

**FLAMMULATED OWL (*Otus flammeolus*)**

No flammulated owl surveys have been conducted within the project area, this area provides only marginally suitable habitat for this species. If flammulated owls exist here they are most likely at very low population levels. No direct or indirect effects are anticipated.

**NORTHERN GOSHAWK (*Accipiter gentilis*)**

Wildlife surveys have located several active goshawk nests on the Wasatch Plateau, however none were found in the project area. The project area contains primarily pinyon-juniper and does not provide the habitat preferred by the goshawk. No direct or indirect effects are anticipated to this species.

**THREE-TOED WOODPECKER (*Picoides tridactylus*)**

If Three-toed woodpeckers exist here they are most likely at very low population levels. The project area contains primarily pinyon-juniper and does not provide the habitat preferred by the Three-toed woodpeckers. No direct or indirect effects are anticipated.

**CANYON SWEETVETCH (*Hedysarum occidentale* var. *canone*)**

Habitat is found at the base of the slopes where springs or seeps are found and along the streambed. The bottom of the canyon where the habitat exists is not proposed to be subsided. This species was seeded in the potential habitat but the species did not persist. The plant will not be affected by this action.

**SUMMARY OF EFFECTS FOR SENSITIVE SPECIES**

SPECIES	ALT 1	ALT 2
Spotted bat	No Impact	MIIH
Townsend's big-eared bat	No Impact	MIIH
Flammulated owl	No Impact	No Impact
Northern Goshawk	No Impact	No Impact
Three-toed woodpecker	No Impact	No Impact
Canyon Sweetvetch	No Impact	No Impact

MIIH = May Impact Individuals Or Habitat, But Will Not Likely Contribute To A Trend Towards Federal Listing Or Loss Of Viability To The Population Or Species.

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Date 07/19/1999

In C 0150018, 1999

For additional information



0034

**COPY**

File Code: 1950

Date: July 19, 1999

NOTICE AND REQUEST FOR COMMENTS

*ACT 1015/018 # 2  
Copy cover to May (in)  
Town, UT,  
Peter  
(fox)*

The Manti-La Sal National Forest and Bureau of Land Management (BLM) Price Field Office have prepared the enclosed environmental assessment (EA) for a proposal by Energy West Mining Company, Deer Creek Mine to amend their mining and reclamation plan for the North Rilda Canyon vicinity. The area of the proposal lies on National Forest System lands administered by the Manti-La Sal National Forest, Ferron-Price Ranger District, Emery County, Utah in Township 16 South, Range 7 East, Sections 20, 21, 28, and 29, Salt Lake Meridian.

The preferred alternative for implementation is Alternative 2 (Proposed Action). Alternative 2 is detailed in the EA on page II-1. Alternative 2 would permit Deer Creek Mine to conduct full extraction, longwall mining beneath the Castlegate Escarpment on the north slope of Rilda Canyon, which would lead to surface subsidence and probable rockfalls.

To implement Alternative 2: the Forest Service would consent to, and the BLM would approve, a change to the Resource Recovery and Protection Plan, and the Forest Service would consent to, and the Utah Division of Oil, Gas and Mining would approve the amendment to Deer Creek Mine's mining and reclamation plan.

Per the requirements of 36 CFR 215, comments are invited on the preferred alternative until 4:30 p.m. on August 19, 1999. Comments<sup>1</sup> should be sent to the Supervisor's Office address on the letterhead. All received comments<sup>1</sup> will be considered in making a decision.

Contact Jeff DeFreest or Aaron Howe at this office for additional information (435-637-2817).

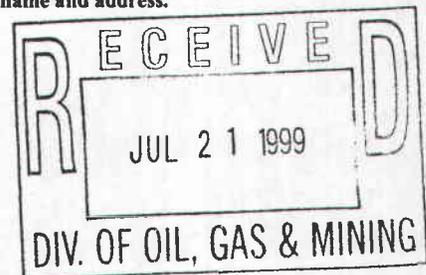
Sincerely,

*Donald G. Fullmer*  
DONALD G. FULLMER  
Acting Forest Supervisor

Enclosure

<sup>1</sup> Comments received in response to this solicitation, including names and addresses, will be considered part of the public record and will be available for public inspection. Comments submitted anonymously will be accepted and considered; however, those who submit such comments will not have standing under 36 CFR 215. Additionally, pursuant to 7 CFR 1.27(d), any person may request that a submission be withheld from the public record by showing how the Freedom Of Information Act permits such confidentiality. Persons requesting such confidentiality should be aware that such confidentiality is granted in only very limited circumstances. The Forest will inform the requester of its decision regarding a request for confidentiality, and where the request is denied, the Forest will return the submission and notify the requester that the comments may be resubmitted with or without name and address.

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Date: *07/19/99* for additional information



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**Threatened & Endangered Species**

**Suitable Habitat**

The area affected by the proposed action does not contain suitable habitat (i.e. elevation, vegetation, and/or geology) and known home ranges for many of the Threatened or Endangered species. Therefore, it is determined that there will be no effect upon them. These species (as listed below) are therefore eliminated from further analysis.

- \* Colorado Squawfish (**Ptychocheilus lucius**) - The endangered fish species of the Colorado River occur in waterways more than 100 miles away from the proposed action. The proposed action is not expected to cause any measurable changes in sediment yields or water flow into the Colorado River Drainage.
- \* Bonytail Chub (**Gila elegans**) - The endangered fish species of the Colorado River occur in waterways more than 100 miles away from the proposed action. The proposed action is not expected to cause any measurable changes in sediment yields or water flow into the Colorado River Drainage.
- \* Humpback Chub (**Gila cypha**) - The endangered fish species of the Colorado River occur in waterways more than 100 miles away from the proposed action. The proposed action is not expected to cause any measurable changes in sediment yields or water flow into the Colorado River Drainage.
- \* Razorback Sucker (**Xyrauchen texanus**) - The endangered fish species of the Colorado River occur in waterways more than 100 miles away from the proposed action. The proposed action is not expected to cause any measurable changes in sediment yields or water flow into the Colorado River Drainage.

The potential for effects upon the following species will be analyzed further.

Bald Eagle (**Haliaeetus leucocephalus**), Peregrine falcon (**Falco peregrinus anatum**), Southwestern Willow Flycatcher (**Empidonax traillii extimus**).

**Effects of the Project Proposal**

**Bald Eagles (Haliaeetus leucocephalus)**

Bald Eagles can often be found near the lakes and reservoirs on the Manti Division during the late fall and early winter. Joes Valley Reservoir has been known to annually inhabit bald eagles from approximately mid October to early January. When the reservoir freezes over, the eagles leave. A pair of bald eagles have been known to nest near the town of Castle Dale (approximately 10 miles south of the proposed action). Reviews of the nesting eagles near Castle Dale indicate foraging habitat of adults and juveniles are within an approximate five mile radius from the nest site. The nesting eagles's home range was not identified to be within any of the area addressed in the Deer Creek Mine Plan Amendment. The project area has been surveyed by the U.S. Fish and Wildlife Service, Utah Division of Wildlife Resources, and local coal companies for the past thirteen years. Lately, follow-up surveys have been conducted yearly. A raptor nest was found a couple of years ago,

however during the 1998 survey this nest could not be relocated (nests on cliffs have the tendency to be blown away after time). No direct or indirect effects caused by the mine operation are expected. No bald eagles are known to inhabit the area outside of the wintering period.

The proposed action will not contribute to loss of viability for the following reasons:

- 1) Bald Eagles are known not to nest or reproduce within any of the proposed action areas.
- 2) No bald eagles are known to utilize any of the proposed project area.
- 3) Reviews of the nesting bald eagles near Castle Dale indicate foraging habits of adults and juveniles are not within the proposed action areas.

#### Peregrine Falcon (***Falco peregrinus anatum***)

Peregrines prefer cliffs as nest sites. Existing cliff faces occur within the effected area. The Manti Division underwent intense aerial surveys for peregrine falcons. The area was surveyed by the U.S. Fish and Wildlife Service, Utah Division of Wildlife Resources, and local coal companies approximately thirteen years ago. Lately follow-up surveys have been conducted yearly, a couple of years ago a confirmed sighting of a peregrine was made in Rilda Canyon, however the bird did not establish a scrape in the area. Habitat exists throughout the general area, however no birds are known to inhabit the area besides perhaps when foraging. No direct or indirect effects caused by the mine operation are expected.

The proposed action will not contribute to loss of viability of the peregrine falcon for the following reasons:

- 1) Peregrine falcons have recovered to a level of approximately 160 eyries in the state of Utah. Well above the 21 active eyries set as a goal for Utah by the American Peregrine Falcon Recovery Plan.
- 2) No peregrine falcons are known to utilize any of the proposed project area, except perhaps in general foraging.

#### Southwestern Willow Flycatcher (***Empidonax traillii extimus***)

Flycatchers are closely associated with riparian habitats such as willow or alder thickets along streams, on the shores of ponds, or bordering marshy areas. They are also found in the brushy margins of fields, along mountain streams, and in shrubby floodplain areas. Willow Flycatchers have been found on the Wasatch Plateau, however at the present time it is uncertain if they are SWWF or Northern Flycatchers. Riparian vegetation is present in proximity to the proposed coal extraction site but will not be affected by the operation, the coal company has proposed to place mains that would go under the streambed (at a right angle), but would not subside this area. The mining operation should not affect the streambed so this should not impact any flycatchers, if present.

The proposed action will not contribute to loss of viability of the Southwestern Willow Flycatcher for the following reasons:

- 1) Flycatchers are closely associated with riparian habitats, this habitat is present in proximity to the proposed coal extraction site but will not be affected by the operation.
- 2) Willow flycatchers have been found on the Wasatch Plateau, however at the present time it is uncertain if they are SWWF or Northern Flycatchers.

**SUMMARY OF EFFECTS FOR LISTED SPECIES**

SPECIES	ALT 1	ALT 2
Bald Eagle	No Effect	No Effect
Peregrine Falcon	No Effect	No Effect
Southwestern Willow flycatcher	No Effect	No Effect

**Socio-Economics:**

Alternative 1

Under the "No Action" alternative, the Forest Service would not consent to the amendment of the R2P2 and the subsequent mine plan modification and the subsequent permits would not be amended as proposed by the responsible agencies. Mining of the permitted area would be done in September of 2003, resulting in 263 miners potentially losing their jobs at that point in time.

Alternative 2

Under the action alternative, the Forest Service would consent to the amendment of the R2P2 and the subsequent mine plan modification. Longwall mining would be permitted in both seams for the 2 southern panels extending mine life to September of 2005. The Deer Creek Mine currently employs 263 miners who would potentially keep their jobs longer as the North Rilda area is mined out if the action alternative is selected. Additionally, the royalties returned to the US Treasury would be increased if the action alternative is selected as shown in Chapter 2 "Comparison Summary Of Alternatives".

**C. CUMULATIVE IMPACTS**

The cumulative impacts of past and present activities in combinations with each alternative are presented in the preceding section by issue topics

Alternative 1

Historically man's activities in the project area have included livestock grazing, recreational use, and coal production, which have resulted in changes in the topography, vegetation, and erosion. Cumulative effects resulting from mining coal could include the effects from subsidence and the human activity from continued operations as it exists on these leases and adjacent leases. PacifiCorp is monitoring the impacts of mining on the permit area as part of the Mining and Reclamation Plan. To date, the results of monitoring in the permit area indicate that no notable impacts to surface resources have occurred from mining. (Deer Creek Mine submits subsidence and hydrologic monitoring reports annually as a requirement of their MRP.) There would be no change in the existing condition.

Past and present fossil fuel exploration drilling and production within the surrounding area has and will remove minimal amounts of water and disturb relatively small to medium amounts of surface areas and

vegetation habitat. In the past, impacts to sensitive species have been insignificant. In the reasonable foreseeable future, it is estimated that additional drill exploring and production of gas/coal is likely.

Other forest-use practices and natural events have affected wildlife habitat within the project area. Livestock grazing is one of the primary forest uses in the area. Livestock use has decreased foraging opportunities through competition and have altered vegetation of the habitat, although the previous work in Rilda Canyon has lead to mitigation, including the exclusion of livestock above the cattleguard at the North Emery Water Users Association spring development. Additionally, Rilda Creek was probably perennial below the forks prior to the NEWUA spring development.

Activity from hauling and recreational use in Rilda Canyon has increased in part due to the road improvements done on 1994 providing better access. The road construction (improvements) however have probably lead to an overall decrease in sedimentation to the creek.

Noise in the canyon has been increased due to the increased human presence, traffic on the road, and the construction of the portals and fans at Deer Creek Mine's Rilda Canyon Breakout facility located in the south fork.

Visual Quality in the canyon has been altered by the installation of the powerline to support the Rilda Canyon Breakout facility, as well as the facility itself.

### Alternative 2

The cumulative impacts presented for Alternative 1 would persist with implementation of this alternative. Cumulative impacts from other resource activities (i.e. timber, grazing) are similar to those for Alternative 1.

Past and present fossil fuel exploration drilling and production within the surrounding area has and will remove minimal amounts of water and disturb relatively small to medium amounts of surface areas and vegetation habitat. In the past, impacts to sensitive species have been insignificant. In the reasonable foreseeable future, it is estimated that additional drill exploring and production of gas/coal is likely. Potential threats to wildlife foraging and nesting areas could exist, and continual mineral activity could decrease habitat. The mining company conducted a study to determine the likelihood of escarpment failure, the result of the study indicate that 69% of the escarpment is in the high potential for failure category. The longwall mining beneath the escarpment has the potential to remove a portion of the vertical rock face. Escarpments in this area are naturally falling however the mining would cause this process to be accelerated. Over time the escarpment should continue to erode and new ledges created. The failure of the escarpment would remove some cliff face and impact pinyon-juniper habitat. There would be no cumulative effects to any of the other Threatened or Endangered species. As a mitigation measure raptor activity should continue to be monitored to determine if any select the Rilda Canyon area as a nesting site. If bald or golden eagles, or peregrine falcons select the canyon as a nesting location then consultation with the US Fish and Wildlife Service and the Utah Division of Wildlife Resources will be initiated prior to proceeding with mining that would cause loss of the new nest(s).

Similar to the effects in Alternative 1, except that the magnitude of impacts could be increased. There will be an increase in erosion of the Castlegate Sandstone escarpment, primarily accelerated by the stresses placed on the rock by subsidence and associated rockfalls.

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## CHAPTER 6 References

### Geological and Mining References:

#### Energy West/Deer Creek Mine Documents:

Deer Creek Mine, Mining & Reclamation Plan, 1992

Deer Creek Coal Mine North Rilda Area, January 1997

Status Report, June 1998, Rilda Canyon Escarpment Study

Status Report, February 1998, Assessment of Surface Impacts to the Castlegate Sandstone Escarpment from Full Extraction Reserve Recovery & Overview of Castlegate Sandstone Escarpment Geotechnical Model Evaluation.

East Mountain Cumulative Hydrologic Impact Assessment, July 1989 (9/94 update), Utah Division of Oil Gas and Mining.

Development of Preliminary Modeling Procedures for Assessing Castlegate Escarpment Stability, May 1998, Maleki Technologies Inc., Spokane Wa.

### General and Forest References:

Manti-La Sal National Forest Plan and Final Environmental Impact Statement (1986)

San Rafael Resource Management Plan and Final Environmental Impact Statement (1992)

E/As prepared for Leasing & Readjustments of Federal Coal Leases: U-024317, U-2810, SL-051221, and U-06039

### Biological References:

**References used to determine the presence (or absence) of Threatened, Endangered, or Proposed Species as well as species characteristics and habitat information include:**

Baxter, G.T. and J.R. Simon. 1970. Wyoming fishes. Wyoming Game and Fish Dept. bull. No. 4. Cheyenne. 168 pp.

Behnke, R.J. and D.E. Benson. 1980. Endangered and threatened fishes of the upper Colorado River Basin Coop. Ext. Serv., Colorado State Univ. , Fort Collins, Bull. 503A. 34 pp.

Boschen, Nelson. 1995. Bald Eagles in Southeastern Utah: 1994 Nesting Season.

Cade, T.J., J.H. Enderson, C.G. Thelander, and C.M. White. 1988. Peregrine falcon populations: their management and recovery. The Peregrine Fund, Inc., Boise. 949 pp.

Daw, S.K. 1991. Preliminary Mexican Spotted Owl Survey in Glen Canyon National Recreation Area. Unpublished Technical Report.

Caney, J.L. 1988. Distribution and habitat ecology of Mexican spotted owls in Arizona. M.S. Thesis. Northern Arizona Univ., Flagstaff. 229 pp.

Johnsgard, P.A. 1988. North American owls, biology and natural history. Smith. Instit. Press, Washington and London. 295 pp.

Ratcliffe, D.A. 1980. The peregrine falcon. Buteo Books, Vermillion, SD. 416 pp.

Rocky Mt/Southwest Peregrine Falcon Recovery Team. 1984. American Peregrine Falcon Rocky Mountain/Southwest Population Recovery Plan. U.S Fish and Wildlife Service. 105 pp.

Sigler, W.F. and R.R. Miller. 1963. Fishes of Utah. Utah State Dept. of Fish and Game, Salt Lake City. 203 pp. Stalmaster, M.V. 1987. The bald eagle, Universe Books, New York. 227 pp.

Unitt, P. 1987. Empidonax traillii extimus: an endangered subspecies. Western Birds 18:137-162

Welsh, Stanley L., N.D. Atwood, S. Goodrich, and L.C. Higgins. 1987. A Utah Flora. Great Basin Naturalist Memoirs Number 9. 894 pp.

Willey, D., J. Willey, and D. Chapman. 1991. Final Report - Mexican Spotted Owl Surveys in Forested Highlands and Adjacent Canyonlands in Southern Utah. Forest Service Contract Nos: 53-8462-0-07007, and 53-8462-0-07008. 57 pp.

#### A. Forest Service References

District wildlife observation records. USDA Forest Service, Price Ranger District, Price, Utah.

Personal communications with Forest Service personnel.

USDA Forest Service. 1991a. Threatened, Endangered, and Sensitive Species of the Intermountain Region. USDA Forest Service, Intermountain Region. Ogden, UT.

USDA Forest Service. 1991. Utah Endangered, Threatened, and Sensitive Plant Field Guide. USDA Forest Service, Intermountain Region, Ogden, Utah.

#### B. State Wildlife Agency References

Personal communications with Bill Bates, Southeastern Regional Nongame Manager, Utah Division of Wildlife Resources, Price, UT.

Shirley D. Nongame Biologist Utah Division of Wildlife Resources. Personnel Communication with Rod Player, March 1991.

Utah Division of Wildlife Resources. 1980. Bats of Utah. UDWR Publication No.80-15.

Utah Division of Wildlife Resources. 1990. Fauna of Southeastern Utah and Life Requisites Regarding their Ecosystems. Publication No. 90-11.

#### C. U.S. Fish and Wildlife Service References

A phone call was made to the U.S. Fish and Wildlife Service (Susan Lanier) on April 10, 1995, relative to nesting Bald eagles near the town of Castle Dale.

Phone calls were made to the U.S. Fish and Wildlife Service to confirm the list of Threatened, Endangered, and Proposed Species.

U.S. Fish and Wildlife Service. 1995. Mexican Spotted Owl (Strix occidentalis lucida) recovery plan. U.S. Fish and Wildlife Service, Albuquerque, New Mexico.

U.S. Fish and Wildlife Service. 1995. Heliotrope milkvetch (Astragalus montii) recovery plan. U.S. Fish and Wildlife Service, Denver, Colorado. 11 pp. Federal Register Vol. 58 No. 140, 7/23/93.

#### **References used to determine the presence (or absence) of Sensitive Species as well as species characteristics and habitat information include:**

Bull, E.L., A.L. Wright, and M.G. Henjum. 1990. Nesting habitat of flammulated Owls in Oregon. J.Raptor Res. 24(3):52.55.

Bull, E.L., S.R. Peterson, and J.W. Thomas. 1986. Resource partitioning among woodpeckers in north-eastern Oregon. Res. Note PNW-444. LeGrande, OR: U.S. Dept. of Agricul., For. Serv., Pacific Northwest Res. Sta. 19 pp.

Hayward, G.D. 1989. Habitat use and population biology of boreal owls in the northern Rocky Mountains, U.S.A. Ph.D dissertation. Univ. of Idaho, Moscow. 113 pp.

Hennessey, S.P. 1978. Ecological relationships of accipiters in northern Utah with special emphasis on effects of human disturbance. M.S. Thesis, Utah State University, Logan, Utah. 65 pp.

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Kennedy, P.L., and D.W. Stahlecker. 1989. Preliminary Northern Goshawk Inventory. Unpublished Protocol.

Kunz, T.H. and R.A. Martin. 1982. *Plecotus townsendii*. Mammalian Species No. 175. 6 pp.

Leonard, M.L. and M.B. Fenton. 1983. Habitat use by spotted bats (*Euderma maculatum*), Chiroptera: Vespertilionidae: roosting and foraging behavior. Can. J. Zool. 61:1487-1491.

Reynolds, R.T. and B.D. Linkhart. 1987. The nesting biology of flammulated Owls in Colorado. Pages 239-248 in A.W. Nero, R.J. Clark, R.J. Knapton.

Scott, V.E., J.E. Whelan, and P.L. Svoboda. 1980. Cavity nesting birds and forest management. Pages 311-324 in R.M. DeGraaf, tech. coord. Proc. of workshop on management of western forests and grasslands for nongame birds. U.S. For. Serv. Gen. Tech. Rep. INT-86. Intermountain For. and Range Exp. Sta., Ogden, UT,

Stebbins, R.C. 1985. A field guide to western reptiles and amphibians. Houghton Mifflin Company, Boston. 336 pp,

Turner, F.B. 1958. Life history of the western Spotted frog in Yellowstone National Park. Herpetological 14:96-100.

Watkins, L.C. 1977. *Euderma maculatum*. Mammalian Series No. 77. 4 pp.

Woodsworth, G.C., G.P. Bell, and M.B. Fenton. 1981. Observations of the echolocation, feeding behavior, and habitat use of *Euderma maculatum* (Chiroptera: Vespertilionidae) in south central British Columbia. Can. J. Zool. 59:1099-1102.

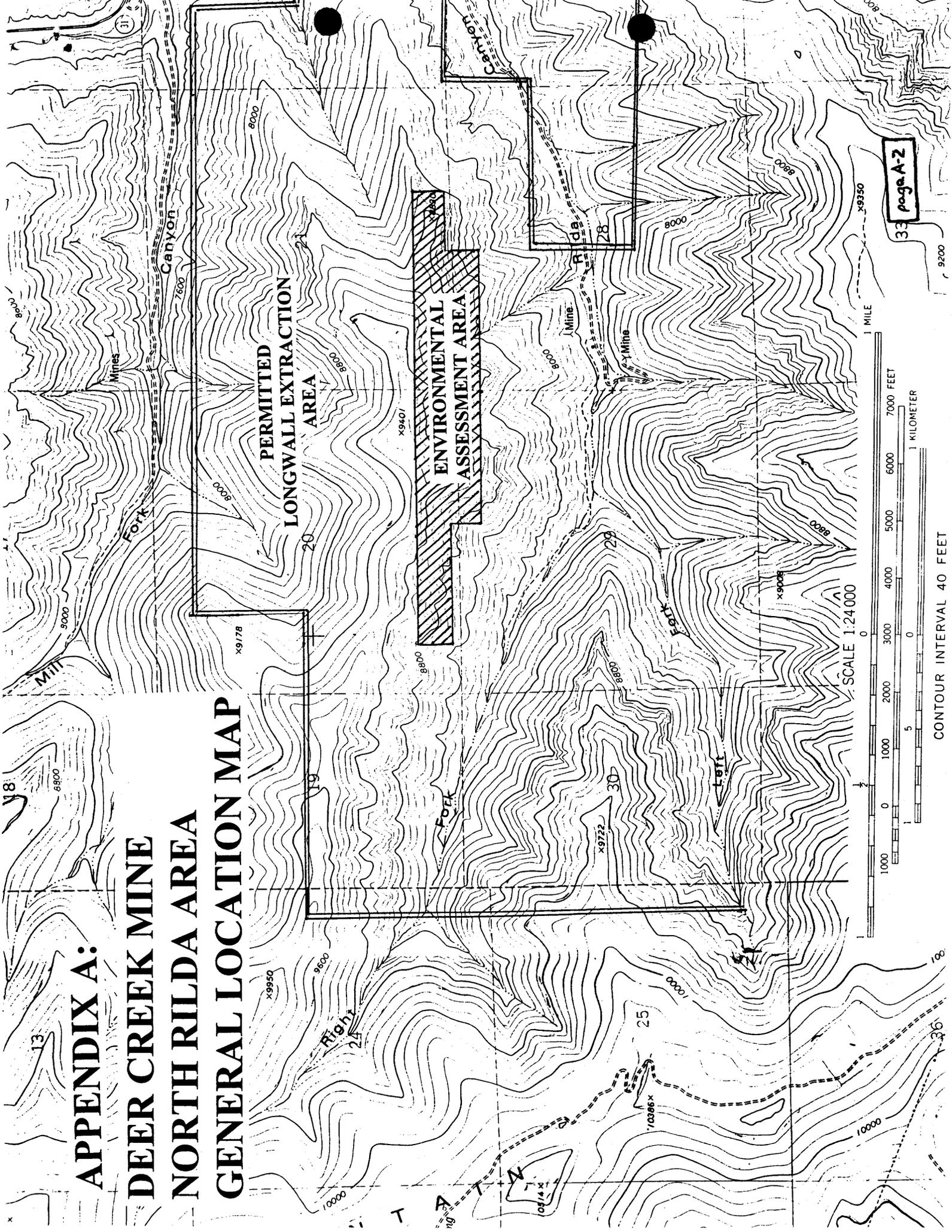


# APPENDIX A:

## DEER CREEK MINE

## NORTH RILDA AREA

## GENERAL LOCATION MAP



page A-2

CONTOUR INTERVAL 40 FEET



Environmental Assessment  
for  
Deer Creek Mine  
North Rilda Extension

Manti-La Sal National Forest  
Ferron-Price Ranger District  
Emery County, Utah

July 1999

Responsible Officials: Janette S. Kaiser  
Forest Supervisor  
Manti-La Sal National Forest

Dick Manus  
Field Office Manager  
Price Field Office  
Bureau of Land Management

Cooperating Agency: Office of Surface Mining  
Denver, Colorado

ID Team Leader: Jeffrey Wade DeFreest, PG  
District Geologist, IDT Leader

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## CHAPTER 1 Purpose and Need

### A. INTRODUCTION

This chapter presents the project proposal (proposed action), the purpose and need for the proposal, the decisions to be made, public involvement efforts (scoping), and the resulting issue identification.

The Utah Division of Oil, Gas and Mining (DOGGM) received a proposal from Energy West Deer Creek Mine to conduct longwall mining and subsequently subside the north slope of Rilda Canyon. This permit amendment and associated revision of the resource recovery and protection plan (R2P2) are for areas within Federal coal leases U-024317, U-2810, SL-051221, and U-06039; all of which contain special coal lease stipulation # 9 from the Forest Plan. Stipulation #9 currently precludes mining that would cause the creation of hazardous conditions such as potential escarpment failure and landslides *except* at specifically approved locations. The stipulation is as follows:

*Except at specifically approved locations, underground mining operations shall be conducted in such a manner so as to prevent surface subsidence that would: (1) cause the creation of hazardous conditions such as potential escarpment failure and landslides, (2) cause damage to existing surface structures, and (3) damage or alter the flow of perennial streams. The Lessee shall provide specific measures for the protection of escarpments, and determine corrective measures to assure that hazardous conditions are not created.*

The Forest Service, as the surface management agency, must decide whether or not to consent to approval of subsidence of the escarpments at the north slope of Rilda Canyon by the Bureau of Land Management (BLM); and consent to the DOGGM approval of the associated mine plan amendment.

Since the proposal requires amendments to Federal permits and would involve effects to National Forest System lands, the Forest Service, Manti-LaSal National Forest, will be the lead agency in the analysis. The BLM is responsible for administration of Federal Coal Leases and will participate in the analysis as a joint lead agency. The Office of Surface Mining (OSM) is responsible for administration of mine permits and will participate as a cooperating agency.

The project is located in Rilda Canyon on the Ferron-Price Ranger District within the Manti Division of the Manti-LaSal National Forest (Township 16 S, Range 7 E, partial Sections 20, 21, 28, 29). A location is mapped in Appendix A.

### B. PROPOSED ACTION

The proposed action is for the cooperating agencies to allow Deer Creek Mine to conduct full extraction longwall mining and subside the escarpments on the north slope of Rilda Canyon as shown in Appendix A. The Forest Service action would be to consent to the modification of the R2P2 by the BLM, and consent to the amendment of the Mining and Reclamation Plan (MRP) with the DOGGM.

Development of the proposed action included economic considerations. A detailed description of the company's proposal is outlined in Chapter 2, under Alternative 2.

### **C. PURPOSE AND NEED**

The general purpose and need for this project is to accomplish the following goal of the Forest Plan: "Provide appropriate opportunities for and manage activities related to locating, leasing, development, and production of mineral and energy resources." (Forest Plan, p. III-4).

The project-specific purpose and need of the proposed action is to maximize coal recovery and extend the mine life. This purpose and need also allows the BLM to achieve maximum economic recovery of coal from the Federal Coal Leases.

### **D. DECISIONS TO BE MADE BY RESPONSIBLE OFFICIALS/AUTHORITY**

The BLM, Price/San Rafael Field Office Manager must decide whether or not to approve the proposed amendment to the R2P2 under the Mineral Leasing Act of 1920, as amended; Coal Leasing Amendments Act of 1975; Surface Mining Control and Reclamation Act of 1977; and the Utah Coal Rules.

The Forest Supervisor, Manti-La Sal National Forest, must decide whether or not to consent to the R2P2 and resulting MRP amendment. This involves the exercising and approval/authorization as provided for in the stipulation attached to the leases.

The pending decisions must conform to the overall guidance of the Manti-La Sal National Forest Plan (1986) and its Final Environmental Impact Statement (FEIS) and the BLM's San Rafael Resource Management Plan (1992) and its FEIS. This environmental assessment tiers to the analysis decisions resulting from both EIS's which are available for review at the Ferron/Price Ranger District and the Manti-La Sal National Forest Offices and the BLM San Rafael/Price Resource Area and the Moab District Offices, respectively.

### **E. SCOPING**

The solicitation of comments on a proposal is called scoping. The results of scoping help to identify concerns and issues about the project that will provide the main points of analysis.

Internal scoping for this project included review by various Forest Service and BLM resource specialists. External scoping consisted of notice in the Forest's *Schedule of Proposed Actions*, a Legal Notice published in the Sun Advocate (May 5th 1998), a News Release to the Sun Advocate from which an article was written about the project (May 5th, 1998), and a letter to an 18-person mailing list. Those individuals to whom letters were mailed included: Federal, State, and local governmental or land management entities; adjacent landowners and mining companies; range permittees; and others known to be potentially interested or affected. Three letters were received in response to external scoping. A letter was received from the US Fish and Wildlife Service discussing the effects of subsidence. Additionally letters of support of the project were received from the Utah Mining Association and the United Mine Workers of America. The entirety of these letters can be found in the Project Record.

The results of scoping identified the following initial concerns.

- *Potential Rockfalls*
- *Impacts To Water Resources*
- *Impacts To Wildlife Resources*
- *Impacts To Rangeland Use*
- *Impacts To Cultural Resources*
- *Socio-Economic Impacts*

## F. ISSUES

Issues represent a synthesis of concerns expressed about the project. Issues set the scope of the project analysis. The scope of the project analysis includes the proposal, modifications to the proposal, alternatives to the proposal, and disclosure of potential effects.

The results of scoping were used to define the issues for this project. Issues are identified as either key or resolved. A key issue is one that requires an alternative to the proposal for potential resolution. It is appropriate to provide a full disclosure of anticipated effects related to a key issue. A resolved issue represents a concern resolved by the proposal through minor modifications to the proposal, project design features, or management direction (i.e. laws, regulations, policies, Forest Plan Stipulations). Sometimes discussion of anticipated effects related to a resolved issue is warranted to assist the decision maker in making a reasoned and informed decision. There were no key issues identified from the proposal.

### Resolved Issues

The following issues are resolved through specific characteristics of the project area and its present use, project design features and/or management requirements. Further discussion of anticipated effects related to the following resolved issues is warranted to assist the decision maker in making a reasoned and informed decision.

***Rockfalls:*** The proposal is likely to cause rockfalls. Rockfalls could affect visual quality, safety, vegetation, and stream sedimentation. The visual quality objective for the project area is "modification"; potential rockfalls would be within the parameters of this visual quality objective. The Colorado Rockfall Simulation Program was applied to find if toppled rocks would reach the road, and the results showed none of the 10 sample paths permitted rocks to reach the canyon-bottom road. Destroyed vegetation and increased sedimentation have been found to be negligible considering the existing condition of rocky terrain. Further discussion of this issue will address recreational use of the area, the potential hazards/risk level and project design.

***Water Resources:*** The proposal could potentially affect water resources (Water quantity, quality, wetlands/riparian habitat, and municipal water developments). There is only one known seep (no live surface water) near the eastern end of the project area on the ridge between Rilda and Mill Fork Canyons, and it is too small to be developed for a water source. The remainder of the water resource concerns will be resolved through application of the existing coal lease stipulations and monitoring discussed in the description of the proposal in Chapter 2 and further

discussed in Chapter 4. The North Emery Water Users Association spring development is outside of the project area and lies topographically and stratigraphically below the proposed project as well. It is discussed further in Chapter 3.

**Wildlife Resources:** The proposal could affect wildlife resources (elk and deer and their habitat , raptor habitat/nesting, threatened species, endangered species, and sensitive species).

**Elk and Deer** - Elk and deer use the ridge top and valley bottoms throughout the project as transitional range between summer and winter range. Subsidence and potential escarpment failure is not likely to affect either population as the escarpment creates a barrier between the ridge top and valley bottom environments. Their distribution and use of the area will be further discussed in chapters 3 and 4.

**Raptors** - Raptor habitat is present in the escarpments of Rilda Canyon, however no currently used nests have been located in the potential escarpment failure area and cliff nesting habitat will remain available. Further discussions can be found in chapters 3 and 4.

**Threatened and Endangered Species** - A Biological Assessment has been completed that discloses expected effects to those species suspected to occur within the project area. A "no effect" determination has been made. (Project Record)

**Sensitive Species** - A Biological Evaluation has been completed describing those species that may be impacted by the project (see chapters 3 and 4). Typically the area does not contain suitable habitat for most Sensitive Species or the overall disturbance to those species and their habitat that may occur in the area is negligible. The evaluation anticipates a "no impact" to the viability of sensitive plant and most vertebrate species. (Chapter 4, Project Record)

**Socio-Economic Impacts:** The Deer Creek Mine currently employs 263 miners who would potentially keep their jobs longer as the North Rilda area is mined out if the action alternative is selected. Additionally, the royalties returned to the US Treasury would be increased if the action alternative is selected. These concerns are addressed throughout the analysis for comparison purposes.

The following resolved issues are resolved through project design features and management requirements and do not warrant further discussion in this document. Referenced Stipulations are included as part of this project and can be found in the Project Record.

**Rangeland Use:**

**Sheep:**

The proposal could disturb sheep grazing operations, primarily if subsidence induced cracks cause water loss to springs on the ridge between Rilda and Mill Fork Canyons. This issue is resolved because there is only one known seep on the ridge, and it is not sufficient for development or stock watering. Additionally, sheep are only occasionally pushed that far out on the ridge and are only in there 1-2 days (if at all) due to terrain and available vegetation considerations.

Cattle:

As a result of the upgrading of the Rilda Canyon Road by Emery County to the "forks area" and the construction of the Deer Creek Mine surface facility, mitigation lead to installation of a cattleguard and fence, precluding the grazing use of that portion of Rilda Canyon above the springs in the northwest 1/4 of section 28. Little range use is experienced from the mouth of the canyon up to the cattle guard and fence, primarily only during the period that the Gentry Allotment cattle are being moved onto and off the forest.

Cultural Resources: Failure of escarpment could potentially affect significant historical properties, especially prehistoric rock shelter and/or rock art sites in escarpment locales. An archeological reconnaissance of escarpment areas was conducted in 1997. Several areas were identified as having some potential to contain cultural resources. Subsequent intensive archeological survey of the areas did not locate any archeological/historical sites. Based on this data, it was determined that the project should have no effect on historic properties. Consultation was done with the State Historic Preservation Office (SHPO) and concurrence with the "no effect" finding was made (Project Record).

## CHAPTER 2

### Description of Alternatives

#### A. INTRODUCTION

This chapter presents the alternatives considered for implementation, features common to action alternatives, alternatives considered but not further analyzed, and a comparative summary table of the alternatives considered for implementation responding to the identified issues.

A no action alternative and an action alternative are considered in detail.

#### B. ALTERNATIVE DESCRIPTIONS

##### Alternative 1 - No Action

Forest Service would not consent to the proposed action and mining would continue under the approved R2P2 and MRP. Subsequently, the BLM would not approve the proposed amendment to the R2P2 and DOGM would not approve the corresponding mine permit amendment. Alternative 1 addresses the need to provide a "No Action" alternative (40 CFR 1502.14) and provides a benchmark for evaluating the effects of implementing the proposal. The operator would not be permitted to conduct full extraction longwall mining under the escarpment.

Though full support mining is permitted under the current mining plan, the reserves would not be economical to mine (personal communication with Chuck Semborski, Energy West Mining Co., June 1999, and George Tetreault, BLM, July 1999). No mitigation measures or monitoring would be required as part of this alternative, beyond what is already in the mining and reclamation plan.

##### Alternative 2 - Consent to Mining as Proposed

This alternative wholly responds to the purpose and need.

The Forest Service would consent to the modification of the R2P2 by the BLM, and consent to approval of the amendment of the Mining and Reclamation Plan by DOGM which would allow Deer Creek Mine to conduct full extraction longwall mining and subside the escarpments in the north slope of Rilda Canyon as shown in Appendix A.

Additionally, Deer Creek Mine would post warning signs at specified points in Rilda Canyon, warning recreational users of the potential rockfall hazards, as stated in their proposal. All commitments in the mining and reclamation plan would be adhered to.

The Deer Creek Mine would also monitor subsidence through their mine plan requirements and as proposed, provide higher resolution monitoring data for the north slope of Rilda Canyon by installing prisms for accurate surveying on the top of the escarpments to determine when subsidence is substantially complete.

**C. COMPARISON SUMMARY OF ALTERNATIVES**

<b>Responsiveness to Purpose and Need</b>	<b>Alternative 1</b>	<b>Alternative 2</b>
Increased Recovery of Coal Reserve (Tons)	0	7,219,341
Extension of Mine Life	None	2 Years

<b>Resolved Issues</b>	<b>Alternative 1</b>	<b>Alternative 2</b>
<b>Rockfalls:</b>		
Escarpment Failure due to mining induced subsidence:		
Feet of Escarpment at High Risk of Failure	None	7,600
Feet of Escarpment at Moderate Risk of Failure	None	2,300
Feet of Escarpment at Low Risk of Failure	None	1,100
Modified Visual Quality Experience Potential	Low	High
Compliance to Forest Plan Visual Quality Objective	Yes	Yes
Safety Hazard/Risk	Low Risk	Low Risk
Destroyed Vegetation	None	Negligible
Increased Stream Sedimentation	None	Negligible
<b>Water Resources:</b>		
Risk of Water Quality/Quantity Loss	None	Negligible
Wetlands/Riparian Habitat Loss	None	Negligible
Risk To Municipal Watershed	None	Negligible
<b>Wildlife Resources:</b>		
Elk/Deer	No Impact	No Effect
Raptors	No Impact	No Effect
Threatened & Endangered		
Bald Eagle	No Effect	No Effect
Peregrine Falcon	No Effect	No Effect
Southwestern Willow Flycatcher	No Effect	No Effect
Sensitive Species		
Spotted Bat	No Impact	MIIH
Townsend's Big-eared Bat	No Impact	MIIH
Flammulated Owl	No Impact	No Impact
Northern Goshawk	No Impact	No Impact
Three-toed Woodpecker	No Impact	No Impact
MIIH = "May impact individuals or habitat, but will not likely contribute to a trend toward Federal listing or loss of viability to the population or species"		
<b>Socio-Economics:</b>		
Employment years of 263 miners	4 yrs, 5 mos.	6 yrs, 5 mos.
Royalties paid to the US Treasury	\$25,658,620	\$37,209,566
<b>Rangeland Use:</b>	No Impact	No Impact
<b>Cultural Resources</b>	No Impact	No Impact

## CHAPTER 3

### Description of Affected Environment

#### A. INTRODUCTION

This chapter summarizes the resources of the affected area, with emphasis on the issue topics.

This analysis tiers to the Manti-La Sal National Forest Land and Resource Management Plan (Forest Plan) Final Environmental Impact Statement (FEIS) and Record of Decision, 1986, as amended. Relevant Forest-wide and management area goals, direction, and standards from the Forest Plan are incorporated in this analysis and are further discussed in this chapter. Additionally this analysis tiers to the BLM's San Rafael Resource Management Plan (1992) and its FEIS.

#### B. GEOGRAPHIC AREA

The project area is within the Huntington watershed on East Mountain. Specifically, the undermining is proposed for the ridge between Rilda and Mill Fork Canyons and the north canyon slope or escarpment of Rilda Canyon. Elevations range from approximately 7,400 feet in the canyon bottoms to 9,400 feet on top of the ridge.

The Rilda Canyon Road (FDR 50246) is under the jurisdiction of Emery County. It leaves State Highway 31 near the Forest Boundary and passes through the Rilda Canyon in a southwesterly direction. Near the fork between the Right (north) and Left (south) Forks of Rilda Canyon, the county road terminates at a turn-around, and a mine road continues up the Left Fork behind a locked gate. The mine road is closed to public vehicular traffic and is used solely by the mine for access to the South Fork Breakout on a limited basis.

#### C. GEOLOGY/MINERALS

Rilda Canyon is a tributary canyon to Huntington Canyon which is located on the Wasatch Plateau physiographic area. The Cretaceous Castlegate Sandstone is one of the upper members of the Mesa Verde Group and is the dominant cliff forming rock in the Rilda Canyon vicinity which forms the escarpment area where subsidence induced rockfalls would originate. It overlies the Blackhawk Formation which contains the coal beds which would be mined under the proposal. The Castlegate Sandstone ranges from 100 feet to 210 feet in thickness in the Rilda Canyon setting.

Federal Coal Leases U-024317, U-2810, SL-051221, and U-06039 are included within the northern portion of the permit area for the Deer Creek Mine. It is currently owned and operated by PacifiCorp and its subsidiary company, Energy West. Underground mining facilities within the identified leases include main entries for access within the Deer Creek Mine. There are surface facilities located in the Left Fork of Rilda Canyon, including a breakout (portal), fan, and substation. Additionally a power line was built in 1995 to support the surface facilities. Subsidence and hydrologic monitoring are being conducted under the MRP. These documents are contained in the Forest Service Project Records and can be referred to for additional information.

Historically, the Leroy Mine, Rominger Mine, and Helco Mine operated in Rilda Canyon in the west half of Section 28. These mines were closed and reclaimed under the State of Utah, Abandoned Mine Land Reclamation programs in 1988.

Recoverable coal quantities are estimated at 23,255,979 tons in the entire project area, considering both seams are longwall mined. Mining of the two seams and expected timing are illustrated in the table below. This table assumes that full support room & pillar mining would not be economic, even though already approved in the current MRP and R2P2 (Chuck Semborski, personal communication, June 9th, 1999; George Tetreault, personal communication, July 14, 1999).

**Mining Table**

Seam	Recoverable Tons	Estimated Timing / Minelife
<b>Blind Canyon</b>		
4 Northern Panels	8,606,879	April 1999-August 2001
2 Southern Panels	3,657,598	August 2001-September 2002
<b>Hiawatha</b>		
4 Northern Panels	7,429,759	September 2002-October 2004
2 Southern Panels	3,561,743	October 2004-September 2005
<b>Total</b>	23,255,979	Area would be mined out by September 2005 if fully mined as proposed

#### **D. WATER RESOURCES**

The project area lies on a ridge dropping off of East Mountain southeasterly toward Huntington Canyon. There are perennial streams in both Rilda and Mill Fork Canyons, and scattered springs and seeps along the ridge in between. There is only a single known seep that lies on the ridge, *within the project area*. This seep does not produce enough water to warrant development for any type of use.

The North Emery Water Users Association (NEWUA) has, under Special Use Permit, a spring development for culinary water in the west 1/2 of Section 28 in the bottom of Rilda Canyon. The development including meters, valves and collection boxes is fenced to keep livestock and wildlife out of the development area. It is shown on the map in between the Leroy and Helco Mines. Additionally, a pipeline parallels the Rilda Canyon road, carrying water down-canyon from this source.

The springs are fed by the alluvial system in Rilda Creek and the majority of their recharge is from springs at the head of Rilda Canyon, west of the project area. A north-south fracture system is also thought to partially feed the NEWUA springs.

## **E. WILDLIFE RESOURCES**

### **Elk and Deer**

The elk herd on East Mountain utilizes Rilda Canyon, Mill Fork Canyon and the ridge in-between as transitional range. The lower regions below the project area to Huntington Canyon provide winter range. The deer found in the project area are also part of a greater Manti herd. Deer found here are not as prevalent as the elk. Deer and elk inhabiting the project area are very important ecologically and economically. The Manti-La Sal National Forest designates deer and elk as Management Indicator Species (MIS). MIS is defined as a select group of species which can indicate change in habitat resulting from activities on the Forest (Forest Plan, p. II-31).

The project area is a moderately popular hunting site. Deer and elk within the project area provide hunting and viewing opportunities for many recreationists from around the State of Utah, similar to neighboring canyons and other areas on the forest.

Within the project area, deer and elk habitat is probably most influenced by the existence of roads which results in high human use and disturbance. Where not associated with roads, the project area contains the basic habitat elements needed by deer and elk for survival. Elk tend to avoid areas adjacent to roads having vehicle traffic, and spend more time in areas of dense cover above the forks or on the ridge between Mill Fork and Rilda Canyons.

### **Raptors**

Raptor surveys are conducted annually as part of the Deer Creek Mine Mining and Reclamation Plan. The first surveys were conducted in 1981 and 1982, and they have been conducted annually since 1986. The most recent survey was conducted in 1998. No raptor nests were found in the area directly associated with the North Rilda lease area (project area) in the recent surveys. The surveys from the early 1980's indicated 2 golden eagle nests within the project area which can no longer be found.

### **Forest Service Sensitive Species**

#### **Regulatory Framework**

Although not required under the Endangered Species Act, it is Forest Service policy to analyze potential impacts to Proposed and Sensitive Species (Forest Service Manual (FSM) 2670.31-32). Proposed species are those that are proposed by the US Fish and Wildlife Service to be listed as Threatened or Endangered. Sensitive Species are those identified by the Forest Service Regional Forester as, "those species for which population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or density" or "significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution" (FSM 2670.5).

#### **Plant Species**

A Biological Evaluation for Sensitive species is located in the Project Record. There are seven sensitive plant species known or suspected to occur on the Manti Division (Ferron/Price and Sanpete Ranger Districts). Those species include: Creutzfeldt-flower (Cryptantha creutzfeldii), Carrington Daisy (Erigeron carringtoniae), Canyon sweetvetch (Hedysarum occidentale var. canone), Link Trail Columbine (Aquilegia flavescens var. rubicunda), Musineal Groundsel (Senecio musinensis), Maguire Campion (Silene

petersonii), and Arizona Willow (Salix arizonica). Details concerning these species, their habitat preferences, and occurrences are described below.

**Locations and General Habitat for the  
Sensitive Plant Species Occurring in the Ferron/Price Ranger District**

District	Listed Species	Location and Habitat
Ferron/Price	Creutzfeldt flower	Open Mancos Shale hillside and lower slopes in dry wash and Lower Muddy Creek drainages. Elevation 5500 to 6000 ft. Pinyon, Juniper mixed Mtn. brush veg. type. Some habitat occurs in the Upper Miller Creek drainage.
Ferron/Price	Carrington Daisy	Small isolated populations have been found mostly on Flagstaff limestone outcrops, at the head of Cove Creek top of East Mtn., south Rim of Heliotrope Mtn., and top of Ferron Mtn. Wind blown ridge top and snow drift sites. Elevation 9,000 to 11,000 ft. Low forb vegetation type.
Ferron/Price	Canyon sweetvetch	Scattered populations occur in lower Huntington Canyon, Straight Canyon, and near Joe's Valley. Plants are usually found on sites with a high water table, near springs or along stream beds. Riparian site in Pinyon/Juniper type. River Birch and Squaw bush are plants most commonly associated with this species. Elevation 5500 to 7000 ft.
Ferron/Price	Link Trail Columbine	"Link Canyon Columbine". This plant occurs in seeps and wet sites. Populations found in Link Canyon, Box Canyon, Muddy Creek drainage, Straight Canyon, and Joes Valley.
Ferron/Price & Sanpete	Musineal Groundsel	The Musinea Groundsel preferred habitat is rock talus and slide rock sites near snow drifts in Flagstaff Limestone formation. Population sites located on White Mountain, Heliotrope Mtn., High Top and Camel Rock, head of 12-Mile Canyon.
Ferron/Price & Sanpete	Maguire Campion	Scattered populations found mostly on Flagstaff limestone formation outcrops on high elevation ridges and snowdrift sites. From Wagon Road Ridge south to the top of White Mtn., Wasatch Plateau, Manti-La Sal National Forest. There is also a small population on Mt. Baldy and Black Mtn. Plant is part of the sub-alpine low forb plant community.
Ferron/Price	Arizona Willow	Arizona Willow requires a specific habitat that occurs as narrow strips along perennial streams around meadows and is dominated by mesic graminoids and mesic forbs. Elevation 8,990 to 10,500 ft. One population has been found on the Manti-La Sal N.F., Upper Beaver Creek, Muddy Creek drainage.

There are no known Forest Service Sensitive plant species within the project area. Except for Canyon sweetvetch, there is no known habitat for Forest Service sensitive plant species within the project area. Canyon sweetvetch habitat is found at the base of the slopes where springs or seeps occur and along the streambed. Habitat for the other sensitive plant species is not existent.

Vertebrate Species

A Biological Evaluation for Sensitive species is located in the Project Record. There are five vertebrate sensitive species known or suspected to occur on the Manti Division: Spotted Bat (Euderma maculatum), Townsend's Big-eared Bat (Plecotus townsendii), Flammulated Owl (Otus flammeolus), Northern Goshawk (Accipiter gentilis), and Three-toed Woodpecker (Picoides tridactylus).

**Spotted Bat Habitat** - Spotted bats occur in scattered areas throughout Utah. They have been found in a variety of habitat types including open ponderosa pine, desert scrub, pinyon-juniper, and open pasture and hay fields. They roost alone in rock crevices high up on steep cliff faces. Cracks and crevices ranging in width from 0.8-2.2 inches in limestone or sandstone cliffs are critical roosting sites. There is some evidence that individuals show fidelity to roost sites. They are territorial and avoid each other while foraging. They are thought to migrate south for winter hibernation. Spotted bats are rare and may

be limited by suitable roosting sites. They are found in relatively remote, undisturbed areas, suggesting that they may be sensitive to human disturbance. Little is known of the spotted bat's food habits, they are thought to feed mainly on moths. They forage alone, after dark, and avoid each other by listening to the echolocation calls of others. (Leonard and Fenton, 1983; Woodsworth et. al., 1981; Watkins, 1977)

In the summer of 1997, surveys conducted by Genwal Resources Incorporated detected spotted bats using habitats within Mill Fork Canyon, Crandall Canyon, Biddlecome Hollow, Tie Fork, Huntington Canyon, and Bear Creek Canyon. Foraging areas were located at relatively low elevation sites associated with riparian vegetation with Huntington Canyon. Specific individual roost sites were not located, general roosting areas were identified on the cliff faces/rock outcrops in Crandall and Mill Fork Canyons. Additional roosting areas were identified throughout the Huntington Canyon drainage among sizeable cliff faces (Johanson, Rogers and Sherwin, 1997). Known observations of spotted bats on the Wasatch Plateau have been made at Joes Valley Reservoir and at Emerald Lake.

Spotted bat foraging and roosting habitat can be found throughout the Wasatch Plateau, mainly associated with riparian areas and steep rock/cliff outcrops. Evidence of bats, the species is unknown, was observed in the project area in the form of bat guano at isolated locations along the rock escarpment. Any spotted bats present would primarily use the escarpment for roosting and adjacent riparian area for foraging purposes.

**Townsend's Big-Eared Bat (Western Big-Eared Bat) Habitat** - Townsend's or Western Big-eared bats use a variety of scrub and forested habitats, throughout western North America. These bats use juniper/pine forest, shrub/steppe grasslands, deciduous forests and mixed coniferous forests from sea level to 10,000 feet elevation. They utilize colonial nurseries. Cool places such as caves, rock fissures, mines, and buildings are used for roosting and hibernation. Foraging on primarily moths is often done in open woodlands, along forest edges, and over water.

The Townsend's Big-eared bat occurs throughout western North America including Utah. During the winter they roost singly or in small clusters. They remain at these sites from October to February. Migration for these bats usually means a change in location in the same cave or to another nearby cave. The Townsend's Big-eared bat is very sensitive to human disturbance. It will readily abandon roosts when disturbed. (Kunz and Martin, 1982; Utah Division of Wildlife Resources, 1980).

In the summer of 1997, bat surveys were conducted by Genwal Resources Incorporated in areas within Huntington Canyon (Crandall Canyon, Biddlecome Hollow, Tie Fork, Huntington Canyon, Mill Fork, and Bear Creek Canyon). No Townsend's Big-eared bats were located in those areas.

In 1992, Townsend's Big-eared bats were found using inactive coal mines as hibernacula on the Ferron/Price Ranger District. They have also been found roosting in buildings of the Ferron/Price Ranger District in the town of Ferron during late summer of 1992.

Townsend's Big-eared bat foraging and roosting habitat can be found throughout the Wasatch Plateau, mainly associated with riparian areas and steep rock/cliff outcrops. Evidence of bats, the species is unknown, was observed in the project area in the form of bat guano at isolated locations along the rock escarpment. Any Townsend's Big-eared bats present would primarily use the adjacent riparian area for foraging purposes.

**Flammulated Owl Habitat** - Flammulated owls are found throughout the western United States including Utah. They can be found in the mixed pine forests, from pine mixed with oak and pinyon at lower elevations to pine mixed with spruce and fir at higher elevations. They have also been found in aspen and second growth ponderosa pine, however, they prefer mature Ponderosa Pine-Douglas fir forests with open canopies. Large diameter dead trees with cavities are important nest site characteristics. They avoid foraging in young dense stands where hunting is difficult. Flammulated owls are dependant upon mature conifer stands for nesting. They are also known to avoid cut-over areas. Flammulated owls are almost exclusively insectivorous, preying on small to medium sized moths, beetles, caterpillars, and crickets (Reynolds and Linkhart, 1987; Johnsgard, 1988; Bull et. al., 1990).

Flammulated owls have been found in the Quitchupah drainage and the head of the Muddy Drainage on the Ferron/Price Ranger District. All but one of these locations have been associated with ponderosa pine.

**Northern Goshawk Habitat** - In nesting or foraging, the goshawk is a raptor of the dense forest. Goshawks have been found in a variety of forest ecosystems including lodgepole pine, ponderosa pine, Douglas-fir, mixed forest throughout much of the Northern hemisphere. They prey upon small mammals and birds (rabbits, squirrels, chipmunks, grouse, woodpeckers, jays, robins, grousebeaks, etc.). Goshawk nest sites are usually located in mature forests near water, and on benches of relatively little slope. Nests are often used year after year. Goshawks are very protective of their young in the nest and loudly defend them to intruders. They are very sensitive to human disturbance and have abandoned nests and young due to human activities that take place too close to their nest (Kennedy and Stahlecker, 1989; Hennessey, 1978).

The goshawk is a summer resident of the Wasatch Plateau and the number of nesting birds vary year to year. Nest sites are associated with aspen/mixed conifer, mixed conifer forest types. Habitat for the goshawk is marginal since the area of impact is mostly pinyon-juniper which doesn't provide good foraging or nesting areas.

**Three-Toed Woodpecker Habitat** - Three-toed woodpeckers range across North America. They are found in northern coniferous and mixed forest types up to 9000 feet elevation. Forests containing spruce, grand fir, ponderosa pine, tamarack, and lodgepole pine are used by Three-toed woodpeckers for foraging and nesting. Nests may be found in spruce, tamarack, pine cedar, and aspen trees. Three-toed woodpeckers forage mainly in dead trees, although they will feed in live trees. About 75% of their diet is wood-boring beetle larvae, but they also eat moth larvae. They are major predators of the spruce bark beetle, especially during epidemics. Fire or insect-killed trees are major foraging areas. Forest fires and areas of insect outbreaks may lead to local increases in woodpecker numbers after 3-5 years (Bull et. al., 1986; Scott et. al., 1980).

Surveys for three-toed woodpeckers took place in suitable habitat on the Wasatch Plateau in June and July of 1992. Further surveys during the 1993, 1994, 1995, and 1996 field seasons on the Plateau resulted in additional three-toed woodpecker findings. This species was found on all Ranger Districts surveyed. Three-toed woodpeckers habitat is marginal in the area of impact is mostly pinyon-juniper. The presence of tree mortality from insects is limited to isolated trees rather than the epidemic that is found in other areas of the forest.

\* References cited for sensitive species can be found in the Biological Evaluation prepared for this project (Project Record).

**Federally Listed Proposed Species**

There are no known US Fish and Wildlife Service Proposed plant or vertebrate species within the project area (US Fish and Wildlife Service list January 7, 1998).

**Federally Listed Threatened And Endangered Species**

Federal agencies are mandated to analyze effects of proposed projects on Threatened and Endangered species according to the Endangered Species Acts. A Biological Assessment for Threatened and Endangered species is located in the Project Record. Species potentially impacted by the project include:

<u>Species</u>	<u>Classification</u>
Bald Eagle ( <u>Haliaeetus leucocephalus</u> )	Threatened
Peregrine Falcon ( <u>Falco peregrinus anatum</u> )	Endangered
Colorado Squawfish ( <u>Ptychocheilus lucius</u> )	Endangered
Bonytail Chub ( <u>Gila elegans</u> )	Endangered
Humpback Chub ( <u>Gila cypha</u> )	Endangered
Razorback Sucker ( <u>Xyrauchen texancus</u> )	Endangered
Southwestern Willow Flycatcher ( <u>Empidonax traillii extimus</u> )	Endangered

\* The above species list were derived from a U.S. Fish and Wildlife Service (USFWS) list of threatened, endangered and proposed species that may be present in the general Wasatch Plateau area (List received 1998)

**Bald Eagles Habitat**

During the breeding season bald eagles are closely associated with water, along coasts, lake shores, or river banks. During the winter bald eagles tend to concentrate wherever food is available, this usually means open water where fish and waterfowl can be caught. They also winter on more upland areas feeding on small mammals and deer carrion. At winter areas, bald eagles commonly roost in large groups. These communal roosts are located in forested stands that provide protection from harsh weather.

Bald eagles can often be found near lakes and reservoirs as well as upland areas on the Manti Division during the late fall and early winter. When lakes and reservoirs freeze over most eagles will leave, however, those feeding in upland areas may stay late into the winter. A pair of nesting bald eagles has recently been located ten miles east of the Forest boundary near the town of Castle Dale. In 1994, a review of the nesting adults and fledglings indicated their foraging habits were within five mile radius from the nest tree. The eagles were not observed inhabiting the analysis area (Boshen, 1995). No bald eagles are known to nest on the forest.

**Peregrine Falcon Habitat**

Peregrines occupy a wide range of habitats. They are typically found in open country near rivers, marshes, and coasts. Cliffs are preferred nesting sites, although peregrines now regularly nest on man-made structures such as towers and high-rise buildings. Peregrines are known to travel more than 18

miles from the nest site to hunt for food. However, a 10 mile radius around the nest is an average hunting area, with 80 percent of the foraging occurring within a mile of the nest. Peregrines prey on wide variety of birds including shorebirds, waterfowl, grouse, and pigeons (Ratcliffe 1980; and Cade et al. 1988). Migrating or transient peregrines have been seen on the Wasatch Plateau, including Joes Valley.

On April 10, 1996 a helicopter survey conducted by the Utah Division of Wildlife Resources in cooperation with the PacifiCorp, Bureau of Land Management (BLM) and U.S. Forest Service (USFS) found a pair of falcons. The falcons have been observed several times since then from the ground. This is an expansion of the falcon into a new breeding territory and the first observation of breeding falcons in the Manti Division. The falcons have been observed showing breeding behavior including; copulating, driving golden eagles from the area, and exploration of ledges for egg laying. This pair is located approximately 10 miles south of the project area. A peregrine falcon has been seen in the project area, the bird probably uses the general area for foraging but no nesting sites are known to occur in the project area. Annual raptor flights will be done in conjunction with PacifiCorp and the UDWR.

#### **Colorado Squawfish Habitat**

The Colorado squawfish had a historic range from Green River, Wyoming, to the Gulf of California, but the species is now confined to the upper Colorado River Basin mainstream and larger tributaries (USFWS 1987a). The lower Green River between the Price and San Rafael rivers contains abundant Colorado Squawfish (USFWS 1987b). In general, the species decline can be attributed to direct loss of habitat, changes in water flow and temperature, blockage of migrations, and interactions with introduced fish species (USFWS 1987b). Colorado squawfish adults are thought to prefer deep water eddies and pools or other areas adjacent to the main water current, whereas the young inhabit shallow, quiet backwaters adjacent to high flow areas. Colorado squawfish feed on invertebrates while young but gradually move to preying on other fish after one year (Woodling 1985). No Colorado squawfish have been located on the Forest but they are present in the drainages that receive water originating on the Forest.

#### **Bonytail Chub Habitat**

Historically bonytail chubs existed throughout the Colorado River drainage (Woodling 1985). Recently, isolated captures of bonytail chubs have been made in the Colorado River basin but recruitment to the population is extremely low or nonexistent. The decline of the bonytail chub is attributed to dam construction and associated water temperature changes. Other factors contributing to the reduced numbers include flow depletion, hybridization, stream alterations associated with dam construction, and the introduction of non-native fish species. The bonytail chub generally inhabits eddies and pools over swift current areas (Woodling 1985). The chub is an omnivore, feeding mostly on terrestrial insects, plant debris and algae and begins to spawn at five to seven years of age (Behnke and Benson 1980).

No bonytail chubs have been located on the forest but they are present in drainages that receive water originating on the Forest.

### **Humpback Chub Habitat**

The humpback chub is believed to have inhabited all of the large rivers of the upper Colorado River basin and canyons of the lower Colorado River basin (Ono, Williams, and Wagner 1983). Presently the humpback chub can be located in and above the Grand Canyon, Arizona, and the major tributaries to the Colorado River (Woodling 1985). The USFWS (1990) cites stream alteration, including dewatering, and dams and channelization, as factors causing the decline of the species. The humpback chub normally lives adjacent to high velocity flows, where they consume plankton and small invertebrates (USFWS 1990). The humpback chub has not been located on the Forest but they are present in drainages that receive water originating on the Forest.

### **Razorback Sucker Habitat**

Historic distribution of the razorback sucker was mainly along the mainstream of the Colorado, Green and San Juan Rivers. They presently only occur in a portion of their former range in these rivers and are normally found in water four to ten feet deep within areas of strong currents and backwaters (Woodling 1985). Spawning fish have been located over both sand and gravel/cobble bars (USFWS 1987b). The razor back sucker feeds on small invertebrates, and animals and organic debris on the river bottoms. Behnke and Benson (1980) link the decline of the razorback sucker to the land and water uses, particularly dam construction and the associated change of flow regimes and river channel characteristics. The razorback sucker has not been located on the Forest but they are present in drainages that receive water originating on the Forest.

### **Southwestern Willow Flycatcher Habitat**

The Southwestern willow flycatcher (SWWF) spends most of its time in the southwestern United States and may be extending its range to the lower one-fourth of the state of Utah. These flycatchers are closely associated with riparian habitats, on the shores of ponds, or bordering marshy areas. They are also found in the brushy margins of fields, along mountain streams, and in shrubby floodplain areas. They prefer areas of high shrub densities interspersed with openings or meadows. The woody component of their habitat is almost exclusively deciduous including willows, alders, cottonwoods, aspens, and shrubs such as chokecherry, hawthorn, sumac and wild rose. As the name implies Southwestern Willow Flycatchers are insectivores eating wasps, bees, beetles, flies, moths and butterflies (Unitt 1987). Willow flycatchers have been found on the Wasatch Plateau, however at the present time it is uncertain if they are SWWF or Northern Flycatchers. Riparian vegetation is present in proximity to the project area but will not be affected by the operation.

\* References cited for Threatened or Endangered species can be found in the Biological Assessment prepared for this project (Project Record).

## **F. RECREATIONAL OPPORTUNITIES AND USE**

### **Current Opportunities and Use**

The project area has only one primary road up Rilda Canyon, which terminates near the forks of the canyon in Section 29. A mine road continues up the Left Fork to the surface facilities and a former drill road, now converted to a trail (Trail No. 395), continues up the Right Fork approximately 1.5 miles. This trail does not connect to a trail system, and is considered a "dead-end" trail. Both trail and road are used lightly during the summer and early autumn months. Light use of undeveloped campsites along Rilda Creek/Rilda Canyon Road is experienced during the summer months.

### **Visual Quality**

The characteristic landform of this area is steep narrow canyons of major escarpments. Flowing parallel to the Rilda Canyon Road is Rilda Creek which has entrenched this particular canyon. This perennial stream is bordered by a narrow riparian corridor interspersed with cottonwoods. Thin rocky soils and a relatively arid climate have resulted in an open, primarily pinyon-juniper community established mostly on the less steep slopes above the creek. These coarsely textured/vegetated slopes end abruptly at the base of the dominating Castlegate Sandstone outcrop. Soil colors are light brown to tan, consistent with this eroding parent sandstone material above.

The Forest Plan has assigned a Visual Quality Objective to each area of the Forest reflecting the desired management emphasis of the specific area. Some of those objectives assigned allow a noticeable degree of change. This flexibility was incorporated into the Forest Plan to facilitate Forest management goals.

The term Visual Quality Objective refers to the degree of acceptable visual alteration of the landscape and may be defined as follows: A desired level of scenic excellence based on physical and sociological characteristics of an area. Typically, more stringent VQO's are incorporated to protect the most highly visible and most frequently seen areas that have the greatest amount of variety in vegetation and other features which occur naturally.

After comparing the specific limits of the project area with the Forest Plan visual quality map, it was determined that any area of potential visual impact has been designated as Modification, on Forest Service lands.

Under the VQO of Modification, management activities may visually dominate the original characteristic landscape. However, activities of vegetative and landform alteration must borrow from naturally established form, line, color, or texture so completely and at such a scale that its visual characteristics are those of natural occurrences within the surrounding area or character type. Additional parts of these activities such as structures and roads must remain visually subordinate to the proposed composition. Reduction in form, line, color, and texture should generally be accomplished in the first year. In summary; this broad objective allows for most forms of management activity including those which are visually obtrusive, however the activity (especially associated roads and structures) must be designed to fit the context of the natural surroundings.

## **G. RANGELAND USE**

The project area falls within the Gentry Cattle and Horse Allotment (canyon bottoms) and the Crandall Ridge Sheep and Goat Allotment (ridge between Mill Fork and Rilda Canyons).

As a result of the upgrading of the Rilda Canyon Road by Emery County to the forks and the construction of the Deer Creek Mine surface facility, wildlife mitigation lead to installation of a cattleguard and fence, precluding the grazing use of that portion of Rilda Canyon above the springs in the northwest 1/4 of section Little range use is experienced from the mouth of the canyon up to the cattle guard and fence, primarily only during the period that the Gentry Allotment cattle are being moved onto and off from the forest.

The Crandall Ridge Sheep and Goat Allotment typically has 1032 sheep that graze the allotment overall. Few if any sheep are pushed out to the end of the ridge between Rilda and Mill Fork Canyons above the project area. These few sheep spend only 1 to 2 days there due to the lack of water and difficult access.

## **H. CULTURAL RESOURCES**

An archeological reconnaissance of escarpment areas was conducted in 1997. Several areas were identified as having some potential to contain cultural resources. Subsequent, intensive archeological survey of the areas did not locate any archeological/historical sites. Based on these data it was determined that the project should have no effect on historic properties. Consultation was done with the State Historic Preservation Office (SHPO) and concurrence with the "no effect" finding was made (Project Record).

## **I. SOCIO-ECONOMICS**

The Deer Creek Mine currently directly employs 263 people and contributes to jobs in related support industries in the surrounding communities and states. The mine provides coal for the Huntington Power plant which in turn supplies electricity for PacifiCorp's power grid. Lastly, the coal mined on the federal leases generates royalties for the US Treasury, which are further distributed to State and Local governments.

## CHAPTER 4 Environmental Consequences

### A. INTRODUCTION

This chapter identifies the projected impacts from implementing the no action and the action alternative considered in detail, presented in Chapter 1. This chapter discloses both the potential direct/indirect effects and cumulative impacts. Direct/indirect effects are those effects that would likely occur during or shortly after implementation of a specific alternative. Direct/indirect effects are presented by resource topic corresponding to the issues identified in Chapter 2. Cumulative impacts are those effects which may occur with implementation of an alternative combined with other past, present, or reasonably foreseeable actions.

The effects of the mining operation were assessed in the Environmental Assessments for Federal Coal Leases U-024317, U-2810, SL-051221, and U-06039, and any subsequent readjustments. These documents discuss the existing and potential effects from surface facilities and mining induced subsidence. These analyses were done assuming conventional, room and pillar mining operations under the escarpments however. No subsidence of the escarpment was to be authorized without additional analysis, as stipulated in the lease. Mining operations were permitted and are regulated under the Utah Coal Rules and associated Federal and State regulations and programs. Facilities have been designed and constructed in accordance with required standards. Below, each alternative is analyzed relative to the elements developed from the issues for this environmental assessment.

### B. DIRECT & INDIRECT EFFECTS OF ALTERNATIVE IMPLEMENTATION

#### RESPONSIVENESS TO PURPOSE & NEED:

##### Alternative 1

Approximately 16,036,638 would be mined from the previously permitted northern four panels in both Blind Canyon and Hiawatha Seams. About 7,219,341 tons of potentially recoverable coal reserves in the southern two panels of each seam would not be recovered due to surface resource concerns. By not being permitted to mine the two seams of the two southern panels, the life of the mine would be shortened by 2 years overall (ending about September 2003 rather than September 2005). Full support room & pillar mining of the 2 southern panels in each seam would not be economic, even though already approved in the current MRP and R2P2 (Chuck Semborski, personal communication, June 9th, 1999; George Tetreault, BLM, July 14, 1999).

##### Alternative 2

Approximately 23,255,979 tons of recoverable coal would be mined, and the life of the mine would be extended by 2 years, with operations finishing up in September 2005.

#### ISSUES:

## Rockfalls:

### Alternative 1

Under the "no Action" alternative, the Forest Service would not consent to the amendment of the R2P2 and the subsequent mine plan modification and the subsequent permits would not be amended as proposed by the responsible agencies. Mining induced subsidence would not be permitted and therefore there would be no mining induced failure. Natural rockslides would continue to occur at a slow rate; continually modifying the scenery (visual quality), altering vegetation, contributing to sedimentation and potentially creating hazardous conditions for public users.

### Alternative 2

Under the action alternative, the Forest Service would consent to the amendment of the R2P2 and the subsequent mine plan modification. Mining induced subsidence would be permitted and mining induced failure of parts of the escarpment would be expected. Natural rockslides would also continue to occur.

An analysis conducted by Maleki Technologies Inc. studied the Castlegate Escarpment in the project area and divided the approximately 11,000 feet of exposure into 110 cells and through data collection and modeling, established a risk of failure for each cell; low, moderate and high. Of the 110 cells analyzed (each approximately 100 feet long), 11 were shown to have a low potential of failure due to mining induced subsidence. Moderate potential of failure was assigned to 23 of the cells, and a high potential of failure was assigned to 76 cells, or about 69% of the total escarpment length in the project area.

These rockfalls, as seen from within Rilda Canyon, would appear similar to naturally occurring rockfalls in the vicinity, except that the linear scale would be substantially greater. As noted above, 69% of the escarpment, or approximately 7,600 feet, falls in the "high potential of failure" category. It is expected that much of that 7,600 feet of escarpment would experience some degree of rock falls or rockslides, forming fresh-looking rock faces and talus slopes.

The Maleki study predicted the potential for failure based on data collected at Newberry Canyon, Cottonwood Canyon (Trail Mountain Mine), and the geology in Rilda Canyon, including comparison of joint patterns and direction of mine panel orientation. The Maleki study suggested that the areas most susceptible to failure were concave portions of the escarpment. Prominences, jutting outward into the canyons, were not as likely to fail, or at least not to the same degree.

Escarpment failure could visually affect lands within the reaches of upper Rilda Canyon. This potential visual effect is predicted to be consistent with other common naturally occurring failures viewed throughout this and all other similarly formed canyons. Accordingly, noticeable visual effect to the casual Forest visitor will fall well within the parameters outlined for the VQO of Modification.

The project area lies out of sight of Highway 31, being located approximately 2 miles up Rilda Canyon. The visual effect of escarpment failure on the public at large is anticipated to be negligible.

The Colorado Rockfall Simulation Program (CRSP) and the support data provided by PacifiCorp does not show any rockfall reaching the Rilda Canyon Road. The proposal commits to the installation of warning signs to further minimize any risk to safety.

The CRSP was originally calibrated in PacifiCorp's analysis to a failure in similar geology and terrain in nearby Newberry Canyon, associated with their Cottonwood-Wilberg Mine complex. As part of their analysis, they observed the material of the Castlegate Sandstone that had failed and then modeled it to see what size material might be expected to fail in the subject mine plan amendment area.

Later the model was applied to the Trail Mountain Mine, mining of 4th and 5th east longwall panels, also undermining the Castlegate Sandstone, in a similar geologic terrain. The model proved to be accurate.

Given the low recreational use of this canyon, the results of the CRSP, and the voluntary proposal by the Deer Creek Mine to place signs warning of potential rockfall hazards along the Rilda Canyon road, there is negligible threat to public safety anticipated.

The Deer Creek Mine will also monitor subsidence through their mine plan requirements and as proposed, provide higher resolution monitoring data for the north slope of Rilda Canyon by installing prisms for accurate surveying on the top of the escarpments.

There is potential for temporary loss of vegetation on the sparsely vegetated slopes of Rilda Canyon due to rockfalls and slides, and a minimal increase in sediment production. The rock exposure on the north slope and naturally occurring sedimentation is already present. The failure of escarpment would merely accelerate the process, until revegetated.

### COMPARISON OF DIRECT EFFECTS

Disturbance	Alternative 1	Alternative 2
<b>Escarpment At Risk Of Failure Due To Mining</b>		
High Risk	0	7,600 feet
Moderate Risk	0	2,300 feet
Low Risk	0	1,100 feet
<b>Recoverable Tons of Coal</b>	<b>16,036,638</b>	<b>23,255,979</b>
<b>Life of Mine</b>	<b>4 yrs, 5 mos.</b>	<b>6 yrs, 5 mos.</b>

#### Water Resources:

##### Alternative 1

Under the "No Action" alternative, the Forest Service would not consent to the amendment of the R2P2 and the subsequent mine plan modification. Mining induced subsidence would not be permitted and therefore there would be no mining induced failure.

The north-south fracture system thought to be partially feeding the NEWUA springs could be altered by full support mining authorized by the current MRP and R2P2.

Natural rockslides would continue to occur continually altering vegetation and contributing to erosion and sedimentation.

### Alternative 2

As discussed in the Rockfalls section above, there is a high probability of escarpment failure, however, the CRSP results illustrate that rockfalls would not cause a safety hazard as far as the road. It follows that the potential for rocks and debris traveling further to threaten the spring development facilities and Rilda Creek is even less likely. However, accelerated erosion associated with the 7600 feet of rockfall/escarpment failure could increase sediment in the Rilda Canyon/Huntington Canyon drainages.

Any unforeseen damage to permitted facilities on National Forest System lands would be required to be repaired under the existing lease stipulations. Likewise, water loss (quality or quantity) would require replacement, and damages done to stream and riparian environments would also be repaired by the mine under their existing mining and reclamation plan.

The north-south fracture system thought to be partially feeding the NEWUA springs could be altered by full support mining authorized by the current MRP and R2P2 or by the action alternative allowing longwall mining and subsequent subsidence.

The seep on the ridge could be altered as a result of mining and subsidence leading to corresponding vegetation changes.

## **Wildlife Resources:**

### Alternative 1

Under the "No Action" alternative, the Forest Service would not consent to the amendment of the R2P2 and the subsequent mine plan modification. Mining induced subsidence would not be permitted and therefore there would be no mining induced failure affecting the wildlife resources.

### Alternative 2

#### **Elk and Deer**

This alternative could temporarily increase animal stress, causing displacement, and in rare isolated instances mortality. In the short term, mining disturbance could displace localized individual deer and elk populations that tend to move through the area below the escarpment area, in the bottom of the valley.

#### **Raptors**

Mining-induced subsidence would be permitted and therefore potential for escarpment failure would be likely, potential nesting habitat would be lost for raptors. There are currently no nests on the Rilda Canyon escarpment proposed to be mined, though two old nest sites had been previously identified in the Deer Creek Mine Mining and Reclamation Plan. These nests are now abandoned/dilapidated or gone entirely. Raptor surveys are conducted annually as part of the Deer Creek Mine Mining and Reclamation Plan, PacifiCorp conducts a helicopter raptor survey with the Utah Division of Wildlife Resources as observers. The first surveys were conducted in 1981 and 1982, and they have been conducted annually since 1986. The most recent survey was conducted in 1998. No raptor nests were found in the area directly associated with the North Rilda lease area (project area).

Raptors are known to reside in the vicinity of Rilda and Mill Fork Canyons. Though they have not been nesting in the project area, there are nests located on the south slope escarpments in Rilda Canyon, and elsewhere in the area. These individuals would continue undisturbed in the area under this alternative.

If a raptor moves into and nests upon escarpment in the project area, consultation with the Utah Division of Wildlife Resources will be initiated. If the raptor is a Threatened or Endangered species the US Fish and Wildlife Service (USFWS) will also be notified and consulted prior to proceeding with mining that would cause loss of the new nest(s).

### Sensitive Species

Six sensitive species have been evaluated for potential impacts. The species are listed below with the impact potential.

#### SPOTTED BAT (*Euderma maculatum*)

There is a potential impact to the spotted bat. The bats' roosting habitat is located on mountain side slopes in cracks and crevices in rock outcrops and escarpments. The area has a high potential of an escarpment failure that would remove some roosting habitat, and potentially result in the loss of individual bats. A past inventory (1997) conducted by Genwal Resources Incorporated detected spotted bats using habitats within Mill Fork Canyon, Crandall Canyon, Biddlecome Hollow, Tie Fork, Huntington Canyon, and Bear Creek Canyon (these areas are adjacent to Rilda Canyon). Foraging areas were located at relatively low elevation sites associated with riparian vegetation with Huntington Canyon. Spotted bat foraging and roosting habitat can be found throughout the Wasatch Plateau, mainly associated with riparian areas and steep rock/cliff outcrops. Roosting habitat associated with this project will be impacted if the escarpments fail due to the mining activity or natural rockslides. Evidence of bats, the species is unknown, was observed in the form of bat guano at isolated locations along the rock escarpment in Rilda Canyon. Any spotted bats present would primarily use the adjacent riparian area for foraging purposes.

#### TOWNSEND'S BIG-EARED BAT (*Plecotus townsendii*)

There is a potential impact to the Townsend Big-eared bat. The bats roosting habitat is located on mountain side slopes in cracks and crevices in rock outcrops and escarpments, caves and buildings. The area has a high potential of an escarpment failure that would remove some roosting habitat, and potentially result in the loss of individual bats. A past inventory (1997) conducted by Genwal Resources Incorporated failed to detect any Townsend Big-eared bats. Surveys were done in Mill Fork Canyon, Crandall Canyon, Biddlecome Hollow, Tie Fork, Huntington Canyon, and Bear Creek Canyon (these areas are adjacent to Rilda Canyon). Roosting habitat associated with this project will be impacted if the escarpments fail due to the mining activity or natural rockslides. Evidence of bats, the species is unknown, was observed in the form of bat guano at isolated locations along the rock escarpment in Rilda Canyon. Any bats present would primarily use the adjacent riparian area for foraging purposes.