the focus on the surface facilities project in Rilda Canyon. Their results showed no observations of individual bats, but supported previous surveys that Rilda and Huntington Canyon areas have watering, foraging, and roosting bat habitat. The negative results for individuals were most likely due to the lateness of the season.

The Diamonds considered that bats may relocate to alternative watering, foraging, and roosting habitats in nearby canyons. They warned, however, that further disturbances in the area, including road improvements for the Rilda facilities project, could impact these habitats and reduce the possibility of mitigation. The Diamonds recommended maintaining the quality of alternative habitats within the area where displaced bats may relocate.

The 2004 results showed the reclaimed mine adit up slope from the proposed "powder house" provides a large cavern for bat habitat. The Diamonds described this cavern as the largest in the area and recommend maintaining this site in good condition for bat use.

Bats use echolocating for hunting and each species may echolocate at different frequencies. The MPR provides engineering specs that include frequency ranges for the exhaust and intake fans in Rilda Canyon. Some of the bats that inhabit this area of Utah echolocate within the same frequency range as the fans. DWR considers that the fans may not have a significant impact to some of the bat species, but may impact noise-sensitive species. These species may relocate to alternative sites.

The coal lease stipulates that SITLA, in cooperation with the USFS, may impose mitigation on the loss of spotted bats. The mitigation may include avoidance during specific times and /or the prevention of bat occupancy during periods of subsidence, such as by netting or screening (Stipulation #20).

#### Macroinvertebrates and fish

The Mill Fork area contains portions of Crandall Creek and is a watershed for Little Bear, Mill Fork, and Right Fork of Rilda Creek. These are all tributaries to Huntington Creek. The

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western portion of the area is a watershed to Indian Creek. All of these creeks are important fisheries. Macroinvertebrate data may be used to determine water quality for fish.

The Permittee will use a USGS report (USGS Open-File Report 81-539; Division February 2003 Incoming Files Record #0009) as an historic overview of macroinvertebrates for Rilda Canyon. The USGS survey is over 20 years old but provides an evaluation for the macroinvertebrates at the confluence. The Permittee will use 2004 and 2005 macroinvertebrate surveys for baseline.

The Division, USFS, and DWR support conducting spring and fall surveys for two consecutive years as the protocol for obtaining aquatic baseline data. The MRP states that the DWR and Cirrus 200 and 2005 reports conclude the baseline survey requirement for the Rilda facilities project (Vol. 11, p. 300-11).

The Division, USFS, and DWR support conducting spring and fall macroinvertebrate surveys the first year following construction as well as conducting monitoring surveys every three years during the life of the project. The Permittee will conduct the spring and fall aquatic post-disturbance surveys the first spring and fall after construction begins for the Rilda facilities site. The Permittee will also conduct macroinvertebrate post-disturbance monitoring surveys in the spring every three years following construction. (Vol. 11, Sec. 330, p. 19).

The Division considers that macroinvertebrate monitoring surveys should provide enough information to track changes to Rilda Creek. The Division may require a protection, enhancement, or mitigation plan if the post-disturbance or monitoring surveys indicate negative impacts to the macroinvertebrates or fish adjacent to the Rilda facilities project.

DWR will conduct fish surveys in the Huntington drainage as part of their annual monitoring and will most likely include Rilda Creek as part of their wildlife management plan.

All surveyors must use the same protocol and sampling locations provided in the 2004 Walker document. The Permittee must include the baseline and post-disturbance survey commitments in section R645-301-322 and incorporate all reports and follow-up analysis into Volume 11 Appendix Volume upon compilation.

The Permittee addresses the Colorado River cutthroat trout and its habitat within or adjacent to the permit area. The 2004 fish surveys reported observations of cutthroat, but DWR considers that the observed fish were most likely Yellowstone cutthroat.

*Migratory and Game Birds, and Raptors*

The Permittee provides information concerning migratory and other sensitive bird species within the permit area (specifically Rilda Canyon). Table 300-4 (Vol. 11) provides species-specific habitat and specifies whether the habitat is within the Rilda Canyon area.

The Permittee will conduct yearly raptor fly-over surveys of their permit area. The Permittee will provide the results in their Annual Reports (see Confidential Files).

There is a raptor nest within the 0.5-buffer zone to one of the topsoil stockpiles for the Rilda Canyon project. The Permittee will adhere to exclusionary periods (Vol. 11, p. 300-10) if birds are tending or nesting at this nest site.

There are three golden eagle nests within the Mill Fork lease area. Two red tail hawk nests and several eagle nests are adjacent to the lease area but not within the subsidence zone. The Permittee will undermine nest 1210 and 1211.

The Division, in consultation with DWR and USFWS, requires the Permittee to conduct a raptor survey on the western side of the lease area along the Joes Valley Fault prior to longwall mining. The presubsidence survey map (MFS1839D) shows outcrops in the first long wall panel that could potentially contain raptor habitat.

THREATENED, ENDANGERED, AND SENSITIVE ANIMAL/PLANT SPECIES

The MRP meets R645-301-322 because there is adequate discussion, supporting documentation, and maps on TES species that could occur within or adjacent to the permit area.

The MRP includes current TES lists and an overview of habitat and occurrence data for all the TE species in Emery County, the Manti-Lasal National Forest sensitive species, and other state listed sensitive species (Vol. 11, Sec. 300, App. C, and Tabs. 300-1 through 300-4). The Permittee identifies whether the Rilda facilities project area potentially includes specific habitats or individuals for each species. The Utah Conservation Data Center (DWR) has no record of occurrence for Federally listed threatened or endangered species within the proposed project area.

*Plants*

The MRP states that no threatened or endangered plant (or animal) species inhabit the Mill Fork or Rilda Canyon areas. There are, however, sensitive species within the area. The MRP discusses the potential presence of Monti's milkvetch, Canyon sweetvetch, Peterson catchfly, and Link trail columbine. A query to the Utah Natural Heritage program identified Carrington daisy, USFS sensitive species, occurring in the permit area. The MRP describes the

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potential of this species occurring primarily within the southern region of the mine permit area. USFS suggested that subsidence will not impact this species. The Utah Natural Heritage program identified the Link Canyon columbine and Canyon sweetvetch, USFS sensitive species, occurring adjacent to the permit area in Little Bear Canyon.

*Mexican Spotted Owl*

Mel Coonrod (October 2004) evaluated the Willey 1997 and 2000 models and conducted a ground-truthing survey for the Rilda facilities project (Vol. 11, Sec. 300, App. F). The results of the ground-truthing survey supported the Willey models that there is suitable habitat within the canyon. Mr. Coonrod, however, stated that previous calling survey results from other locations within the Manti-Lasal Forest were negative, and considered that the MSO habitat in this area is marginal. He, therefore, concluded that the project does not warrant a MSO calling survey.

One of the concerns of the Division is the level of disturbance from subsidence to MSO habitat. The Permittee considers that there will be no impact to MSO habitat as a result of mining operations for the Mill Fork lease. Expected disturbance for this project does not include surface facilities, but includes subsidence. The USFWS and USFS support that subsidence in the Mill Fork lease area will have negligible impact to MSO foraging habitat.

**Findings:**

Information provided in the plan meets the minimum Environmental - Fish and Wildlife Resource Information requirements of the regulations.

**LAND-USE RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 783.22; R645-301-411.

**Analysis:**

The MRP meets R645-301-411.100 because the narrative describes the land uses and capability of the land, and maps illustrate the land uses. Vol. 4, Map 1-2 shows the surface ownership information.

The MRP meets R645-301-411.200 because the narrative describes previous mining operations.

The land use for the permit area is primarily grazing, wildlife, and recreation. Other uses in the area include gas production. Currently there is one producing well and plans for future gas development. A pipeline for the gas well follows Forest Road 244 off the permit area. Utah Power and light has a ROW for a 345 KV power transmission line and another line for the

Genwall, Crandall Canyon Mine. The Flat Canyon road enters and leaves the southwest portion of the permit area.. Vol. 4, Map 2-18A illustrates land use.

Another land use for the area is a USFS trail near the Rilda facilities project. The Permittee will construct a new trailhead and parking pad at the east end of the facilities site. The trail will run east west and extend past the facilities site.

The USFS classifies sites within the permit area as winter range (critical/high priority) and summer range (high priority) for elk and summer range (high priority) for mule deer, mining and mineral development, and general timber and grazing rangeland (Vol. 11, p. 400-1). Volume 4, Map 2-19 shows mule deer and elk habitat of the permit area. Volume 11, Map 3-1 shows the vegetation communities of the permit and adjacent area. Volume 4, Map 2-16 is a general soils map that also shows the permit and adjacent area.

One of the surface owners of the permit area is the USFS. USFS will evaluate timber values prior to development on their lands. The Permittee will compensate the USFS for the value of timber loss within the permit area..

### **Findings:**

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

## **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:**

#### **Archeological Site Maps**

The MRP meets R645-301-411.141 because there are archeological maps showing known resource locations within the permit area. These maps are in the Confidential Files (Division PIC room after June 2005).

#### **Vegetation Reference Area Maps**

The MRP meets R645-301-323.100 because vegetation maps illustrate community types within disturbed and reference areas, as well as illustrate the location of reference areas. For vegetation maps, refer to the Collins 2003/2004 report (Vol. 11, Sec. 300, App. A), Maps 300-1 and 300-2 (Vol. 11), and Drawing # MFS1821D.

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**Monitoring and Sampling Location Maps**

The MRP meets R645-301-323.200 because the Permittee provides maps showing locations for vegetation analysis, macroinvertebrate and fish monitoring, and prime bat-watering spots (Vol. 11, Sec. 300).

**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 meets R645-301-411.144 because the Permittee provides past and current historic resource survey reports.

During mining construction, the Permittee will construct a new trailhead and parking pad at the east end of the Rilda facilities site. Reclamation will include removal of this trail and pad as well as restoring the existing road to the original location.

**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 does not meet R645-301-333, R645-301-342, and R645-301-358 because there is insufficient information for the protection or enhancement plan.

The Permittee will protect wildlife by conducting construction outside of exclusionary periods (Vol. 11, p. 300-10). For elk and deer, the wintering period is from December 1 through April 15, and calving period is from May 15 through July 5. For migratory birds, this period is between March and August.

In brief (but not in entirety), the Permittee states they will protect or enhance the site during operations by the following:

- Use pre-disturbed sites for the Rilda expansion facilities.
- Monitor vegetation using infrared technology.
- Conduct construction outside of wildlife exclusionary periods.
- Reduce speed limit for the Rilda mine access road.
- Monitor macroinvertebrates in Rilda Creek.
- Monitor raptors.
- Cooperate with CW Mining to fund a proposed prey base study.
- Protect escarpments on the Joes Valley side from subsidence.
- Enhance riparian corridor along the Rilda Creek.
- Install raptor safe electric power lines.
- Install a fence around a rat midden in Rilda Canyon.
- Design the surface drainage so water flows to a ditch north of Rilda Creek.
- Install barriers along the southern edge of the Rilda facilities area.
- Seed topsoil and subsoil piles.

### **Protection and Enhancement Plan**

The Permittee considers that subsidence does not negatively impact grazing, grazing lands, timber resources, access to timber resources, or wildlife resources. USFS supports that subsidence has negligible impacts to vegetation and wildlife within the Mill Fork lease area.

The Permittee will protect wildlife by conducting construction outside of exclusionary periods (Vol. 11, p. 300-10). For elk and deer, the wintering period is from December 1 through April 15, and calving period is from May 15 through July 5. For migratory birds, this period is between March and August.

The Permittee states that 33.6% of the project was previously disturbed by historic mining operations. The Permittee will improve the previously mined area of the Leroy Mine by removing buried coal, and reclaiming an access road and portal site. However, according to AML, this project was completed in 1988 and they have no further plans for improvement. The Division does not consider this commitment as a wildlife mitigation project. The Permittee must expand on the details of this project or remove the comments from the MRP (R645-301-333.300).

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The Permittee will cooperate with the DWR in a select timber harvest and aspen regeneration project. This project includes 200 acres of private land holding on East Mountain located in portions of Sections 4,5,6,8,9 T17S R7. The Permittee must provide more specifics of this project, such as proposed dates, overseeing agencies, and points on how the Permittee will cooperate (monetary, man power, etc.; R645-301-333.300). There are similar projects that were proposed by other groups years ago. Because of different environmental conditions, these projects have never been implemented. The Permittee should describe what they would do alternatively if this plan were not implemented in a timely manner (for example, five years).

The Permittee will participate with USFS, UDWR and private property land owners (CW Mining and PacifiCorp) to rehabilitate Rilda Creek below Rilda Canyon Springs. The Permittee must provide more specifics of this project, such as proposed dates, overseeing agencies, and points on how the Permittee will participate (monetary, man power, etc.; R645-301-333.300).

*Ungulates*

The Permittee states that the winter range and calving/fawning exclusionary period for deer and elk from December 1st through April 15th. This period includes only the winter range and not the calving/fawning exclusionary period, which is May 15th through July 5th. Furthermore, the Permittee states that they will comply with the exclusionary periods during the reclamation phase of operations. The Permittee, however, must comply with the exclusionary period during construction. The Permittee must clarify the exclusionary period to either include the calving/fawning or remove the reference to calving (see R645-301-121.200).

*Other large mammals*

*Bats and other small mammals*

There is at least one known rat midden within the permit area. The Permittee will protect this midden with a 6-foot fence around the base.

The Permittee has conducted bat surveys within certain sites of the permit area. A 1997 survey concentrated on Huntington, Straight, and Cottonwood canyons, while a 2004 survey (Diamonds) concentrated on Rilda Canyon. The 2004 survey provided a thorough assessment of bat habitat, but the survey was conducted too late in the season to observe individuals.

The Diamonds (2004) describe the opening for a mine adit as the largest in the area and recommend maintaining this site in good condition for bat use. The Permittee will provide a sign for construction workers to avoid areas beyond markers for the subsoil pile.

*Macroinvertebrates and fish*

The Permittee will conduct macroinvertebrate-monitoring surveys the first year in the spring and fall following construction and every three years in the spring. The Division may require a protection, enhancement, or mitigation plan if the post-disturbance or monitoring surveys indicate negative impacts to the macroinvertebrates or fish adjacent to the Rilda facilities project.

DWR will conduct fish surveys in the Huntington drainage as part of their annual monitoring and will most likely include Rilda Creek as part of their wildlife management plan.

#### *Migratory and Game Birds, and Raptors*

The Permittee provides information concerning migratory and other sensitive bird species. Table 300-4 lists six species that may inhabit certain areas of the permit area. The Permittee will enhance the riparian corridor along the Rilda Creek, which should improve the habitat for these six species. The Permittee must provide more specifics of this project, such as proposed dates, overseeing agencies, and points on how the Permittee will participate (monetary, man power, etc.; R645-301-333.300).

The Permittee will conduct yearly fly-over raptor surveys for their permit area.

The Permittee will help CW Mining fund a raptor prey-base study. DWR and the Division are the overseeing agencies. The Permittee must define these agencies and mention the location of the final report for the study in the MRP (R645-301-333.300).

The MRP includes a protection plan for electrical wire and power pole (Vol. 11, Sec. 300, App. H). It is important to note that West Ridge mine, developed in the Book Cliffs coalfield in 1998, located all power lines underground. The Division suggests the same best technology for the Rilda facilities project.

#### **Endangered and Threatened Species**

The MRP includes an overview of habitat and occurrence data for all the TE species in Emery County, the Manti-Lasal National Forest sensitive species, and any other state listed sensitive species.

#### *Mexican Spotted Owl*

The Permittee conducted a MSO ground-truthing survey for the Rilda facilities project. The Division will not require a calling survey for individuals at this time.

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Colorado River Fish

The MRP includes derivations and values of consumption and addition of water to the Colorado River at the time of the Mill Fork lease extension review. The net total was estimated at an annual net gain of 2,453 acre-feet. The Division, in consultation with the USFWS, considered that mining operations were “not likely to adversely affect” the endangered fishes of the Colorado River Basin because there was no indication of depleting water from the Basin.

The Permittee must update all equations and justifications with supporting documentation leading to the overall sum of water depletions or additions when projects would significantly change the current estimated value. The Permittee provided values during the review of the Mill Fork lease. The Permittee does not expect that the Rilda portal project will significantly change the current value.

**Bald and Golden Eagles**

The Permittee will conduct yearly raptor fly-over surveys for their permit area. These surveys should include monitoring the eagle nest located in cliffs, where escarpment failure could occur. The Division may require a protection, enhancement, or mitigation plan if it is probable that current mining operations will impact individuals or their habitat. PacifiCorp should recognize that it is the Division’s and not their responsibility to consult with DWR and USFWS.

**Wetlands and Habitats of Unusually High Value for Fish and Wildlife**

The Permittee will protect and enhance the riparian area along Rilda Creek. The Permittee will monitor macroinvertebrates, which is an USFS indicator species for changes in water quality. All surface runoff from the Rilda facilities will flow to a ditch north of Rilda Creek. Barriers along the southern edge of the facilities area will provide additional protection to prevent runoff from entering the creek.

**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**, Provide supplemental information for the protection or enhancement plan. For example, the Division requires more information for the Leroy Mine, DWR timber harvest, raptor prey-base, Rilda Creek, and East Mountain projects. The Permittee must include, where appropriate, proposed dates, overseeing

agencies, and points on how the Permittee will participate (monetary, man power, etc.).

## **VEGETATION**

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

### **Analysis:**

The Permittee will conduct infrared color photography to record vegetation changes every five years. The Permittee will provide the results in Annual Reports at the time of permit reduction and cease analysis once the Division approves a permit area reduction.

### **Findings:**

Information provided in the plan meets the minimum Operations - Vegetation Information 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:**

The vegetation- and land use- related information below provides discussion of the reclamation plan and how the plan addresses the regulations.

### **Findings:**

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

### **POSTMINING LAND USES**

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

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**Analysis:**

The postmine land use is grazing, wildlife, and recreation. During the reclamation phase, the Permittee will remove a planned trail and parking pad near the Rilda facilities project as well as restore the existing road to the original location.

**Findings:**

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

**PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES**

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

**Analysis:**

To enhance wildlife habitat, the Permittee will form rock piles and plant tublings during the reclamation phase. The Permittee will use a seed mix that provides wildlife with a “natural” and compatible food source once the plants are established.

The Permittee plans to monitor for changes in Rilda Creek during reclamation.

**Findings:**

Information provided in the plan meets the minimum Reclamation - Protection of Fish, Wildlife, and Related Environmental Values 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:**

The plan for the Rilda Canyon facilities project does not include contemporaneous reclamation during the construction and operation phases. The Permittee will conduct interim reclamation for the topsoil stockpiles. The Permittee will also stabilize reclaimed areas by seeding immediately following earthwork.

**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:**

#### **Revegetation: General Requirements**

Volume 11 includes the reclamation and revegetation plan for the Rilda facilities project. Volume 2, Part 4 includes the reclamation and revegetation plan for the left fork facilities.

Volume 11, Tables 300-8 through 300-10 provide three community-based seed mixes for the interim and final reclamation phases for the Rilda facilities project. The seed mixes are for the pinyon/juniper, sagebrush/grass, and white fir/aspens community types. The Permittee will use the same seed mixes for interim and final reclamation. The topsoil piles from the undisturbed and disturbed AML areas will receive the sagebrush/grass seed mix (Vol. 11, p. 300-23) and white fir/aspens (Vol. 1, p. 30-28), respectively. The Permittee will use the pinyon/juniper seed mix for the 0.25 acres of disturbed Douglas fir/white fir community type near the eastern edge of the main facilities site in Rilda Canyon (refer to Collins 2003/2004 vegetation map). The Permittee will also use the pinyon/juniper seed mix for the previously mined and reclaimed AML site.

The Permittee will plant containerized plants of shrub species that are native to the Rilda Canyon area. These transplants will augment seeding in areas commonly difficult for seed to germinate e.g., steep slopes, southern exposures and extremely windy sites. Transplants will contribute to soil stabilization and wildlife habitat enhancement.

#### **Revegetation: Timing**

Volume 11, Tab. 300-6 is a general reclamation timetable for the Rilda facilities project. According to this timetable, many reclamation activities will occur simultaneously.

Volume 11, Tab. 300-7 is a monitoring program timetable for evaluating site stability, plant health, need for reseeding, and vegetation for bond release. The Permittee will conduct vegetation monitoring during the 4<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup>, and 10<sup>th</sup> years following reclamation.

#### **Revegetation: Mulching and Other Soil Stabilizing Practices**

The Permittee will conduct earthwork immediately followed by seedbed preparation and seeding. Seedbed preparation will include:

- Amending the soil with 2000lbs./acre of certified noxious weed free alfalfa hay.

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- Pocking to provide water-catching sites and incorporate the hay.
- Hurricane or hydroseeding with native seed mixes.
- Hydromulching with 1500 lbs./acre of wood fiber or other acceptable product.
- Applying a tackifier to slopes greater than 2:1 at the manufacturers recommended rate.
- Planting tublings at a rate of 200/acre.
- Placing signs around the site to limit access and ensure slope protection.

The Permittee may consider using the track hoe to cast some dead trees and large rocks back onto the reclaimed surface. This debris would provide solar protection and increases available moisture in small areas as well as increases topographic and vegetation diversity.

**Revegetation: Standards For Success**

The Permittee must use the Division's approved sampling techniques listed in the Division's "Vegetation Guidelines, Appendix A". Qualitative surveys will include sampling reclaimed sites for cover, woody species density, diversity, and productivity.

The Division will assess success of the revegetated sites to the designated reference areas. Success measurements include evaluating the effectiveness and permanence of the vegetation for the approved postmine land use as well as the extent of cover compared to the reference area. The Permittee will meet success standards when ground cover and production rates are not less than 90% of the standard at the 90% confidence level.

Two of the postmine land uses for this plan are wildlife and recreation. Success standards for wildlife require that tree and shrub stocking rates, planting arrangement, and value are appropriate for the proposed postmine land use. The Permittee will meet success standards when:

- Density attains at least set rates.
- Trees and shrubs are healthy.
- 80% of trees and shrubs are in place at least 60% of the extended responsibility period.

The Permittee will use baseline as the measure of success for the previously mined and reclaimed site. The Vegetation Guidelines provide criteria that the Permittee must meet in order to use baseline data as an alternative to a reference area. The Permittee must provide a NRCS 2004 evaluation of productivity and range condition for this site. The Permittee must illustrate that surveyors conducted or will conduct the vegetation survey and NRCS evaluation within a normal precipitation year prior to disturbance (R645-301-356).

The Collins 2003/2004 surveys provide the required data for cover, cover by species, and woody plant density for two sites: pinyon/juniper reference (Collins 2003, Tab. 3) and proposed redisturbed areas (Collins 2003, Tab. 2). The total cover for the reference area is 52%. The composition for this site is marginal with 13% alfalfa and 2.3% shrubs. Comparatively, the total

cover for the proposed redisturbed area is 42%, but the composition is more dispersed among the life forms and species. If the Division authorizes the use of baseline (after the Permittee addresses 356 regulation), the Permittee must bring the cover to at least the percent of ground cover existing before redisturbance and adequate to control erosion (R645-301-356.250).

There is no plan to irrigate following reclamation.

The Permittee will implement a weed or rodent control program, only if needed. The Permittee will seek approval prior to implementing an animal control program.

The Permittee plans to follow regulations associated with repair of rills and gullies.

**Findings:**

Information provided in the plan does not meet the minimum Reclamation – Revegetation requirements of the regulations. Prior to approval, the Permittee must act in accordance with the following:

**R645-301-356**, Provide a NRCS 2004 evaluation of productivity and range condition for the previously mined site. Illustrate that surveyors conducted or will conduct the vegetation survey and NRCS evaluation within a normal precipitation year prior to disturbance.

**R645-301-356.250**, The Permittee must bring the cover to at least the percent of ground cover existing before redisturbance and adequate to control erosion.