

**FINAL
ENVIRONMENTAL ASSESSMENT
CRANDALL CANYON MINE
MODIFICATION OF FEDERAL COAL LEASE
UTU-68082**

*Incoming
C/015/0032*

**CHAPTER 1
PURPOSE AND NEED**

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DIV. OF OIL, GAS & MINING

1.1 PROPOSED ACTION

The proposed action is for the Bureau of Land Management (BLM) to modify Federal Coal Lease UTU-68082 by adding 120 acres. The Forest Service proposes to consent to the modification, subject to all lease terms, conditions, and stipulations contained in the original lease, and any additional stipulations needed to address surface effects in the modification area consistent with Forest Plan direction. This action would enable Genwal Resources Inc. (Genwal) to economically recover the available coal reserves within the proposed lease modification area and is in keeping with the BLM and Forest Service missions of providing the opportunity to recover leasable minerals on National Forest System Lands consistent with requirements for managing other resources.

1.2 PROJECT DESCRIPTION

Genwal submitted an application for modification of Federal Coal Lease UTU-68082 to the BLM on February 27, 2004. The lease modification lies entirely within the boundaries of the Manti-La Sal National Forest. The proposed modification area, located immediately adjacent to the east side of UTU-68082, was originally excluded from the delineated tract due to low coal seam thickness. The proposed lease modification involves adding 120 acres of National Forest System lands administered by the Manti-La Sal National Forest in Emery County, Utah described as follows (Figure 1, Page 2):

T. 15 S., R. 7 E., SLM, UT
Section 32, W1/2 NW1/4; NW1/4 SW1/4

The coal reserves in the proposed 120 acre lease modification would be approached from the south or west through existing underground mine workings in the Crandall Canyon Mine. No roads or portal facilities would be constructed for this project. The proposed lease modification area is an isolated area adjacent to the current lease. The proposed action would not lead to other future mining actions.

File in:

Confidential

Shelf

Expandable

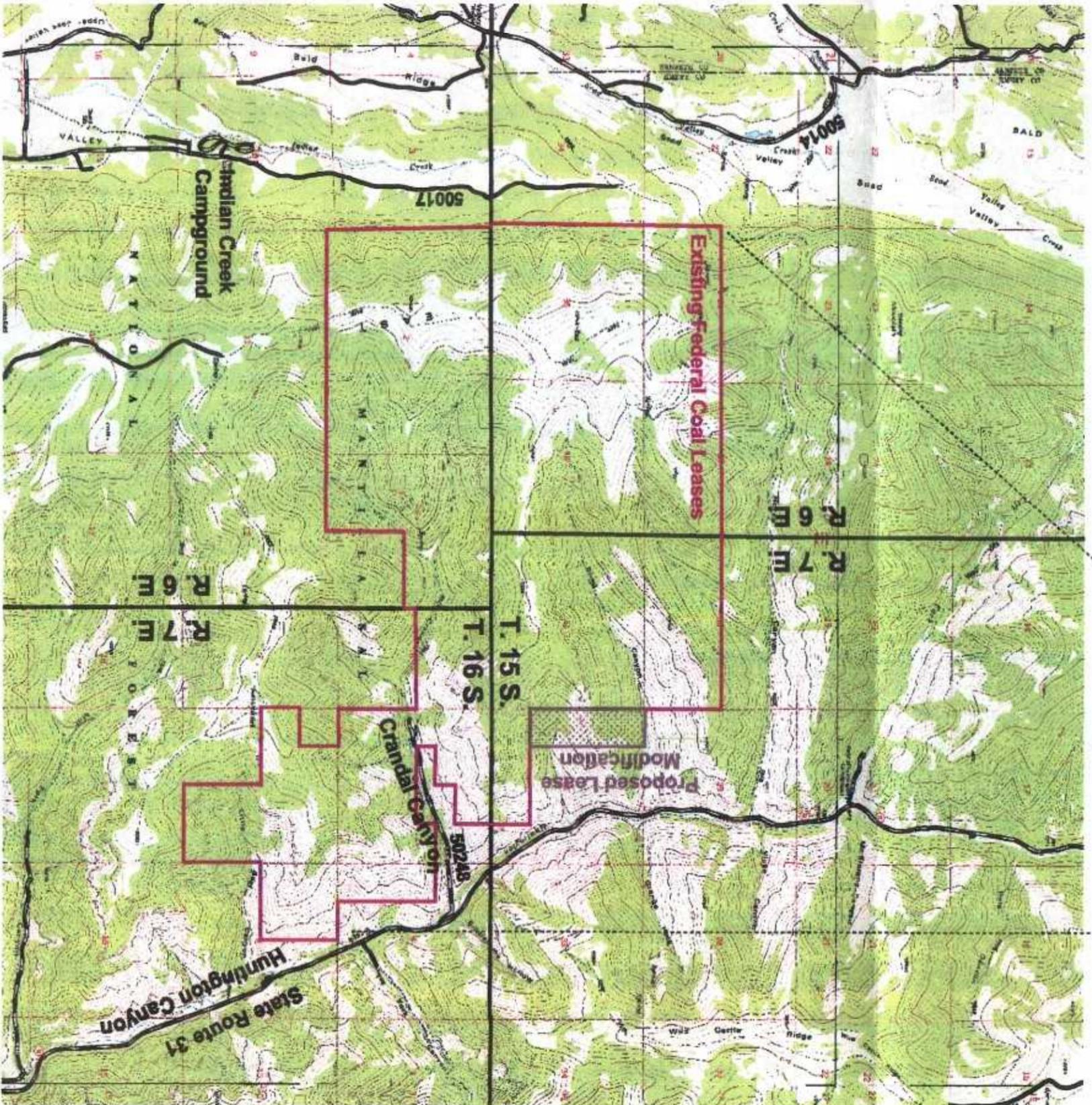
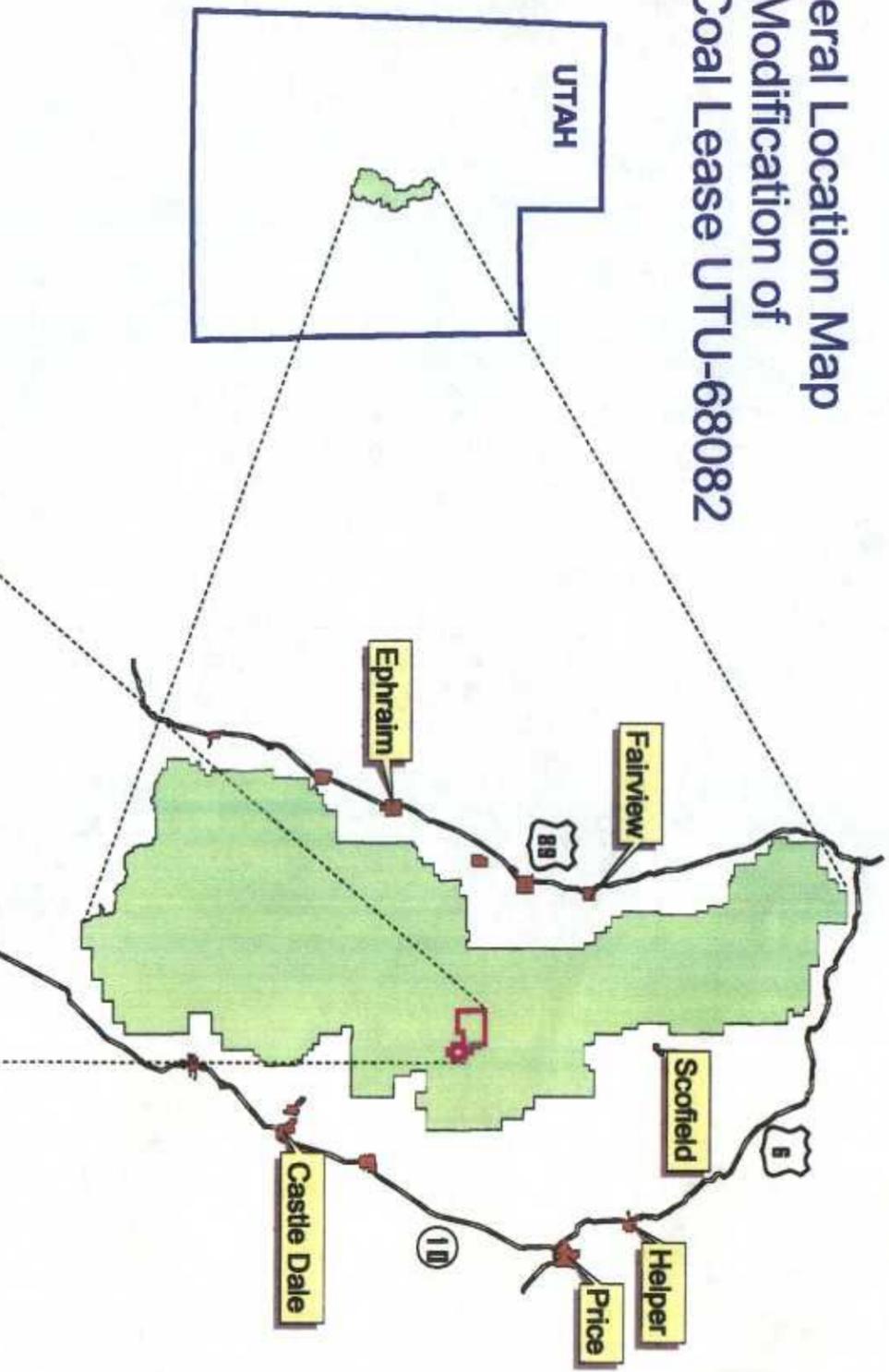
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In *C/0150032, 2004 Incoming*
For additional information

**FIGURE 1
GENERAL LOCATION MAP**

Figure 1

General Location Map Modification of Federal Coal Lease UTU-68082



1.3 PURPOSE AND NEED

The Bureau of Land Management (BLM) has made a determination as per 43 CFR 3432.2 (a) that: (1) the modification serves the interests of the United States; (2) there is no competitive interest in the lands or deposits; and (3) the additional lands or deposits cannot be developed as part of another potential or existing independent operation. Therefore there is a need to modify the existing coal lease versus processing a lease by application under 43 CFR 3425.

The purpose of the lease modification is to recover the potentially available coal reserves in the proposed lease modification area, with mitigations needed to protect non-coal resources. If the coal reserves are not mined concurrently with UTU-68082, the coal would probably be bypassed and never mined. The proposed and reasonably foreseeable underground mining would consist of entries with support pillars and long wall extraction methods.

1.4 SCOPE OF THIS ENVIRONMENTAL ANALYSIS

1.4.1 Scoping Process

Project scoping was conducted from May 4 to July 8, 2004. Comments were requested from Interdisciplinary Team (IDT) members, other Federal agencies, State, county and local agencies within Utah, Indian tribes, environmental groups, and interested individuals. Requests for comments were published in the *Sun Advocate* and *Emery County Progress* newspapers on May 4 and June 8, 2004. The project has been listed in the Forest Service Quarterly Schedule of Proposed Actions. Letters requesting comments were sent to 77 interested parties. Four outside responses were received. From these outside responses and the internal scoping, the IDT identified potential issues that are identified in Section 1.4.3.

The following is a summary of the outside responses that were received:

- 1) Utah Environmental Congress (UEC) requested that a cumulative effects analysis be completed for Management Indicator Species (MIS), wolverines, and Threatened, Endangered, and Protected Species (TEPS) on the Forest, and for the watersheds originating on the Wasatch Plateau. They also requested that the analysis address potential disruption to suitable habitat for migratory birds.
- 2) The Hopi Tribe requested a copy of the Cultural Resource Survey Report of the project to assist them in determining whether the area of potential effect contained any cultural resources significant to the Hopi Tribe.
- 3) The U.S. Fish and Wildlife Service was primarily concerned with the loss of perennial surface water and the disruption of springs and seeps due to mining subsidence, and the effects that the loss of water would have on wildlife habitat.
- 4) The Navajo Nation stated that they did not have any immediate concerns with the project and that the project area would not impact any Navajo Traditional Cultural Properties.

1.4.2 Relevant Planning Documents and Analyses

1) The Land and Resource Management Plan (LRMP) for the Manti-La Sal National Forest on page III-4 states that the Forest Management Goals for Minerals and Geology are to:

- a. Provide for the interpretation of surface and subsurface geologic conditions and processes such as landsliding.
- b. Manage geologic resources, common variety minerals, ground water, and underground spaces (surficial deposits, bedrocks, structures, and processes) to meet resource needs and minimize adverse effects.
- c. Provide appropriate opportunities for and manage activities related to locating, leasing, exploration, development, and production of mineral and energy resources
- d. Ensure that adequate reclamation of disturbed areas is accomplished.

2) Chapter III of the LRMP prescribes Management Requirements for the lease modification area:

- a. Management Activity: Leasable Minerals (LRMP, Page III-35).
General Direction 01- Negative recommendations, denials, or consent for leasing, permitting, or licensing will be based on site-specific environmental assessments using appropriate standards and guidelines. Stipulations for these actions should minimize and/or mitigate effects or conflicts with other resource uses and should return disturbed lands to conditions compatible with emphasis on the management unit or adjacent management unit.
- b. Management Activity: Range (LRMP, Page III-66).
General Direction 01- Provide appropriate mitigation measures to assure continued livestock access and use.

General Direction 02- Those authorized to conduct developments will be required to replace losses through appropriate mitigations, where a site-specific development adversely affects long term production or management.

3) Crandall Canyon Mine EA, September 1997

4) Mill Fork Tract EA, June 1997

1.4.3 Issues Evaluated in Detail

1.4.3.1 Surface Water

In areas of low overburden, subsidence fractures could be continuous to the surface. Surface water in either perennial drainages or seasonal and ephemeral runoff could be disrupted and/or intercepted by the underground mine workings. This could affect ecosystems, stream morphology, and stream flows.

Evaluation Criteria:

- Evaluate effects to drainages by classification (perennial, intermittent, or ephemeral), in feet.
- Acres and duration of impacted wetland and riparian areas.

1.4.3.2 Ground Water

In areas of shallow overburden, interception of ground water by the mine workings could disrupt the sources and flow paths supplying springs and seeps.

Evaluation Criteria:

- Number of springs and volumes affected.

1.4.3.3 Escarpment Failure

The Castlegate Sandstone is located along the western edge of the proposed lease modification. Subsidence could result in the failure of the Castlegate escarpment; causing effects to visual resources and raptor nesting habitat, and resulting in increased erosion and sediment production.

Evaluation Criteria:

- Visuals (consistency with Visual Quality Objectives).
- Raptor Nests (number of nests and acres of lost habitat).
- Erosion and Sedimentation (effects to water quality).

1.4.3.4 Wildlife

Subsidence and possible loss of surface and ground water could affect Management Indicator Species (MIS), Macroinvertebrates, Migratory Bird Species, Threatened, Endangered and Sensitive Plant and Animal Species and their habitat.

Evaluation Criteria:

- Effects to suitable habitat.
- Presence of species.

1.4.4 Issues Considered but Not Further Evaluated

1.4.4.1 Range

No conflicts are anticipated with the lease proposal as far as impacts to available livestock forage. No surface facilities or roads would be constructed for this project; therefore, noxious weed introduction is not an issue.

1.4.4.2 Cultural and Paleontological Resources

a. Paleontological Resources.

The Forest Service conducted paleontological inventories in the East Mountain area from 1998 to 2001. No potential sites were located in the proposed lease modification area.

b. Archaeological Resources.

The area was surveyed for potential historic or archaeological resources in June 2004. None were found and the potential effects have been determined to be negligible. No known objects on or adjacent to the lease tract are listed in or are eligible for the National Register of Historic Places. No significant heritage resources will be affected by the action. A letter received from the Utah State Historic Preservation Office states that no historic properties would be affected in the area.

Initial scoping documents were sent to the tribal governments of the Hopi, Paiute, Ute Mountain Ute, White Mesa Ute, Ute Tribe (Fort Duchesne), and Navajo beginning in May of 2004. Two tribes, The Navajo and the Hopi, responded to the scoping documents, indicating a general concern for avoiding potential impacts to cultural resource sites. All of the tribes listed above were sent copies of the cultural resources inventory report associated with the project. This communication also included a request for information regarding any potential sacred sites, TCP's (Traditional Cultural Properties), and plants or other natural resources the tribes might have concerns with. No Traditional Cultural Properties or sacred sites were identified in the analysis area through these consultation efforts. A list of culturally significant plants provided by the Paiute was submitted to the Forest botanical expert for review. There are no sensitive or threatened species on that list and those species on the list that occur in the project area will not be negatively affected by the proposed action.

Should any unanticipated paleontological or cultural resources be encountered during the implementation of this project, all work would stop until assessment of the finding could be made.

1.4.4.3 Roadless Area

The proposed coal lease modification lies within the East Mountain Roadless Area. The undeveloped character of the roadless area would not be affected. No roads or portal facilities would be constructed for this project. The proposed lease modification is an isolated area adjacent to the current lease; it contains a small amount of mineable coal accessible only through the existing mine in the current lease. The proposed action would not lead to other future mining actions. The coal lease modification would be mined entirely by underground mining methods and adjacent existing underground mine workings would access the tract. The amount of subsidence would be minimal, approximately 3 feet.

1.5 DECISIONS THAT MUST BE MADE

The Utah State Director of BLM must decide whether or not to modify the lease and under what terms, conditions, and stipulations. The Bureau of Land Management (a joint lead agency) is responsible for issuance and administration of coal leases under the Mineral Leasing Act of 1920, as amended and Federal Regulations 43 CFR 3400.

The Forest Supervisor of the Manti-La Sal National Forest must decide whether or not to consent to the lease modification by BLM, and prescribe lease stipulations needed to protect non-mineral resources. The Federal Coal Leasing Amendments Act of 1975 that amended the Mineral Leasing Act of 1920 provides Forest Service consent authority.

The Forest Supervisor would also consent to any approval of the associated permit revision by Utah Division of Oil, Gas, and Mining, which would involve including this lease modification in the permit area.

The Office of Surface Mining Reclamation and Enforcement is a cooperating agency in this action.

1.6 APPLICABLE LEGAL AND REGULATORY REQUIREMENTS AND COORDINATION

The decisions must conform to the overall guidance of the Manti-La Sal National Forest Plan (1986), as amended, and its Final Environmental Impact Statement (FEIS), 1986. This environmental analysis tiers to the Forest Plan FEIS.

This coal lease modification will be processed under the authority of the Mineral Leasing Act of 1920. Approving the lease modification would give the lessee an exclusive right to mine the coal, but does not authorize mining or surface disturbing activities.

Before any lease development can occur, the operator must obtain approval of a comprehensive Mining and Reclamation Plan and a mine permit in accordance with the state and Federal Regulations. Surface management agency (in this case the Forest Service) consent and incorporation of provisions for protection of non-mineral resources are required prior to issuing a permit. Approval of a Resource Recovery and Protection Plan under 43 CFR 3482 and consent from the BLM are also required.

The Surface Mining Reclamation and Control Act of 1977 (SMCRA) gives the Department of the Interior, Office of Surface Mining (OSM) primary responsibility to administer programs that regulate surface coal mining operations and the surface effects of underground coal mining operations. In January 1981, pursuant to Section 503 of SMCRA, the Utah Division of Oil, Gas and Mining (DOG M) developed, and the Secretary of the Interior approved, a permanent program authorizing Utah DOGM to regulate surface coal mining operations and surface effects of underground mining on non-Federal lands within the state of Utah. In March 1987, under Section 523(c) of SMCRA, Utah DOGM entered into a cooperative agreement with the Secretary of the Interior authorizing Utah DOGM to regulate surface coal mining operations and surface effects of underground mining on Federal lands within the State.

Under the cooperative agreement, Federal coal lease holders in Utah must submit permit application packages (PAP's) to OSM and Utah DOGM for proposed mining and reclamation operations on Federal lands in the State. Utah DOGM reviews the PAP to ensure that the permit application complies with the permitting requirements and that the coal mining operation will meet the performance standards of the approved permanent program. If it does comply, Utah DOGM issues the applicant a permit to conduct coal mining operations. OSM, the BLM, the Forest Service, and other Federal agencies, review the PAP to ensure that it complies with the terms of the coal lease, the Mineral Leasing Act of 1920 (MLA), NEPA, and other Federal laws and their attendant regulations. OSM recommends approval, approval with conditions, or disapproval of the PAP MLA mining plan to the Assistant Secretary, Land and Minerals Management.

Utah DOGM enforces the performance standards and permit requirements during the mine's operation and has primary authority in environmental emergencies. OSM retains oversight responsibility for this enforcement. BLM and the Forest Service have authority in those emergency situations where Utah DOGM or OSM inspectors can not act before environmental harm or damage occurs.

CHAPTER 2 DESCRIPTION OF ALTERNATIVES

2.1 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 two action alternatives are considered in detail.

Table 2-1, List of Alternatives

Alternative 1 – No Action
Alternative 2 – Consent/Approval of Project as Proposed
Alternative 3 – Consent/Approval of Project with Supplemental FS Mitigations

2.2 HISTORY AND PROCESS USED TO FORMULATE THE ALTERNATIVES

Alternative development is driven by public comments and input from Forest Service personnel. Comments were sought by various means including newspapers, the Forest Service's *Schedule of Proposed Actions*, and by letters to State and County governments and other interested parties.

Letters requesting comments were sent to 77 interested parties. Four letters were received in response to the Forest's public involvement efforts. The contents of each letter were reviewed and issues identified that could help refine the analysis, project design, and development of alternative actions.

2.3 ALTERNATIVE DESIGN, EVALUATION, AND SELECTION CRITERIA

Action alternatives must be consistent with the rights granted to the lessee under Federal Coal Lease UTU-68082, as conditioned by the lease terms and stipulations contained therein. In addition, any occupancy and development of the lease must be consistent with all applicable, non-discretionary laws and regulations.

All alternatives must include implementation of Soil and Water Conservation Practices as detailed in the project file. This calls for all reasonable measures to be taken by the operator to prevent sediment caused by operations from entering adjacent drainages.

2.4 DESCRIPTION OF PROPOSED ALTERNATIVES

Alternative 1 – No Action

Alternative 1 addresses the need to provide a "No Action" alternative (40 CFR 1502.14). The Forest Service would not consent to, and the BLM would not approve the coal lease modification. Subsequently, Alternative 1 would not allow for mining within the modification area, and therefore not provide coal reserves for the mine. No mitigation measures or monitoring would be required as part of this alternative other than meeting Forest Plan direction, standards, and guidelines.

Alternative 2 – Consent/Approval of the Lease Modification as Proposed

This alternative represents Genwal's proposal to modify Federal Coal Lease UTU-68082 to provide coal reserves for the Crandall Canyon Mine so that current production levels are maintained, and to recover Federally owned coal deposits that may otherwise be bypassed. The Utah State Director of BLM must decide whether or not to modify the lease to include the additional 120 acres. The Bureau of Land Management is responsible for issuance and administration of coal leases under the Mineral Leasing Act of 1920, as amended and Federal Regulations 43 CFR 3400. The Forest Supervisor of the Manti-La Sal National Forest must decide whether or not to consent to the lease modification by BLM, with terms and conditions as contained in Federal Coal Lease UTU-68082. The Federal Coal Leasing Amendments Act of 1975 that amended the Mineral Leasing Act of 1920 provides Forest Service consent authority. The Forest Supervisor would also consent to any approval of the associated permit revision by Utah Division of Oil, Gas, and Mining, which would involve including this lease modification in the permit area.

The 120 acre area would be added to Federal Coal Lease UTU-68082 for mining through their Crandall Canyon Mine. Because it is not a competitive bid process, another company would not be able to bid on the lease. The lease would be subject to those lease terms and conditions (stipulations) contained in Federal Coal Lease UTU-68082 (Appendix B).

Alternative 3 – Consent/Approval of the Proposed Lease Modification with BLM Stipulations and Supplemental Forest Service Stipulations

This alternative is similar to Alternative 2 with application of an additional mitigation measure (Appendix C) designed to lessen anticipated environmental effects.

2.5 PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE ACTIONS

CEQ regulations (40 CFR 1508.7) define cumulative impact as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency

(Federal or non-Federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”

Past, present, and reasonably foreseeable future actions in the project area have been developed in support of this EA. The cumulative effects for each resource category are addressed under each alternative in Chapter 4. Estimates of residual, current, or anticipated effects are discussed. The sum of the effects, in addition to the anticipated direct and indirect effects of the proposed action, will form the basis for the cumulative effects analysis.

If the lease modification is approved, no other future actions are planned for the 120-acre tract beyond removal of the coal reserves.

2.6 COMPARISON SUMMARY OF ALTERNATIVES

Table 2-2, Comparison of Alternatives, displays the components of each alternative and the physical changes to the environment likely to occur from the project for each alternative. These changes are not in themselves identified as issues, but would cause changes to resources and the socioeconomic setting and, therefore, form the basis for the identified issues.

Table 2-2 Comparison of Alternatives

Issue: Surface Water	Alternative 1	Alternative 2	Alternative 3
a. Impacts to drainages, by classification (in feet):			
1. Perennial	0	0	0
2. Intermittent	0	2200	1050
3. Ephemeral	0	2200	1050
b. Impacted wetland and riparian areas			
1. Acres	0	5.8	3.6
2. Duration (years)	0	permanent	0

Issue: Ground Water	Alternative 1	Alternative 2	Alternative 3
a. Impacts to springs/seeps			
1. Number of springs/seeps	0	8	5
2. Volumes (gpm)	0	0-10	0-5

Issue: Escarpment Failure	Alternative 1	Alternative 2	Alternative 3
a. Visuals			
1. Meets Forest VQO	Yes	Yes	Yes
b. Impacts to raptor nests			
1. Number of nests	0	0	0
2. Acres of lost habitat	0	0	0

c. Erosion & Sedimentation			
1. Effects to water quality	No	Yes	No

Issue: Wildlife	Alternative 1	Alternative 2	Alternative 3
a. Impacts to wildlife			
1. Effects to habitat	No	Yes	No
2. Presence of species	Yes	Yes	Yes

CHAPTER 3 AFFECTED ENVIRONMENT

3.1 INTRODUCTION

This chapter describes the affected environment, with emphasis on the identified issues.

This analysis tiers to the Manti-La Sal National Forest Land and Resource Management Plan (Forest Plan) and incorporates by reference the analysis disclosed in its Final Environmental Impact Statement 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.

The proposed coal lease modification area is located between Crandall Canyon and Blind Canyon and overlooks Huntington Canyon. The Forest Plan identifies the Management Prescription (key map and pages III-64 to III-66) for the proposed site as Range Management (RNG), where the emphasis is on production of forage and cover for domestic livestock and wildlife. The proposed coal lease modification satisfies the requirements for management unit direction through the incorporation of the standard stipulations, best management practices, and additional measures as discussed in the alternatives.

3.2 DESCRIPTION OF AFFECTED RESOURCES

3.2.1 Surface Water

The 120 acre lease modification area is located entirely within the Huntington Creek watershed (a tributary to the San Rafael River). Two tributaries to Huntington Creek drain the modification area; the northern part is drained by Blind Canyon and the central and southern portions are drained by Shingle Canyon Creek (Figure 2, page 16). Huntington Creek flows through the town of Huntington, Utah, and into Castle Valley, where the water is primarily used for agriculture and electrical power generation. A minor component of the water is used as the municipal water source for the town of Huntington.

The study area for surface water hydrology includes both streams (Blind Canyon and Shingle Canyon creeks) in the proposed 120 acre lease modification area plus an additional area that may be impacted by subsidence. The discussion regarding springs and seeps is found in Ground Water, Section 3.2.2.

A perennial stream has flowing water year-round during a typical year. The water table is located above the streambed for most of the year. Ground water is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for

streamflow (USACE, definitions for 2002 Nationwide Permits). The importance of springs in maintaining perennial streamflow is variable and ranges from a major to a supplemental source. A perennial stream is made up primarily of gaining or effluent segments. However, in arid environments, a stream may have losing or influent segments and still be considered perennial if the influent segment has perennial segments up and downstream of it. Note that the alluvial ground water that supports perennial stream segments originates in a variable source area upstream/up-gradient of the perennial segment. Intermittent streams typically occur in these portions of the source area. Intermittent streams flow during snowmelt runoff and are usually dry by late summer and early fall. Ephemeral streams only flow as a direct response to storm events.

The Mining and Reclamation Plan for the Crandall Canyon Mine (Vol. 6, Appdx. 7-48) discussed perennial flow in Blind Canyon. The perennial stream section extends from the confluence with Huntington Creek, upstream to as high as 9640 feet in elevation. Perennial flow is found along the entire length of (and beyond) the northern boundary of the proposed lease modification area. Recent investigations (Petersen, 2004, and Collins, 2004) also indicate that Blind Canyon is a perennial stream. Stream flow measurements and macroinvertebrate samples taken in Shingle Canyon Creek during these recent investigations indicate that it is not perennial. However, certain plant species found in the drainage leave open the possibility that the stream could be given a perennial designation. It is possible that Shingle Canyon could be intermittent in the upper reaches and perennial in the lower main stem. Additional surveys later in the growing season would be necessary in order to make a conclusive determination regarding the perennial status of this drainage. Base flow of the streams is probably supplied from springs and seeps, with additional flow contributed by snowmelt and rain.

The Forest Service has a water right on Blind Canyon Creek (93-182) from the intersection of the creek with the western boundary of Sec. 32 to its intersection with Huntington Creek for stock watering. The Forest Service also has a water right on Shingle Canyon Creek (93-1180) from the NE1/4SE1/4 Sec. 31, through Sec. 32, to its intersection with Huntington Creek for stock watering. No other water rights were found within the proposed lease modification area.

Information for the surface and ground water evaluations was derived from:

- Mining and Reclamation Plan, Genwal Mining Company
- Information and maps generated by the Forest Service, USGS, and Genwal
- Water rights data from the Utah Department of Natural Resources, Division of Water Rights
- Perennial Stream Considerations At "No-Name Creek" & Blind Canyon Creek, Tributaries To Huntington Canyon Creek, Mt. Nebo Scientific, Inc., June 2004
- A hydrologic investigation of the permit area conducted by Petersen Hydrologic

The State of Utah has assigned beneficial use designations and water quality standards to these waters. The beneficial uses include:

- 1C – protected for use as a raw water source for domestic water systems with prior treatment by treatment processes as required by the Utah Division of Drinking Water.
- 2B – protected for secondary-contact recreation, such as boating, wading, or similar uses.
- 3A – protected for cold-water species of game fish and other cold-water aquatic life, including the necessary aquatic organisms in their food chain.
- 4 – protected for agricultural uses, including irrigation of crops and stock watering.

3.2.2 Ground Water

Eight springs and seeps (Figure 2, page 16) have been identified within the 120-acre lease modification area, with recorded discharge rates from 0 to 10 gpm. Flows were highest during the spring due to snowmelt and seasonal recharge. Seven of the springs have been completely dry at times. Five springs/seeps are located in areas of the proposed lease modification with less than 300 feet of overburden and 3 other springs/seeps are located in areas with 300 feet or more of overburden. Small riparian areas could be associated with these springs.

None of the springs and seeps have been developed. Some of them are used for livestock watering during the summer months. These springs are located in the Blackhawk Formation. Springs within the Blackhawk Formation generally occur under perched conditions. The Blackhawk is composed of layers of sandstone and shale. Water from snowmelt and precipitation events moves downward through porous layers of the formation until it comes in contact with an aquitard. The water then moves laterally along the top of the non-porous lens until it exits at an outcrop. Many such small seeps/springs occur within the Blackhawk Formation and overlying Price River Formation. Surface subsidence effects, which could affect flow patterns to springs and seeps, are associated with projects of this type on the Wasatch Plateau.

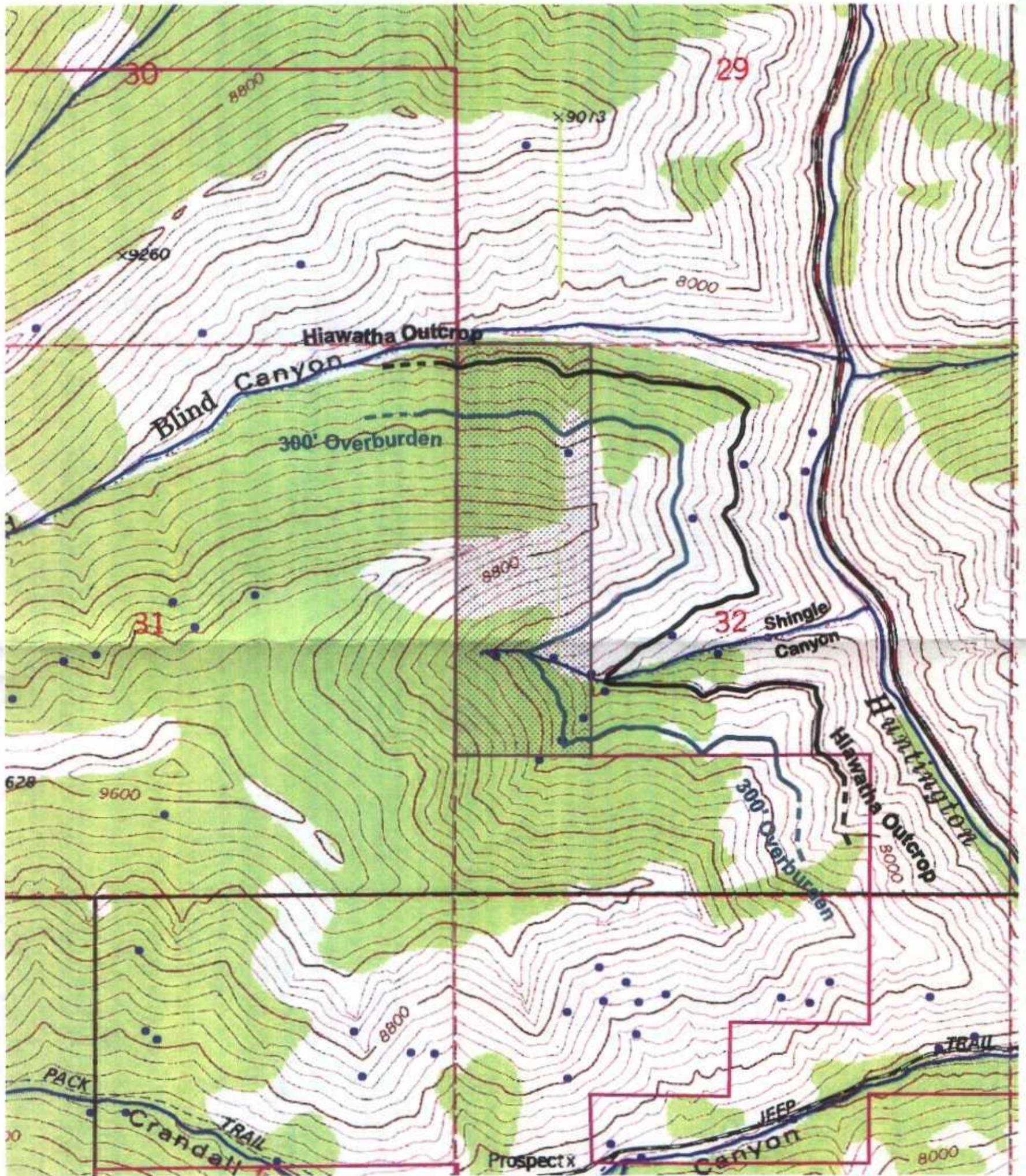
No faults are known to transect the proposed lease modification. As long as an appropriate overburden thickness was observed and the mine did not intercept surface water, water encountered within the mine would be from paleo-sandstone channels within the Blackhawk Formation and possible upwelling from the Star Point Sandstone. This water has been age dated to approximately 12,000 – 18,000 years old. It would not reach the surface in any appreciable amounts under natural conditions.

Available hydrologic monitoring data indicate that the springs and seeps in the southern portion of the project area are supported by snowmelt during the spring and early summer rather than by a reservoir system that would provide sustainable flows throughout the year.

FIGURE 2
SURFACE AND GROUND WATER RESOURCES

Figure 2

Modification of Federal Coal Lease UTU-68082
Surface & Groundwater Resources



-  Proposed Lease Modification
-  Existing Federal Coal Leases
-  Stream
-  Spring / Seep

- Roads**
-  Suitable for High Clearance Vehicles Only
-  Suitable for Passenger Cars

1:12000

1 0 1 2 3 4 5 Miles



3.2.3 Escarpment Failure

The coal lease modification area is located on the western edge of Section 32, T15S, R7E, in Huntington Canyon. The proposal is to access the coal reserves from adjacent underground mine workings. No surface occupancy is considered for the area and surface disturbance from roads or other developments would not occur.

A small outcrop of the Castlegate Sandstone, approximately 1400 feet in length (Figure 3, page 18), is located along the western edge of the proposed lease modification. Overburden thickness is approximately 800-1000 feet in this area. The escarpment is approximately 3000 feet from the only road in the area (State Highway 31). Subsidence could result in tension cracking and possible separation of blocks from the Castlegate escarpment.

a. Visuals

Characteristic Landscape

East Mountain is a long, high elevation ridge, extending North and South. Elevations range from approximately 7,000' in Huntington Canyon to over 10,700' along the ridge top. The ridge top is mostly covered with large patches of Aspen, Spruce and Fir, except for small meadows near the head of steep draws. Sagebrush extends along lower slopes and interface with the patches of conifers and aspen. Vertical ledges are common in the steep Huntington Canyon.

Visual Quality Objective

The Visual Quality Objective (VQO), (Manti-La Sal NF Forest Plan, *Visual Quality Objective Map, 1986*,) is Modification of landscape character in approximately the western half of the lease modification area. Under the Modification VQO, management activities may visually dominate the original landscape character, however the alterations should appear as natural occurrences within the surrounding area. In approximately the eastern half of the lease modification area the VQO is Partial Retention. Under the Partial Retention VQO, alterations may be evident, but must remain subordinate to the characteristic landscape.

b. Raptor Nests

There are no known raptor nests within one mile of the proposed lease modification area boundaries.

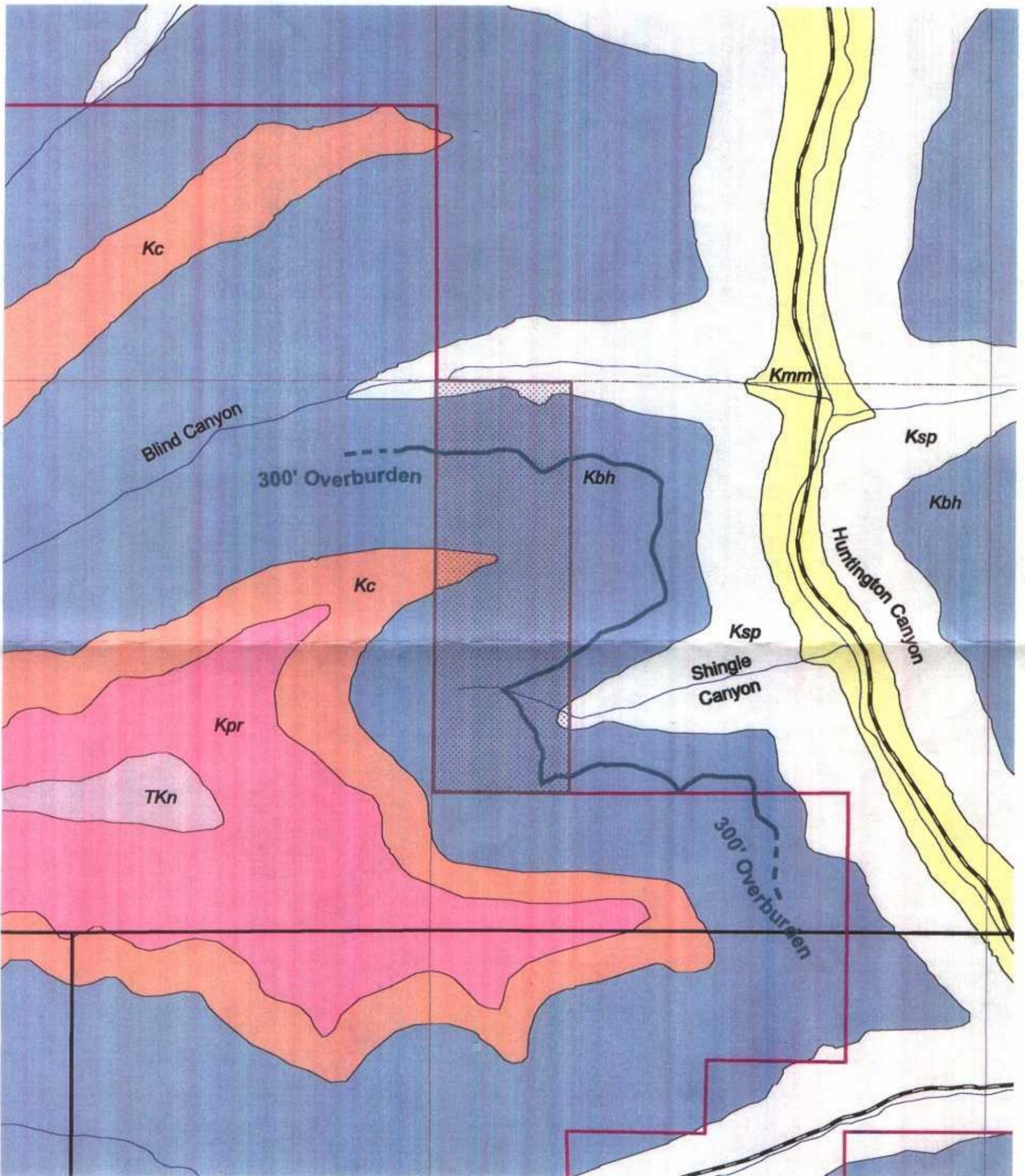
c. Erosion and Sedimentation

An increase of erosion and sedimentation are sometimes associated with escarpment failure.

**FIGURE 3
GEOLOGY**

Figure 3

Modification of Federal Coal Lease UTU-68082
Geology



Roads
 Suitable for High Clearance Vehicles Only
 Suitable for Passenger Cars
 Proposed Lease Modification
 Existing Federal Coal Leases

Geology

Cretaceous	Tertiary
Kpr - Price River Formation	TKn - North Horn Formation
Kc - Castelgate Sandstone	
Kbh - Blackhawk Formation	
Ksp - Start Point Formation	
Kmm - Mancos Shale, Masuk Member	

1:12000

0.5 0 0.5 1 Miles



3.2.4 Wildlife

3.2.4.1 Threatened and Endangered Species

Endangered species are species that have been identified, and listed in the Federal Register, by the U.S. Fish and Wildlife Service (Service) as being in danger of extinction throughout all or a significant portion of its range. Threatened species are species that have been identified, and listed in the Federal Register, by the Service as likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range (Figure 4, page 26).

Table 3-1 lists wildlife species designated as Threatened or Endangered (T&E) by the Service that could occur in Emery County, Utah. T&E species that could occur in Emery County but do not have suitable habitat and are not likely to occur in or near the proposed project area are also identified in Table 3-1, and will not be considered further in this Wildlife Resources Report. There are no proposed wildlife species identified for Emery County.

**Table 3-1
Threatened and Endangered Species**

A list of threatened (T) and endangered (E) species that may occur within the area of influence of the proposed Genwal lease modification project in Emery County, Utah.

SPECIES	SPECIES STATUS	SPECIES OCCURRENCE IN THE PROJECT AREA AND CONSIDERATION IN THIS WILDLIFE RESOURCES REPORT
Bald Eagle <i>Haliaeetus leucocephalus</i>	Threatened	Not Considered. There are no habitat features in or near the proposed project area that would attract bald eagles to the vicinity of the proposed project; however they may occur incidentally in or near the proposed project area. Proposed activities within the lease modification area would not impact bald eagle habitat or incidentally occurring eagles in the project area.
Mexican Spotted Owl <i>Strix occidentalis lucida</i>	Threatened	Not Considered. In Utah, the Mexican spotted owl nests in steep-walled, complex rock canyons at relatively low elevations (USDI 2001a). Canyons are generally at least 2 kilometers long and less than 2 kilometers wide. There is no suitable Mexican spotted owl habitat in or near the proposed project area.
Western Yellow-billed Cuckoo <i>Coccyus americanus occidentalis</i>	Candidate	Not Considered. The western yellow-billed cuckoo breeds in Utah, but migrates to South America during winter. Cuckoos are riparian obligates. Nesting habitat is classified as dense lowland cottonwood/willow riparian forest characterized by a dense sub-canopy or shrub layer. In Utah, nesting habitats are found at elevations between 2,500 to 6,000 feet. They appear to require large tracts (100 to 200 acres) of contiguous riparian nesting habitat (Parrish et al. 2002). There are not large contiguous tracts of riparian habitat in the vicinity of the proposed project, and the project area is located above 8,500 feet elevation. Therefore, the proposed project is not likely to affect the Yellow-billed cuckoo.
Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i>	Endangered	Not Considered. The southwestern willow flycatcher is a riparian obligate, nesting in areas with high shrub densities interspersed with openings or meadows; they nest in cottonwood/willow habitats and structurally similar riparian vegetation such as alder and aspen. The proposed project is located in fairly dry pinyon/juniper, sagebrush, mohogany habitats with aspen and ponderosa pine near by; there is no suitable habitat for this species in or near the project area.
Black-footed Ferret <i>Mustela nigripes</i>	Endangered	Not Considered. The black-footed ferret depends on prairie dog colonies for food and shelter. There are no prairie dog colonies (potential ferret habitat) in or near the proposed project area. The historic range of the ferret likely included parts of Emery County, but the soils in and near the proposed project would not likely support prairie dogs or ferrets.
Utah Prairie-dog <i>Cynomys parvidens</i>	Threatened	Not Considered. Basic habitat requirements considered for the Utah prairie dog are deep, well-drained soil, vegetation low enough so that prairie dogs can see over or through, and suitable forage (Spahr et al. 1991). There is not suitable habitat in or near the proposed project area.

Bonytail <i>Gila elegans</i>	Endangered	Not Considered. Historically, the bonytail existed in warm water reaches of larger rivers in the Colorado River Basin; it is considered to be adapted to pools and eddies of mainstream rivers. It has been extirpated from most of its historic range. Currently, a small number of wild adults exist in Lake Mohave in the Lower Colorado River Basin, and there are small numbers of wild individuals in the Green River and in subbasins of the Upper Colorado River Basin (USDI 2002a). The bonytail has not been located on the Forest, and the proposed project would not adversely impact drainages where it is found.
Humpback Chub <i>Gila cypha</i>	Endangered	Not Considered. The humpback chub is restricted to deep, swift mainstem and large tributaries in relatively inaccessible canyons of the Colorado River Basin. Adults require eddies and sheltered shorelines in streams that maintain high spring flows that flush sediments from spawning areas and form gravel deposits used for spawning. Young require low-velocity shoreline habitats. Currently, there are six known extant populations, which are located in the Upper Colorado River, Yampa River and Little Colorado River (USDI 2002b). The humpback chub has not been located on the Forest, and the proposed project would not adversely impact drainages where it is found.
Razorback sucker <i>Xyrauchen texanus</i>	Endangered	Not Considered. Historically the razorback sucker was widely distributed in warm-water reaches of the Colorado River and its tributaries from Wyoming to Mexico. Adults require deep pools, eddies and backwaters in spring; shallow water associated with sandbars in summer; and low velocity pools and eddies in winter. Young require quiet, warm, shallow water found at tributary mouths, and in coves or shorelines in reservoirs. Currently, within the Upper Colorado River Basin this species is only found in small numbers in the middle Green River, between the confluence of the Duchesne and Yampa rivers, and in the lower reaches of those two tributaries (USDI 2002d). There are no suitable razorback sucker stream habitats on the Forest, and the proposed project would not adversely impact drainages where it is found.
Colorado pikeminnow <i>Ptychocheilus lucius</i>	Endangered	Not Considered. The Colorado pikeminnow is endemic to the Colorado River Basin, and it historically extended from the Green River in Wyoming, to the Gulf of California; it was widespread and abundant in warm-water rivers and tributaries. It is a long-distance migratory (hundreds of kilometers to and from spawning areas). Adults require deep pool and eddie habitats in streams that have high spring flows. Currently, in Utah this species occurs in the Green River from Lodore Canyon to the confluence of the Colorado River (USDI 2002c). The Colorado pikeminnow has not been found on the Forest, and the proposed project would not adversely impact drainages where it is found.

3.2.4.2 Sensitive Species

Sensitive species are species that are recognized by the Regional Forester as needing special management attention in order to prevent them from becoming threatened or endangered.

Table 3-2 lists the Intermountain Regional Forester's list of sensitive wildlife species that could occur on the Manti Division of the Manti-La Sal National Forest (MLNF). Sensitive wildlife species that do not occur or have suitable habitat in or near the proposed project area are identified in Table 3-2 and will not be considered further in this Wildlife Resources Report.

Table 3-2
Sensitive Species

Sensitive wildlife species that could occur on the Manti Division of the MLNF, and their potential occurrence in the proposed lease modification area.

SPECIES	SPECIES OCCURRENCE IN THE PROJECT AREA AND CONSIDERATION IN THIS WILDLIFE RESOURCES REPORT
Spotted Bat <i>Euderma maculatum</i>	Considered. In Utah, the spotted bat is likely found throughout the state. It is known to use a variety of vegetation types from approximately 2,700 to 9,200 feet (Oliver 2000), including riparian, desert shrub, spruce/fir, ponderosa pine, montane forests and meadows. Spotted bats roost alone in rock crevices high up on steep cliff faces. There are rock outcrops in the proposed lease modification area that could provide suitable roost habitat for the spotted bat.

<p>Townsend's Big-eared Bat <i>Plecotus townsendii pallescens</i></p>	<p>Not Considered. In Utah, Townsend's Big-eared Bats roost and hibernate in caves and mines; they also roost (but not hibernate) in buildings (Oliver 2000). There are no caves, mine openings or buildings in the lease modification area, therefore the proposed project is not likely to impact this species.</p>
<p>Greater Sage Grouse <i>Centrocercus urophasianus</i></p>	<p>Not Considered. Sage grouse are generally found where there are large tracts of sage brush habitat with a diverse and substantial understory of native grasses and forbs or in areas where there is a mosaic of sagebrush, grasslands, aspen. Wet meadows, springs, seeps, or other green areas within sagebrush shrublands are generally needed for the early brood-rearing period. The proposed lease modification area is located in steep mountainous terrain with limited sagebrush habitat, which does not provide suitable habitat for sage grouse.</p>
<p>Northern Goshawk <i>Accipiter gentilis</i></p>	<p>Not Considered. The proposed lease modification area is located in steep mountainous terrain that is partially covered with large tracts of young to medium aged aspen interspersed with spruce/fir and some Douglas fir, which does not provide suitable habitat for the northern goshawk.</p>
<p>Peregrine Falcon <i>Falco peregrinus</i></p>	<p>Not Considered. Peregrine falcon's average foraging distance from the eyrie extends out to 10 miles, with 80 percent of peregrine falcon foraging occurring within a mile of the nest, and they have been known to forage up to 18 miles from their nest site (Spahr et al. 1991). There is a peregrine falcon eyrie located approximately 12 miles from the proposed lease modification area. Proposed activities in the lease modification area would not impact foraging peregrine falcons, their nesting habitat or their foraging habitat.</p>
<p>Flammulated Owl <i>Otus flammeollus</i></p>	<p>Not Considered. Flammulated owls appear to be associated with mature pine or mixed conifer forests with a ponderosa pine and/or Douglas fir component. There are no mature mixed conifer forest stands in or near the proposed lease modification area that would provide suitable habitat for the flammulated owl.</p>
<p>Three-toed woodpecker <i>Picoides tridactylus</i></p>	<p>Not Considered. Three-toed woodpeckers use forests containing spruce, grand fir, ponderosa pine, tamarack, and lodgepole pine. Nests may be found in spruce, tamarack, pine, cedar, and aspen trees. There is no suitable three-toed woodpecker habitat in the proposed lease modification area.</p>
<p>Spotted Frog <i>Rana pretiosa</i></p>	<p>Not Considered. Spotted frogs are most commonly found in cold, still, permanent water in such habitats as marshy edges of ponds or lakes, in algae-grown overflow pools of streams, and near flat water springs with emergent vegetation. This frog has a broad distribution throughout the previously glaciated regions of British Columbia. They also occur in the Rocky Mountains of Alberta, and have patchy distribution in the United States, from Washington to Montana and south to Nevada and Utah. In Utah, the spotted frog occurs in isolated populations, and is considered to be a relict from the last ice age. The spotted frog has not been found on the Manti - La Sal National Forest or in the proposed project area.</p>
<p>Colorado Cutthroat Trout <i>Oncorhynchus clarki pleuriticus</i></p>	<p>Not Considered. Colorado cutthroat trout require cool, clear water in streams with well vegetated banks, which provides cover and bank stability. Deep pools and structures such as boulders and logs provide instream cover. This species is believed to have formerly been widespread in lakes, rivers, and streams in Utah, however now it is limited to isolated headwater streams and other rigorous environments where other species such as rainbow trout and Yellowstone cutthroat trout have not been introduced. Colorado cutthroat trout are not found in the proposed project area, and the project would not adversely impact drainages where it is found.</p>
<p>Bonneville Cutthroat Trout <i>Oncorhynchus clarki utah</i></p>	<p>Not Considered. Bonneville cutthroat trout require cool, clear, well-oxygenated water and the presence of clean, well-sorted gravels with minimal fine sediments for successful spawning. They are found at high, moderate and low elevations in small head water streams in the Bonneville basin (USD1 2001b). Bonneville cutthroat trout are not found in the proposed project area, and the project would not adversely impact drainages where it is found.</p>

The Genwal Resources, Inc. Lease Modification Project has the potential to impact one sensitive wildlife species: the Spotted bat.

Spotted Bat

The spotted bat ranges from Mexico through the western states to the southern border of British Columbia; it is probably widely distributed in low numbers throughout western North America (Toone 1994). And it probably occurs throughout Utah, but its distribution appears to be patchy. Hasenyager (1980) thought that "the range of the spotted bat in Utah could incorporate the southern third of the state and central portions of the west desert where suitable roosts exist, excluding the higher portions of the central mountain range." Habitat occupied by this bat in Utah ranges from low desert (2700 ft) to montane coniferous forests below 9,200 feet in elevation (Oliver 2000). They have been found in a variety of habitat types including open ponderosa pine, desert shrub, pinyon/juniper, and open pasture and hay fields. In Utah, the spotted bat has been captured in several habitats: lowland riparian habitat (open meadows), desert shrub

communities (sagebrush/rabbitbrush), ponderosa pine forest, montane grassland (grass/aspen), and montane forest and woodland (grass/spruce/aspen). This species has also been occasionally found in or on buildings in Utah towns and cities (Oliver 2000). They typically roost singly in crevices in steep cliff faces. Cracks and crevices in limestone or sandstone cliffs provide important roosting sites (Spahr et al. 1991), especially where rocky cliffs occur in proximity to riparian areas. Day roosts and maternal roosts are typically within small (up to 6 cm) cracks and crevices in cliff faces (Toone 1994). The relative inaccessibility of cliff roosts may insulate spotted bats from human disturbance, but the species has been observed roosting (and foraging) near campgrounds (Toone 1994). Spotted bats are thought to feed mainly on moths high above the vegetation canopy. They forage alone after dark using echolocation, which is effective for fast flight feeding on tympanate moths (moths that can detect ultra-sonic sounds). As is common with many bats, spotted bats may forage a considerable distance (up to 6 miles) from roost sites (Toone 1994).

Roosting habitat in the Wasatch Plateau region is likely to occur in numerous cliffs along the edges of the plateau and on canyon walls that cut through the plateau. It is likely that spotted bats forage in a variety of habitats on the Plateau that are located within 6 miles of suitable roost cliffs and at elevations lower than 9,200 ft. Various surveys on the MLNF have detected spotted bats in several major canyons (and their tributaries) on the east side of the plateau, including Muddy, Ferron, Straight, Cottonwood, and Huntington Canyons (Perkins and Peterson 1997, and Sherwin et al. 1997).

Observations made during the 1997 surveys on the MLNF indicated that spotted bats tolerate at least moderate human disturbance while foraging. Surveys were conducted at several sites near roads with light to moderate vehicular traffic (Crandall Canyon, Huntington Canyon, Straight Canyon), including tandem coal trucks. Spotted bats were observed foraging at low elevation sites, within 30 meters of the right-of-way. The fact that spotted bats were relatively common in active and previously mined areas may imply that subsidence caused cliff failures have not dramatically affected resident populations (Sherwin, et al. 1997).

3.2.4.3 Management Indicator Species

Management Indicator Species (MIS) are species identified at the Forest planning level that could indicate changes in Forest habitats resulting from management actions. The potential impacts to these species resulting from management actions are analyzed at the project level.

Table 3-3 lists wildlife species identified as Management Indicator Species (MIS) by the Manti-La Sal National Forest (MLNF) that could occur on the Manti Division of the MLNF. MIS species that do not occur and do not have suitable habitat in or near the proposed project area are identified in Table 3-3 and will not be considered further.

Table 3-3
Management Indicator Species

Table 3-3. Management Indicator Species that could occur on the Manti Division of the Manti-La Sal National Forest.

Species Common name (<i>Scientific name</i>)	Species/Habitat Associations	Consideration of this Species
Rocky Mountain Elk <i>Cervus canadensis</i>	Elk tend to occupy the higher elevation aspen and mixed conifer habitats from spring through early fall, and move to lower elevation mixed shrub, pinyon/juniper, and sagebrush habitats for winter.	Not Considered. Elk are known to use the proposed lease modification area; however proposed activities in the area are not likely to appreciably impact this species or features of its suitable habitat.
Mule Deer <i>Odocoileus hemionus</i>	Mule deer use most of the habitat types surrounding the proposed project area. Lower elevation pinyon/juniper and sagebrush habitats provide suitable winter range. Most mule deer winter range is located at the edge of National Forest system lands on BLM managed land. Deer populations in this area exhibit seasonal movement (elevational migration) in response to snow cover.	Not Considered. Mule deer are found in and around the proposed lease modification area; however proposed activities in the area are not likely to appreciably impact this species or features of its suitable habitat.
Northern Goshawk <i>Accipiter gentilis</i>	Goshawks have been found in a variety of forest ecosystems including lodgepole pine, aspen, ponderosa pine, Douglas fir, and mixed forests throughout much of the northern hemisphere. Goshawk nest sites are usually located in dense mature forests with relatively large trees, near water, and on benches of relatively little slope (Graham et al. 1999). Closed canopies are important for protection and thermal cover, and relatively open understories are important to allow maneuverability during foraging.	Not Considered. The proposed lease modification area is located in steep mountainous terrain that is partially covered with large tracts of young to medium aged aspen interspersed with spruce/fir and some Douglas fir, which does not provide suitable habitat for the northern goshawk.
Golden Eagle <i>Aquila chrysaetos</i>	Golden eagles generally inhabit mountainous or hilly terrain, but can also be found in valleys and western plains, especially during migration and winter. They generally nest on cliffs, but they also have been known to nest in trees. They hunt over open country for small mammals, snakes, birds and carrion.	Not Considered. There is potentially suitable golden eagle nesting habitat near the proposed lease modification area, and there is suitable golden eagle foraging habitat in and near the proposed project area; however proposed activities in the area are not likely to appreciably impact this species or its preferred habitat.
Macroinvertebrates (aquatic Insects)	Aquatic macroinvertebrates play important roles in ecosystems where they occur. Their best known role is serving as food for other organisms, especially fish, amphibians, and water birds. They are also important in other ecological processes such as the breakdown and cycling of organic matter and nutrients.	Considered. Aquatic macroinvertebrates occur in streams near the proposed lease modification area. Macroinvertebrates were found in streams near the proposed lease modification area.

Macroinvertebrates (Aquatic)

A variety of aquatic macroinvertebrate species (Collins, Patrick D., Perennial Stream considerations at "No-Name Creek" & Blind Canyon Creek, Tributaries to Huntington Canyon Creek, June, 2004) that require a continuous water source inhabit Blind Canyon Creek, which flows near the northern end of the proposed lease modification area. A number of macroinvertebrates that do not require year-round flows were found in the lower reach of Shingle Canyon Creek, which is east of the lease modification area.

Changes in aquatic macroinvertebrate populations have been linked to changes in aquatic habitat condition due to land management actions. Aquatic macroinvertebrate population changes have been attributed to high spring runoff, to high summer water flows, to low stream flows, increased sedimentation and changes in water chemistry.

3.2.4.4 Migratory Birds

Migratory bird conventions impose obligations on federal agencies for the conservation of migratory birds and their habitats. The Migratory Bird Treaty Act has implemented these conventions with respect to the United States, and Executive Order 13186 ensures that environmental analyses of Federal actions required by the NEPA or other established environmental review processes evaluate the effects of actions on migratory birds, with emphasis on species of concern.

The Utah Partners in Flight Avian Conservation Strategy identifies 20 non-game migratory land birds as priority species. Eleven of these species could be expected to occur on the Ferron/Price Ranger District of the Manti-La Sal National Forest. Table 3-4 lists these species, their habitat associations, and their consideration in the document.

Table 3-4
Neotropical Migratory Birds

Table 3-4. Neotropical migratory birds (NTMBs) listed as priority species by the Utah Partners in Flight Avian Conservation Strategy that could occur on the Manti Division of the Manti-La Sal National Forest.

Common name (<i>Scientific name</i>)	Species/Habitat Associations	Consideration of this species
Virginia's Warbler (<i>Vermivora virginiae</i>)	Preferred breeding habitat includes chaparral and open stands of pinyon/juniper, ponderosa pine and scrub oak, mountain mahogany thickets or other low brushy habitats on dry mountainsides. In Utah, the primary breeding habitat is oak, and secondary breeding habitat is pinyon/juniper at elevations ranging from 4,000 to 10,000 ft. (Parrish et al. 2002).	Not Considered. Virginia's warblers are known to occur on the Ferron/Price Ranger District of the Manti-La Sal NF, but they are not known to nest here, and there is no suitable breeding habitat in the proposed lease modification area.
Gray Vireo (<i>Vireo vicinior</i>)	Preferred breeding habitat is on arid slopes dominated by mature pinyon/juniper woodlands. This species commonly occurs in suitable habitats in Colorado, Nevada and Arizona at elevations ranging from 3200 ft. to 6800 ft., and they are known to nest in southwest Utah north to Sevier County. Gray vireos are not believed to nest on the Manti Division of the Manti-La Sal NF, but occur at lower elevations in Emery County, Utah (Parrish et al. 2002).	Not Considered. The proposed lease modification area does not provide suitable habitat for this species, and the project area is located above 8,000 ft. elevation, which is above the elevation range of this species.
Bell's Vireo (<i>Vireo bellii arizonae</i>)	Preferred nesting habitat in Utah is cottonwood-willow dominated riparian areas. This species breeds in southwestern Utah in the Virgin River drainage, Zion NP, and Beaver Dam Wash (Parrish et al. 2002). Bell's vireos are not known to nest on the Manti Division of the Manti-La Sal NF.	Not Considered. The proposed project area does not contain suitable riparian habitat for this species.
Black Rosy-Finch (<i>Leucosticte atrata</i>)	Breeds above timberline in Alpine tundra using barren, rocky or grassy areas and cliffs among glaciers or at bases of snow fields. In Utah, the largest breeding populations occur in alpine habitats in the Wasatch and Uinta Mountains.	Not Considered. The proposed project is located in sub-alpine habitats below the elevation breeding range of the black-rosy finch.

Brewer's Sparrow
(*Spizella breweri breweri*)

Breeding habitat is primarily shrubsteppe, but may also breed in high desert scrub (greasewood) habitats. Breeding habitats are usually dominated by big sagebrush (Parrish et al. 2002).

Not Considered. There is some potentially suitable breeding habitat within the proposed lease modification area; however proposed activities in this area are not likely to appreciably impact the Brewer's sparrow.

Black Swift
(*Cypseloides niger*)

Black swifts nest in small colonies near and often behind waterfalls at elevations ranging from 6,000 ft. to 11,500 ft (Parrish et al. 2002). There are only 2 confirmed breeding locations Utah: the Bridal Veil Falls area and Aspen Grove area (Parrish et al. 2002)

Not Considered. The proposed project area does not contain suitable nesting habitat for this species.

Broad-tailed Hummingbird
(*Selasphorus platycercus*)

In Utah, the primary breeding habitat is lowland riparian; They have also been recorded as breeding in mountain riparian, aspen, ponderosa pine, Engelmann spruce, subalpine fir, and Douglas fir (Parrish et al. 2002). Nesting typically occurs at elevations ranging from 6,000 to 8,000 ft. near streamside habitat.

Not Considered. The broad-tailed hummingbird may occur in the proposed lease modification area; however proposed activities in the area are not likely to appreciably impact this species.

Ferruginous Hawk
(*Buteo regalis*)

Usually breeds in areas of flat and rolling terrain in grassland or shrub steppe habitat. Avoids high elevations, forest and narrow canyons. Occurs in grasslands, agricultural lands, sagebrush/saltbrush/greasewood shrub lands and the periphery of pinyon/juniper habitats.

Not Considered. The proposed lease modification area is located at high elevations and in steep terrain, which does not provide suitable habitat for the ferruginous hawk.

Yellow-billed Cuckoo
(*Coccyzus americanus*)

In Utah, the yellow-billed cuckoo is a rare breeder in large tracts (100-200 acres) of contiguous dense lowland riparian habitats. Over the last 10 years, there are only 3 breeding records in the state; none on the Manti Division of the Manti-La Sal NF (Parrish et al. 2002).

Not Considered. There are no large tracts of riparian habitat in or near the proposed lease modification area; the project does not provide suitable habitat for the yellow-billed cuckoo.

Black-throated Gray Warbler
(*Dendroica nigrescens*)

Preferred breeding habitat includes dry oak slopes, pinyon, juniper, pinyon/juniper woodlands, open mixed woods, and dry coniferous and mixed conifer habitats with brushy understories, and in chaparral. It occurs from sea level up to 5400 ft. elevation.

Not Considered. The proposed project is located above 8,000 feet elevation, which is above the elevation range of the black-throated gray warbler.

Sage Sparrow
(*Amphispiza belli nevadensis*)

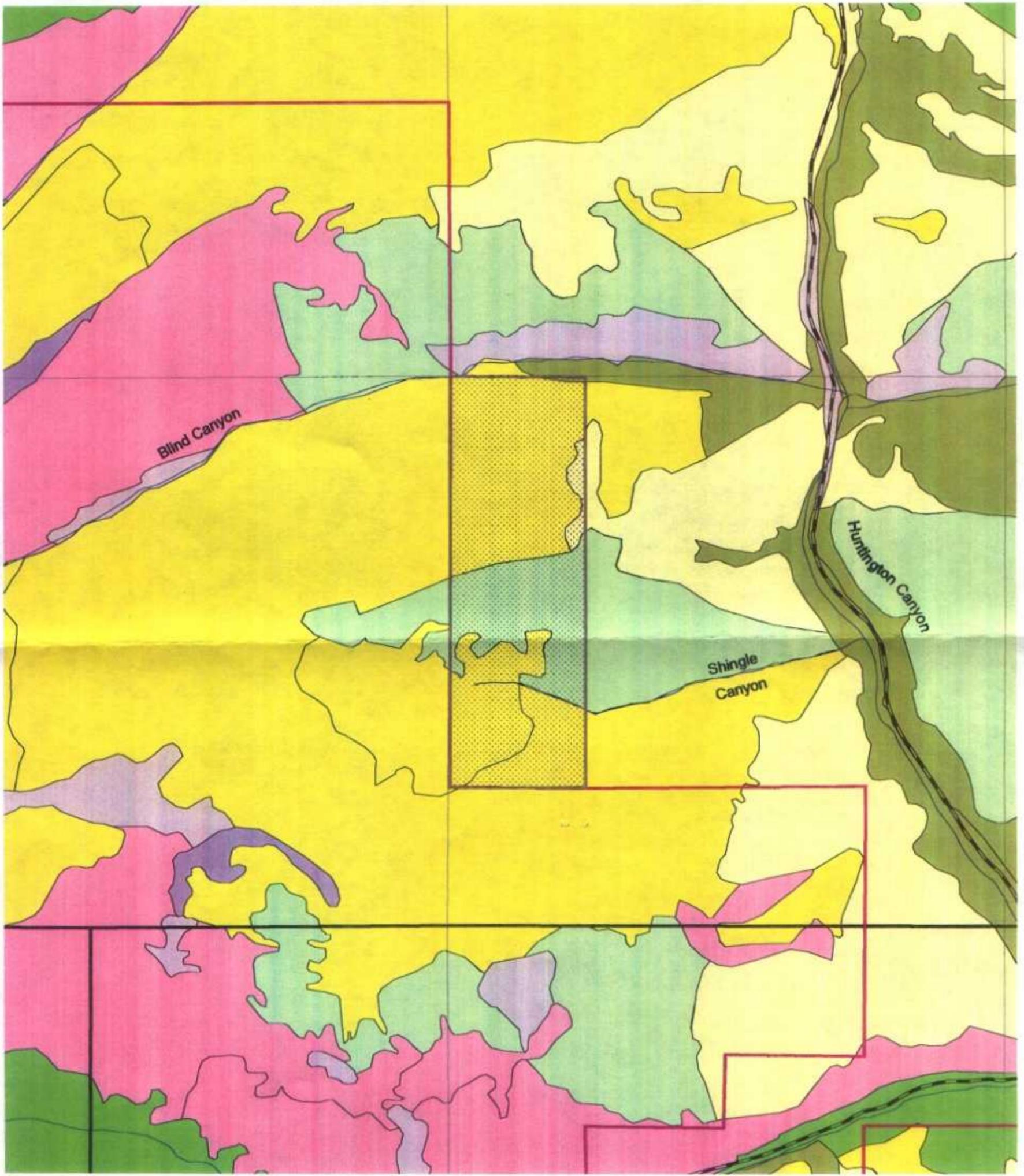
Uncommon permanent resident in Utah; occurs up to 8,000 ft. elevation. Nests have been found in rabbitbrush, hopsage, saltbush, and big sage.

Not Considered. There is some potentially suitable breeding habitat within the proposed lease modification area; however proposed activities in this area are not likely to appreciably impact the sage sparrow.

**FIGURE 4
HABITAT**

Figure 4

Modification of Federal Coal Lease UTU-68082
Habitat



Roads

- Suitable for High Clearance Vehicles Only
- Suitable for Passenger Cars

- Proposed Lease Modification
- Existing Federal Coal Leases

Vegetation

- | | |
|----------------|-----------------------|
| Grass Land | Mixed Conifer |
| Wetland | Desert Shrubland |
| Forb Land | Aspen |
| Sagebrush | Aspen/Mixed Conifer |
| Mountain Brush | Pinyon and/or Juniper |
| | Rock |

1:12000



3.3 DESCRIPTION OF OTHER RESOURCES

3.3.1 Range and Noxious Weeds

The lease modification area lies on the allotment boundary between the Gentry Mountain cattle allotment and the Crandall Ridge sheep allotment. This is a very steep area with rock outcrops and is not considered suitable for grazing by either sheep or cattle. The area is mostly mapped as unsuitable aspen. No conflicts are anticipated with the lease proposal as far as impacts to available livestock forage.

The closest livestock watering troughs are approximately 2500 feet to the southwest of the project area. This area has been previously undermined without reported damage to the troughs. In the project area itself, there are four springs that provide water for sheep while they graze the upper ridges. Cattle water in the bottom of the canyon along Huntington Creek and no impacts to available water are anticipated in this area.

Crandall Ridge Sheep Allotment

Presently, this allotment is being combined with the Crandall Canyon Sheep Allotment but the combination of these two allotments has not been finalized at this time. The permitted number of sheep is expected to be 900 head with a July 1 to September 30 grazing season. There are 3 sheep permittees dependent on this allotment for summer forage.

Gentry Mountain Cattle Allotment

The allotment provides forage for 1440 head of cattle with a June 27 to September 30 grazing season. Fifteen livestock permittees, mostly from Huntington, Utah, graze their cattle within the permitted area. Approximately 400 head enter the allotment through Huntington Canyon (west side of allotment), others enter through Mohrland (east side of Gentry Mountain). Those that use Huntington Canyon graze up side canyons and along Huntington Creek to Pole Canyon where the cows are moved to the top of Gentry Mountain. Steep side slopes in the canyon keep cattle in the bottoms and rarely do they get to the top of East Mountain.

Noxious Weeds

Musk thistle is well established in side canyons in Huntington Canyon. Any surface disturbance of the lease area would most likely be invaded by musk thistle unless aggressive control action is initiated. The status of weeds within the lease area is not known but canyons on either side of the new lease (Blind and Crandall Canyons) have established stands of musk thistle. Biological control agents have been placed throughout Huntington Canyon but establishment of viable populations of those insects has been spotty.

No roads or portal facilities would be constructed for this project and, therefore, noxious weed introduction should not occur.

3.3.2 Paleontological and Cultural Resources

Paleontology

The area between Crandall Canyon and Blind Canyon was reviewed on Forest Service Paleontological Inventory Maps. There are no known paleontological resources in the area and very few rock outcrops within the area that lend it to meaningful fossil surveys. Therefore, there is presently no concern that the coal lease modification project would impact any resources in paleontology.

Archaeological Resources

The area was surveyed for potential historic or archaeological resources in June 2004. None were found and the potential effects have been determined to be negligible. A letter received from the Utah State Historic Preservation Office states that no historic properties would be affected in the area.

Should any unanticipated paleontological or cultural resources be encountered during the implementation of this project, all work would stop until assessment of the finding could be made.

3.3.3 Roadless Area

The proposed coal lease modification lies within the East Mountain Roadless Area. The undeveloped character of the roadless area would not be affected. No roads or portal facilities would be constructed for this project. The proposed lease modification is an isolated area adjacent to the current lease; it contains a small amount of mineable coal accessible only through the current lease. The proposed action would not lead to other future mining actions. The coal lease modification would be mined entirely by underground mining methods and adjacent existing underground mine workings would access the tract. The amount of subsidence would be minimal, approximately 3 feet.

CHAPTER 4 ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This chapter identifies the projected impacts of implementing each of the alternatives considered in detail in Chapter 2. This chapter discloses the potential direct/indirect effects, cumulative impacts, and irreversible and irretrievable commitments for the Issues Evaluated in Detail. The criteria for significant impacts refer to adverse impacts to the quality or quantity of perennial streams, intermittent stream segments tributary to perennial streams, reservoirs, wetlands, and surface water rights. Insignificant impacts are those related to ephemeral drainages, intermittent streams, and ponds. Direct and 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 1. Cumulative impacts are those effects that may occur with implementation of an alternative combined with other past, present, or reasonably foreseeable actions. Activities on East Mountain that could add incrementally to the impacts of the proposed lease modification are included in Appendix A. An irreversible commitment of resources generally applies to non-renewable resources; however, it could also apply to actions that can only be renewed after a very long period of time. Irretrievable commitments apply to losses of production or commitment of renewable natural resources; the loss is only irretrievable for the period of time during which the disruption to the resource is taking place.

Table 4-1, List of Alternatives

Alternative 1 - No Action Alternative 2 - Consent/Approval of Project as Proposed Alternative 3 - Approval of the Project with Supplemental FS Mitigations

4.2 DIRECT AND INDIRECT EFFECTS OF ALTERNATIVE IMPLEMENTATION

4.2.1 Surface Water

Alternative 1 - No Action

Direct and Indirect Effects

No change from those described in Chapter 3.

Cumulative Impacts

No change from the existing condition.

Irreversible and Irretrievable Commitment of Resources

None.

Alternative 2 - Approval of the Lease Modification as Proposed

Direct and Indirect Effects

Full extraction mining could cause fractures to extend from the mine to the surface where overburden (Figure 2, page 15) is less than approximately 50 times the height of the extracted coal (Peng, BLM communication November 2004). The maximum depth that tension fractures extend below the surface is approximately 50 feet (Maleki, FS communication November 2004). Based on these data, the overburden necessary to prevent fracturing that could extend from the surface to the mine workings would be 50 times the thickness of the coal plus 50 feet. Figure 2 depicts a 300 foot overburden contour for a 5 foot seam (5 feet of coal x 50 plus 50 feet = 300 feet). These fractures could divert water (which would normally flow down the drainages) from the surface into the mine workings. The result would be a decrease in flow with associated impacts to drainages. The fractures would tend to heal within a few years by a combination of sloughing of sediments into the fractures and swelling of the clays. The loss of water could impact the riparian habitat around the springs, along the drainages, and the stock watering rights held by the FS.

Cumulative Impacts

The impacts to surface water may add incrementally to the impacts to surface water by other past, present, and future mining activities in Huntington Canyon. Subsidence and surface cracking may result in alteration of surface and subsurface water flow paths, ultimately affecting the springs and seeps supplying water to the drainages.

Huntington Creek is currently experiencing reduced flows due to long term drought conditions and limited releases from Electric Lake.

Irreversible and Irretrievable Commitment of Resources

Crandall Canyon Mine seldom has a need to discharge water to Crandall Canyon Creek. Most of the water seeping into the mine is utilized as process water. Therefore, surface water diverted to the mine might not be discharged back into the Huntington Creek watershed through the mine portal in Crandall Canyon. The water would be irretrievably lost as far as its use in supporting the riparian system and stock watering along Shingle Canyon Creek and Blind Canyon.

Alternative 3 - Approval of the Lease Modification with Supplemental Mitigations

Direct and Indirect Effects

Not allowing surface subsidence in areas with insufficient overburden would limit fractures from connecting the surface with the mine workings, and thus would prevent water from being diverted into the mine. The surface water would be kept on the surface to support the riparian systems and stock watering rights in the drainages. There would be no direct or indirect effects to surface water resources.

Cumulative Effects

Mining in the area of the lease modification would not increase cumulative impacts to the surface water resources of the Huntington Creek drainages. Impacts of other mining activities in the area would continue.

Irreversible and Irretrievable Commitment of Resources

None.

4.2.2 Ground Water

Alternative 1 - No Action

Direct and Indirect Effects

No change from those described in Chapter 3.

Cumulative Impacts

No change from the existing condition.

Irreversible and Irretrievable Commitment of Resources

None.

Alternative 2 - Approval of the Lease Modification as Proposed

Direct and Indirect Effects

Surface subsidence effects could affect flow patterns to existing springs and seeps that are located in areas with insufficient overburden. Several springs and seeps (Figure 2, page 15) are located in areas with insufficient overburden (5 ft coal seam thickness x 50 plus 50 feet = 300 feet). With insufficient overburden, subsidence cracks could reach from the mine to the ground surface, providing a direct hydraulic connection. Surface water (interflow, through flow, and sheet flow) and groundwater (springs and seeps)

would be intercepted by the mine workings in this case, depriving the drainage of the water it would normally receive. Riparian areas are probably associated with each of these springs/seeps. Loss of this water could affect the production of forage available for cattle, sheep, and wildlife, resulting in a reduction in the cattle and sheep allotments and in a change of wildlife habitat.

Cumulative Impacts

The past, present or reasonably foreseeable future actions that may add incrementally to impacts to the ground water resources of the area are mining activities within:

- 1) Mill Fork Coal Tract (Deer Creek Mine, Energy West Mining Company).
- 2) South Crandall Revision (Crandall Canyon Mine, Genwal Mining Company).
- 3) Crandall Canyon Mine.

Subsidence and surface cracking from underground coal mines in the area may result in alteration of flow paths to springs and seeps with potential loss of water.

Irreversible and Irretrievable Commitment of Resources

If a sufficient overburden were not maintained, there would be an irreversible loss of ground water captured by the mine. The amount of water lost to the mine would be irretrievable.

Alternative 3 - Approval of the Lease Modification with Supplemental Mitigations

Direct and Indirect Effects

Requiring an overburden of 50 times the coal seam thickness plus 50 feet would limit the possibility of subsidence cracking providing a direct hydraulic connection between the mine and surface. In this case, the mine would not capture surface runoff and alluvial ground water flow and there would be no direct or indirect effects to ground water resources in the proposed lease modification.

Cumulative Impacts

Cumulative impacts to ground water resources would not be expected under this alternative.

Irreversible and Irretrievable Commitment of Resources

None.

4.2.3 Escarpment Failure

Alternative 1 - No Action

Direct and Indirect Effects

No change from those described in Chapter 3.

Cumulative Impacts

No change from the existing condition.

Irreversible and Irrecoverable Commitment of Resources

None.

Alternative 2 - Approval of the Lease Modification as Proposed

Direct and Indirect Effects

The estimated surface subsidence is approximately 3 ½ feet, based upon a 5 feet coal seam thickness. Approximately 1400 feet of the Castlegate sandstone escarpment is susceptible to subsidence (Figure 3, page 17). Subsidence could result in tension racking and the possible separation of blocks from the escarpment. The small size of the escarpment, its remoteness, the fact that no man-made structures are present in the lease modification area, and its distance from the nearest road all tend to mitigate the effects of undermining the escarpment.

The projected amount of subsidence in ledges associated with this project would not be expected to create apparent visual changes. The subsidence in ledges would appear as natural occurrences and blend with existing ledge features. This result is consistent with the Visual Quality Objectives of Modification and Partial Retention for the area.

There are no raptor nests located within or near the tract; therefore there would be no direct or indirect effects to raptors.

Erosion would be slightly increased over natural conditions. However, this would not lead to a substantial increase in sedimentation received by any of the drainages within or near the tract.

Cumulative Impacts

None.

Irreversible and Irrecoverable Commitment of Resources

None.

Alternative 3 - Approval of the Lease Modification with Supplemental Mitigations

Direct and Indirect Effects

Same as Alternative 2.

Cumulative Impacts

Same as Alternative 2.

Irreversible and Irrecoverable Commitment of Resources

Same as Alternative 2.

4.2.4 Wildlife

Alternative 1 - No Action

Direct and Indirect Effects

No change from those described in Chapter 3.

Cumulative Impacts

No change from the existing condition.

Irreversible and Irrecoverable Commitment of Resources

None.

Alternative 2 - Consent/Approval of the Lease modification as Proposed

Direct and Indirect Effects

The proposed lease modification would not likely directly or indirectly impact any threatened, endangered, proposed or candidate wildlife species or their preferred or critical habitat (Figure 4, page 26). However one sensitive wildlife species, the spotted bat, could potentially be impacted.

Spotted bats are known to occur in Huntington Canyon, which is located just east of the proposed lease modification area. Rock outcrops in the project area may provide

marginally suitable roost habitat; however since there is an abundance of cliff faces more suitable for roosting throughout Huntington Canyon and its tributaries, roosting in the project area is not expected to be common. Therefore, there is not likely to be appreciable direct or indirect affects to roosting spotted bats or roosting habitat.

Spotted bats may forage in the proposed lease modification area; however proposed activities in the project area would not alter foraging habitat and the project would not likely directly or indirectly impact foraging spotted bats.

Macroinvertebrates could be impacted by a loss of water in Shingle Canyon Creek under this alternative. Without an adequate overburden thickness, the mine could intercept water that would normally enter the drainage.

Cumulative Impacts

Under this alternative, there would be cumulative impacts to the macroinvertebrate population downstream of the lease modification area. The drainage would be deprived of the water that the macroinvertebrates require to survive.

Irreversible and Irretrievable Commitment of Resources

An irreversible commitment of resources would be associated with the loss of habitat supporting the macroinvertebrate population.

The loss of habitat supporting the macroinvertebrate population would be an irretrievable commitment for the time that surface water is intercepted by the mine.

Alternative 3 - Approval of the Lease Modification with Supplemental Mitigations

Direct and Indirect Effects

Under this alternative, an adequate overburden thickness would be maintained, flows would remain intact and effects to the macroinvertebrate population would be mitigated.

Cumulative Impacts

Since the proposed lease modification area would not appreciably directly or indirectly affect aquatic macroinvertebrates, there would be no cumulative impacts as a result of the proposed project.

Irreversible and Irretrievable Commitment of Resources

Under this alternative, there would be no irreversible or irretrievable commitment of resources.

CHAPTER 5 COMMENTS AND RESPONSES

5.1 INTRODUCTION

This chapter presents the comment letters received by the Forest Service in response to public scoping and the Forest Service responses to those comment letters. Four letters were received and each one was assigned a number based upon the order in which it arrived. The letters are presented in their entirety in Section 5.3, following the responses. A bracket in the left column identifies individual comments in each letter; the number accompanying the bracket keys the comment to the appropriate response.

The 4 letters received are listed below:

<u>Letter Number</u>	<u>Letter Date</u>	<u>Affiliation</u>
1	June 2, 2004	Utah Environmental Congress
2	June 3, 2004	The Hopi Tribe
3	July 8, 2004	U.S. Fish and Wildlife Service
4	July 13, 2004	The Navajo Nation

5.2 RESPONSES

The responses to comments are presented below in the order the letters were received.

Comment Letter 1 Utah Environmental Congress

Comment 1.1:

“The Legal Notice of opportunity to comment on the Proposed Action states that an ‘Environmental Analysis’ will be conducted”.

“Coal lease modifications may not be Categorical Excluded from NEPA because they trigger the environmental assessment/environmental impact statement process”.

“Is the Forest actually intending to CE the proposed coal lease modification?”

FS Response:

The Forest Service and the BLM will prepare an Environmental Analysis for this project.

Comment 1.2:

“The Legal Notice of Proposed Action does not provide an adequate description of the Proposed Action. All that exists is a general township and range description of the area

of concern (in Township 16 South, Range 7 East, SLM) and a statement that a coal lease modification is proposed in that location”.

FS Response:

The original legal notice (published on May 4, 2004) incorrectly stated that the lease modification was located in Township 16 South. It was republished on June 8, 2004 to correctly state Township 15 South. However, the public scoping letters that were sent out to 77 recipients (including UEC) on May 10, 2004 correctly stated that the lease was located in Township 15 South.

Both the revised legal notice and public scoping letter adequately describe the location of the proposed coal lease modification and the purpose of adding the 120 acre tract to the existing lease.

Comment 1.3:

“There is no description of any restrictions, allowances, stipulations or mitigation that may or may not be associated with the proposed action”.

FS Response:

It is Forest Service policy to develop stipulations and mitigations during the NEPA process; therefore, the Forest Service does not identify mitigations at the time of scoping.

Comment 1.4:

“The UEC is concerned that the Proposed Action described in the Legal Notice of Opportunity to Comment on the Proposed action may be part of a larger action or plan but is being analyzed separately in a manner that is not consistent with NEPA”.

“Located immediately south of Rilda Canyon, this Proposed Action appears to be an interdependent part of a larger action or plan to expand a coal mine further under the southern end of the East Mountain roadless area”.

“Accordingly, these analyses should be combined into one NEPA analysis, and not inappropriately compartmentalized”.

FS Response:

As explained under the response to Comment 2, the proposed lease modification area is in Township 15; approximately 5 miles north of the proposed Rilda Canyon portal facilities. The coal reserves in the proposed 120 acre lease modification would be approached from existing underground mine workings in the Crandall Canyon Mine. No roads or portal facilities would be constructed for this project. The proposed lease modification area is an isolated area adjacent to the current lease; it contains only a small amount of mineable coal accessible only through the current lease. The proposed action would not lead to other future mining actions. The maximum modification for any lease is 160 acres. That puts a limit on how much acreage could be added as a lease modification without issuing a new lease.

Comment 1.5:

“Furthermore, we are concerned that many of the current and proposed oil, gas and coal projects on the Wasatch Plateau have cumulative impacts that were not included or anticipated in the scope of the 1986 Manti-La Sal Forest Plan FEIS, or the 1992-1994 amendments that dealt solely with oil/gas cumulative effects and NOT the cumulative effects of subsidence coal mining”.

FS Response:

Cumulative impacts, including associated subsidence related impacts, for coal areas were addressed in the 1986 Manti-La Sal Forest Plan FEIS. Cumulative effects for oil and gas projects were addressed in the 1992 Oil and Gas FEIS, in the EA completed for the original lease to be readjusted, and in the EA for the adjacent Mill Fork Tract (currently leased as State Coal Lease ML 48258).

Comment 1.6:

“Because of the adverse, long term cumulative effects to forest resources that have not been adequately disclosed or analyzed, we urge the Forest to develop a new programmatic EIS or SEIS that would disclose, discuss, and analyze the significant cumulative impacts to the watershed, Threatened, Endangered species (including Threatened and Endangered fish who may be adversely impacted downstream off of the Forest), as well as Proposed (ESA), FS Sensitive species”.

FS Response:

The Forest Plan is currently under revision. The associated environmental analysis will include a cumulative effects analysis, as appropriate, including an assessment of effects to Threatened, Endangered, and Sensitive species.

Comment 1.7:

“Cumulative effects to wolverine have never been disclosed or analyzed, and need to be with this analysis”.

FS Response

The Utah Division of Wildlife Resources (DWR) has stated that “the species was probably never common in Utah...” and that “Wolverines prefer alpine tundra and mountain forests that are not frequented by humans.” Sightings have been reported in parts of Utah, but not near the project area. DWR has recently mapped potential wolverine habitat, which includes the lease modification area. However, underground coal mining within the lease modification area would not impact possible wolverine habitat on the Forest.

Comment 1.8:

“We are also concerned that the irretrievable and irreversible commitments of roadless and wilderness resources have not been disclosed or properly analyzed for this region”.

FS Response:

No roads or surface facilities are anticipated for this project; there would be no effects to

the roadless character caused by the project.

Comment 1.9:

“Perhaps most importantly, there needs to be a rigorous analysis of the cumulative effects to the watersheds originating on the Wasatch Plateau from the extensive oil, gas, AND coal mining. Most, if not all perennial streams, reservoirs, and springs in this part of the Wasatch Plateau have been affected by the cumulative impacts of oil, gas and coal mining, but there has never been an adequate analysis of the cumulative effects”.

FS Response:

As noted in the response to Comment 5, cumulative effects for coal areas were addressed in the 1986 Forest Plan FEIS; additionally, cumulative effects for oil and gas development were addressed in the 1992 Oil and Gas FEIS.

Comment 1.10:

“The Migratory Bird Treaty Act (MBTA) makes it unlawful to take, kill, or possess migratory bird resources, which includes individuals, their young, their parts, nests, or eggs”.

“To help meet responsibilities under Executive Order 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds), the UEC recommends that you conduct activities outside critical breeding seasons for migratory birds, minimize temporary and long-term habitat losses, and mitigate all unavoidable habitat losses”.

FS Response:

As described previously, no surface facilities or roads are anticipated for this project. The coal lease modification would be mined entirely by underground mining methods and adjacent existing underground mine workings would access the tract. The amount of subsidence would be minimal and it is not anticipated that migratory birds would suffer adverse effects.

Comment 1.11:

“Consultation with U.S. Fish and Wildlife Service should be conducted for the Mexican Spotted Owl (MSO) and Lynx since this area may contain suitable habitat for both listed species, and this is close to the only recent, confirmed lynx in Utah. Population and habitat surveying for MSO should be conducted throughout the project area and cumulative effects analysis area(s) (which are not disclosed in the Scoping Notice), focusing on cliffs, rock outcroppings, and other escarpments, which may contain MSO or their habitat”.

“The Township and Range description provided identifying the Proposed Action is very close to at least one confirmed active Golden eagle nest that needs to be closely monitored and appropriate mitigation measures need to be provided in the Proposed Action.

FS Response:

The land surface elevation in the proposed lease modification area is above potential MSO habitat. There is no suitable MSO or lynx habitat in the proposed lease modification area. Consultation with the U.S. Fish and Wildlife Service will take place as appropriate based on conclusions of the Biological Evaluation/Biological Assessment and agreements between the agencies. The selected alternative will provide for monitoring and protection of wildlife determined necessary.

There are no raptor nests in or near the proposed lease modification area that could potentially be affected by subsidence.

Comment 1.12:

“Mule deer, Rocky mountain elk, macroinvertebrates (BCI), goshawk, three toed woodpecker are MIS that should be central issues with the proposed subsidence mining”.

“Specifically, any site-specific analysis must address the impacts of development to MIS, MIS populations, as well as MIS habitat”.

FS Response:

An impact analysis for MIS species will be provided in the EA and/or supporting documents for the proposed lease modification. The Three-toed woodpecker is not an MIS for the Manti-La Sal N.F.

Comment 1.13:

“Subsidence of the surface may disrupt the soils, hydrology and physiological integrity of the plants that comprise the mixed conifer forest on the surface, making the forest more susceptible to insect and disease. Stressed and insect-infested coniferous forests may or may not present greater risk of wildfire (in terms of ignitability and intensity of burn)”.

FS Response:

The vegetative cover on the proposed coal lease modification is not mixed aspen-conifer. Aspen Plant Community covers 86 of the 120 acres; grass and Big Mountain Sagebrush cover the remaining 34 acres. The effects of subsidence have been evaluated in the EA and mitigations developed as necessary to minimize effects to meet Forest Plan direction for the area.

Comment Letter 2
The Hopi Tribe

Comment 2.1:

“As you know, the Hopi Cultural Preservation Office supports the identification and avoidance of prehistoric archaeological sites and Traditional Cultural Properties. Therefore, to assist us in determining if the area of potential effect for this proposal contains cultural resources significant to the Hopi Tribe, please provide us with a copy of the cultural resource survey report of the project area for review and comment”.

FS Response:

The cultural resource survey report for the project has been submitted to the Hopi Cultural Preservation Office.

Comment Letter 3
U.S. Fish and Wildlife Service

Comment 3.1:

“During a conversation between Diana Whittington of our office and Karl Boyer from the Forest (June 24, 2004), we learned that the area under consideration for mining in this current lease addition presents conditions that may lead to loss of perennial surface water from mining subsidence”.

FS Response:

Mr. Erik Petersen performed a hydrologic investigation of the proposed coal lease modification area. Two visits were performed during May and June 2004. A hydrologic report based on the findings was submitted to the Forest Service in late June. On the first visit, all of the springs and seeps that had been identified in the study area during past surveys were monitored for discharge and water quality. The drainage in the southern portion of the study area, referred to as No-Name Canyon, was also monitored for discharge and water quality on both visits. Recent and historical data indicate that the springs and seeps are not supported by a deep-seated reservoir capable of sustaining flow throughout the year. Rather, they are supported by snowmelt during the spring and early summer. The flows recorded in No-Name Canyon also reflect these findings. The basic conclusion of the report was that No-Name Canyon is not perennial.

Mr. Patrick Collins performed a field investigation of the same area in May and June 2004. Mr. Collins' investigation relied mainly on biological resource indicators. Relative comparisons of stream flows were also made on the three visits to the area; actual discharges were not recorded. Macroinvertebrate species in No-Name Canyon indicate that it is not perennial. However, certain plant species found in the drainage leave open the possibility that the stream could be given a perennial designation. Mr. Collins stated that it is possible that No-Name Canyon could be intermittent in the upper reaches and perennial in the lower reaches. Mr. Collins also stated that the only method to make a conclusive determination regarding perennial status was to conduct another survey of the area later in the growing season. With regard to Blind Canyon, Mr. Collins stated that a perennial designation could be assigned to that drainage with much more confidence at this time.

Comment 3.2:

“In general, areas with shallow overburden will be more prone to surface cracks from subsidence, and thus more prone to loss of surface water. Also, given the close proximity of the coal seam to the surface, there may be an increased risk to wildlife from contamination of water that seeps through the subsidence cracks and then resurfaces quickly”.

FS Response:

Approximately 25% of the proposed coal lease modification has 300 feet or less of overburden. The two areas of concern are in the northern and southeastern portions of the lease modification. Many of the springs and seeps are located in the southeastern area. Studies and experience have shown that an overburden equal to 50 times the coal seam thickness plus 50 feet is required to prevent structural cracking reaching from the mine to the ground surface. Since the coal seam thickness is expected to be approximately 5 feet, the overburden required is 300 feet. If less overburden is present a direct connection (through ground cracking) to the surface would be established, resulting in the capture by the mine of surface runoff, interflow, and throughflow. In order to prevent this, the FS has required a stipulation that will limit full extraction mining to areas with overburden equal to 50 times the coal thickness plus 50 feet.

Comment 3.3:

“These aspen stands are in the immediate vicinity of the springs and seeps that might be affected by mining subsidence. Loss of these springs and seeps may result in loss of the aspen stands, a primary breeding habitat for a Service Bird of Conservation Concern, the red-naped sapsucker. In addition, aspen stands provide high-value habitat for big game species such as elk and mule deer”.

“In light of the aforementioned value of perennial surface waters to fish and wildlife resources, we recommend that any mining permitted be limited to mining for non-subsidence in areas where loss of springs or seeps may occur”.

FS response:

Mining subsidence, in itself, might not result in the loss of the seeps and springs as long as sufficient overburden is present to prevent a direct connection between the mine and ground surface. Additionally, aspen stands are not linked to springs and seeps.

Comment 3.4:

“Federal agencies have specific additional responsibilities under Section 7 of the ESA. To help fulfill these responsibilities, we are providing an updated list of threatened (T) and endangered (E) species that may occur within the area of influence of your proposed action”.

“The proposed action should be reviewed and a determination made if the action will affect any species or their critical habitat. If it is determined by the Federal agency, with the written concurrence of the Service, that the action is not likely to adversely affect listed species or critical habitat, the consultation process is complete, and no further action is necessary”.

“Formal consultation (50 CFR 402.14) is required if the Federal agency determines that an action is ‘likely to adversely affect’ a listed species or will result in jeopardy or adverse modification of critical habitat (50 CFR 402.02)”.

“A written request for formal consultation or conference should be submitted to the

Service with a completed biological assessment and any other relevant information (50 CFR 402.12).

FS Response:

A thorough wildlife analysis will be performed, in which the effects to each listed species resulting from the proposed project will specifically be addressed, and the results presented in the BE/BA. If it is determined that a listed species would be adversely affected, the Service would be consulted.

Comment 3.5:

“Candidate species have no legal protection under the Endangered Species Act (ESA). Identification of candidate species can assist environmental planning efforts by providing advance notice of potential listings, allowing resource managers to alleviate threats and, thereby, possibly remove the need to list species as endangered or threatened”.

“Only a Federal agency can enter into formal Endangered Species Act (ESA) section 7 consultation with the Service”.

“The ultimate responsibility for compliance with ESA section 7, however, remains with the Federal agency”.

“Your attention is also directed to section 7(d) of the ESA, as amended, which underscores the requirement that the Federal agency or the applicant shall not make any irreversible or irretrievable commitment or implementation of reasonable and prudent alternatives regarding their actions on any endangered or threatened species”.

FS Response:

If consultation is necessary, the Forest Service will enter into that consultation. No irreversible or irretrievable commitment will occur during the consultation period.

Comment 3.6:

“Raptor surveys and mitigation measures are provided in the Raptor Guidelines as recommendations to ensure that proposed projects will avoid adverse impacts to raptors, including the peregrine falcon”.

FS Response:

A recent raptor survey was conducted of the proposed coal lease modification. No nests are located in or near the proposed project area. Guidelines in the “Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances” will be adhered to.

Comment 3.7:

“Threats that warrant a species listing as a sensitive species by state and federal agencies and as threatened or endangered under the ESA should be significantly reduced or eliminated through implementation of the Conservation Agreement. Project plans should be designed to meet the goals and objectives of these Conservation Agreements”.

FS Response:

The Colorado River Cutthroat Trout is not found in the proposed project area. Subsidence in the project area would not result in a detectable increase in sedimentation in nearby streams that contain Colorado River Cutthroat Trout.

Comment Letter 4

Navajo Nation Historic Preservation Department (HPD)

The HPD stated that after reviewing our scoping letter describing the project and cross referencing their sacred sites database, they did not have any immediate concerns with the project and that the project would not impact any Navajo Traditional Cultural Properties.

5.3 COMMENT LETTERS

CHAPTER 6 LIST OF PREPARERS

The following is a list of personnel from the responsible agencies and cooperating agencies included on the project Interdisciplinary Team (IDT):

Karl Boyer. Geologist, USDA Forest Service, Manti-La Sal National Forest, Forest Supervisor's Office, Price, Utah

Bruce Ellis. Forest Archaeologist, USDA Forest Service, Manti-La Sal National Forest, Forest Supervisor's Office, Price, Utah

Katherine Foster. Forest Hydrologist, USDA Forest Service, Manti-La Sal National Forest, Forest Supervisor's Office, Price, Utah

Gregg Hudson. Geologist, USDI Bureau of Land Management, Solid Minerals Group, State Office, Salt Lake City, Utah

Brent Hanchett. Forest Landscape Architect, USDA Forest Service, Ashley National Forest, Forest Supervisor's Office, Vernal, Utah

John Healy. Range Specialist, USDA Forest Service, Manti-La Sal National Forest, Ferron/Price Ranger District, Ferron Office, Ferron, Utah

Floyd McMullen. Senior Environmental Project Manager, USDI Office of Surface Mining, Western Regional Coordinating Center, Denver, CO

Terry Nelson. Wildlife Biologist, USDA Forest Service, Manti-La Sal National Forest, Forest Supervisor's Office, Price, Utah

Rodney Player. Ecosystems Branch Chief, USDA Forest Service, Manti-La Sal National Forest, Forest Supervisor's Office, Price, Utah

Robert Thompson. Forest Botanist, USDA Forest Service, Manti-La Sal National Forest, Forest Supervisor's Office, Price, Utah

CHAPTER 7 REFERENCES

- Forest Service Handbook 2509.22, Soil & Water Conservation Practices.
- USDA-FS. 1978. Manti-La Sal National Forest Roadless Area Review and Evaluation (RARE II), 1978.
- USDA-FS. 1984. Roadless Areas, A Briefing Guide for the Manti-La Sal National Forest, 1984.
- USDA-FS. 1986. Manti-La Sal National Forest Final Environmental Impact Statement; Manti-La Sal National Forest, Price, Utah
- USDA-FS. 1986. Land and Resource Management Plan, Manti-La Sal National Forest; Manti-La Sal National Forest, Price, Utah
- USDA-FS 1992. Final Environmental Impact Statement for Oil and Gas Leasing on Lands Administered by the Manti-La Sal National Forest, December 1992.
- USDA-FS. 1993. Summary and Record of Decision, Final Environmental Impact Statement for Oil and Gas Leasing on Lands Administered by the Manti-La Sal National Forest, January 1993.
- USDA-FS. 1994. Record of Decision Modifying Specific Aspects of the January 12, 1993 Record of Decision, Final Environmental Impact Statement for Oil and Gas Leasing on Lands Administered by the Manti-La Sal National Forest.
- USDI-BLM, 1999. Final Environmental Impact Statement, Ferron Natural Gas Project, June 1999.
- Atwood, D., J. Holland, R. Bolander, B. Franklin, D. E. House, L. Armstrong, K. Thorne, and L. England. 1991. Utah threatened, endangered, and sensitive plant field guide. USFS, NPS, BLM, UNHP, USFWS, EPA, Navajo Nation, and Skull Valley Goshute Tribe.
- AWITT (Arizona Willow Interagency Technical Team). 1995. Arizona Willow Conservation Agreement and Strategy. U.S. Forest Service, Intermountain Region, Ogden, Utah; U.S. Forest Service, Southwest Region, Albuquerque, New Mexico; National Park Service, Rocky Mountain Region, Denver Colorado; U.S. Fish and Wildlife Service, Mountain-Prairie Region, Salt Lake City, Utah; U.S. Fish and Wildlife Service, Southwest Region, Albuquerque, New Mexico.
- Graham, R.T., R.L. Rodriguez, K.M. Paulin, R.L. Player, A.P. Heap. and R. Williams. 1999. The northern Goshawk in Utah: Habitat Assessment and Management

Recommendations. Gen. Tech. Rep. RMRS-GTR-22. Ogden, Utah: U.S.D.A. Forest Service, Rocky Mountain Research Station. 48p.

Hasenyager, R. N. 1980. Bats of Utah. Utah Division of Wildlife Resources. Publication Number 80-15.

Hynes, H.B.N. 1972. The Ecology of Running Waters. University of Toronto Press. Toronto, Canada.

Oliver, G.V. 2000. The Bats of Utah: A Literature Review. Utah Division of Wildlife Resources, Salt Lake City, Utah.

Parrish, J.R., F.P. Howe, R.E. Norvell. 2002. Utah Partners in Flight Avian Conservation Strategy Version 2.0. Utah Partners in Flight Program, Utah Division of Wildlife Resources, 1594 West North Temple, Salt Lake City, Utah 84116, UDWR Publication Number 02-27.

Perkins, J.M. and J.R. Peterson. 1997. Bat survey for the SUFCO Mine, Emery County, Utah. 8pp.

Sherwin, R.E., D.S. Rogers, and C.A. Johansson. 1997. Assessment of spotted bat (*Euderma maculatum*) and Townsend's big-eared bat (*Corynorhinus townsendii*) in the proposed Cottonwood Canyon lease area. Manti La Sal National Forest, Emery County, Utah. Conducted for Energy West Mining Co. 18pp + append.

Spahr, R.L., L. Armstrong, D. Atwood, and M. Rath. 1991. Threatened, Endangered, and Sensitive Species of the Intermountain Region. USDA Forest Service Fisheries and Wildlife Management Intermountain Region, Ogden, Utah.

Squires, J. R. 2002. Snow-Tracking Protocol used to Delineate Lynx Populations. Rocky Mountain Research Station, Forestry Science Laboratory, Missoula, MT.

Toone, R.A. 1994. General Inventory for Bats in the Abajo and La Sal Mountains, Manti-La Sal National Forest, with Emphasis on the Spotted Bat (*Euderma maculatum*) and the Townsend's Big-eared Bat (*Plecotus townsendii*). Heritage Program Utah Department of Natural Resources, Salt Lake City, Utah.

USDA, U.S. Forest Service. 1986. Manti-La Sal National Forest Land and Resource Management Plan: Forest Plan Amendment, Appendix A. MLSNF, Price, Utah.

USDI, U.S. Fish and Wildlife Service. 2002a. Bonytail (*Gila elegans*) Recovery Goals: Amendment and Supplement to the Bonytail Chub Recovery Plan. U.S. Fish and Wildlife Service, Mountain-Prairie Region (6), Denver, Colorado.

USDI, U.S. Fish and Wildlife Service. 2002b. Humpback Chub (*Gila cypha*) Recovery Goals: Amendment and Supplement to the Humpback Chub Recovery Plan. U.S. Fish and Wildlife Service, Mountain-Prairie Region (6), Denver, Colorado.

USDI, U.S. Fish and Wildlife Service. 2002c. Colorado Pikeminnow (*Ptychocheilus lucius*) Recovery Goals: Amendment and Supplement to the Colorado Squawfish Recovery Plan. U.S. Fish and Wildlife Service, Mountain-Prairie Region (6), Denver, Colorado.

USDI, U.S. Fish and Wildlife Service. 2002d. Razorback sucker (*Xyrauchen texanus*) Recovery Goals: Amendment and Supplement to the Razorback Sucker Recovery Plan. U.S. Fish and Wildlife Service, Mountain-Prairie Region (6), Denver, Colorado.

USDI, U.S. Fish and Wildlife Service. 2002e. Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances. Utah Field Office, Salt Lake City.

USDI, Fish and Wildlife Service. 2001a. Final designation of critical habitat for the Mexican spotted owl. Federal Register 66(22): 8530-8553.

USDI, U.S. Fish and Wildlife Service. 2001b. Status Review for Bonneville Cutthroat Trout (*Oncorhynchus clarki utah*). Regions 1 and 6 Portland, Oregon and Denver, Colorado.

Watkins, L. C. 1977. Mammalian Species: *Euderma maculatum*. The American Society of Mammalogists. 77:1-4.

Welsh, S.L., N.D. Atwood, S. Goodrich, L.C. Higgins. A Utah Flora. Brigham Young University, 1993, Provo, Utah.

CHAPTER 8 GLOSSARY

Affected Environment: Surface resources (including social and economic elements) within or adjacent to a geographic area that could potentially be affected by proposed activities. The environment of the area that would be affected by the alternatives under consideration.

Allotment: See Range Allotment.

Alluvial Material: Material transported and deposited by running water in riverbeds, lakes, alluvial fans and valleys. Includes clay, silt, sand, gravel, and mud.

Alternative: A combination of management prescriptions applied in specific amounts and locations to achieve a desired management emphasis as expressed in goals and objectives. One of several policies, plans, or projects proposed for decision making. One alternative need not substitute for another in all respects.

Analysis Area: A delineated area of land subject to analysis.

Animal Unit Month (AUM): The amount of forage necessary to sustain one cow and one calf or its equivalent for one month.

Aquatic Ecosystem: All organisms in a water-based community plus the associated environmental factors.

Aquatic Wildlife or Species: Animal species that inhabit and/or depend on the aquatic ecosystems for their life processes.

Aquifer: A layer of geologic material that contains water.

Big Game Winter Range: The area available to and used by big game through the winter season.

Big Game: Larger species of hoofed, protected, wildlife that are hunted such as elk, deer, and moose.

Biological Assessment (BA): A document that discloses potential effects to Threatened, Endangered, and Candidate plant and animal species and consistency with the Endangered Species Act relative to a proposed action.

Biological Diversity: The diversity or numbers of species that collectively represent the living plants and animals within a local, regional, or continental landscape.

Biological Evaluation (BE): A document that discloses effects to Forest Service Sensitive plant and animal species relative to a proposed action.

Browse: That part of the current leaf and twig growth of shrubs, wood vines, and trees available for animal consumption.

Bureau of Land Management (BLM): The U.S. Department of the Interior agency responsible for managing most Federal government subsurface minerals. It has surface-management responsibility for Federal lands designated under the Federal Land Policy and Management Act of 1976.

CEQ: See Council on Environmental Quality.

Contrast: The effect of a striking difference in the form, line, color, or texture of an area being viewed.

Council on Environmental Quality: An advisory council to the President established by the National Environmental Policy Act of 1969. It reviews Federal programs for their affect on the environment, conducts environmental studies and advises the President on environmental matters.

Cultural Resources Inventory: A survey of existing conditions and data.

Cultural Resources: Those fragile and nonrenewable remains of human activity, occupation, or endeavor reflected in districts, sites, structures, buildings, objects, artifacts, ruins, works or art, architecture, and natural features that were or importance in human events.

Cumulative Impact: The impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time.

Developed Recreation Sites: Relatively small, distinctly defined areas where facilities are provided for concentrated public use (i.e., campgrounds, picnic areas, and swimming areas).

Developed Recreation: Recreation that occurs a man-made developments such as campgrounds, picnic grounds, resorts, ski areas, trailheads, etc.

Dispersed Recreation: That portion of outdoor recreation use that occurs outside of developed sites in the unroaded and roaded Forest environment (i.e., hunting, backpacking, and camping).

Displacement: As applied to wildlife, forced shifts in the patterns of wildlife use either in location or timing of use.

Distance Zone: The divisions of a landscape being viewed. Three zones are used to describe a landscape: foreground, middleground, background.

Diversity: (1) The relative abundance of wildlife species, plant species, communities, habitats, or habitat features per unit of area; or (2) The distribution and abundance of different plant and animal communities and species within the area covered by a Land Resource Management Plan (36 CFR Part 219.3).

Duration: The length of time the management activity and its impacts will be taking place.

Ecosystem: All organisms in a community plus the associated environmental factors.

Effects (also see Impacts):

Direct Effects - Caused by the action and occur at the same time and place.

Indirect Effects - Caused by the action later in time or farther removed in distance but still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related affects on air and water and other natural systems, including ecosystems.

Endangered Species: See Threatened and Endangered species.

Environmental Analysis: An analysis of alternative actions and their predictable short and long- term environmental effects that include physical, biological, economic, social, and environmental design factors and their interactions.

Environmental Assessment (EA): A formal public document prepared to analyze the impacts on the environment of the proposed project or action and released for comment and review. An EIS must meet the requirements of NEPA, CEQ guidelines, and directives of the agency responsible for the proposed project or action. It includes a brief discussion of the need for the proposal, alternatives considered, environmental impact of the proposed action and alternatives, and a list of agencies and individuals consulted. Prepared by the responsible Federal agency consistent with 40 CFR 1508.9.

Erosion: (1) The wearing away of the land surface by running water, wind, ice, or other geological agents including such processes as gravitational creep; or (2) Detachment and movement of soil or rock fragments by water, wind, ice, or gravity.

Exotic: Foreign, not native

Fauna: Species of the animal kingdom.

Federal Land Policy and Management Act of 1976 (FLPMA): Public Law 94-579 signed by the President on Management October 21, 1976. Established public land policy; to establish guidelines for its administration; to protect for the management, protection, development, and enhancement of the public lands; and for other purposes.

Federal Lands: Lands owned by the United States, without references to how the lands were acquired or what Federal agency administers the land, including surface estate, mineral estate and coal estate, but excluding lands held by the United States in trust for Indians, Aleuts or Eskimos.

Floodplain: The lowland and relatively flat area adjoining inland waters including, at a minimum, that area subject to a one percent or greater chance of flooding in any given year.

Flora: Plants

Forage: All browse and herbaceous foods that are available to grazing/browsing animals. Also, food source areas for goshawks.

Forest Service (FS): The agency of the United States Department of Agriculture responsible for managing National Forests and Grasslands under the Multiple Use and Sustained Yield Act of 1960.

Fossil: The remains or traces of an organism or assemblage of organisms that have been preserved by natural processes in the earth's crust exclusive of organisms that have been buried since the beginning of historical time.

Game Species: Any species of wildlife or fish for which seasons and bag limits have been prescribed and that are normally harvested by hunters, trappers, and fishermen under State or Federal laws, codes, and regulations.

Gradient: The slope (rise/run) of a surface or stream profile.

Habitat Type: An aggregation of all land areas potentially capable of producing similar plant communities at climax.

Habitat: A specific set of physical conditions that surround a single species, a group of species, or a large community. In wildlife management, the major components of habitat are considered to be food, water, cover, and living space.

Human Environment: The factors that include, but are not limited to, biological, physical, social, economic, cultural, and aesthetic factors that interrelate to form the environment.

Impact (See Effects): The effect, influence, alteration, or imprint caused by an action.

Indicator Species: A species of animal or plant whose presence is a fairly certain indication of a particular set of environmental conditions. Indicator species serve to show the effects of development actions on the environment.

Indirect Effects: Secondary effects that occur in locations other than the initial action or significantly later in time.

Inventoried Roadless Area: Area identified in a set of inventoried roadless area maps, contained in Forest Roadless Area Conservation, Final Environmental Impact Statement, Volume 2, dated November 2000, which are held at National headquarters office of the Forest Service or any subsequent update or revision of those maps.

Invertebrate: An animal lacking a spinal column.

IRA: Inventoried Roadless Area.

Irretrievable: A term that applies to the loss of production, harvest, or use of natural resources. For example, some or all of the timber production from an area is lost irretrievably while an area is serving as a winter sports site. The production lost is irretrievable, but the action is not irreversible. If the use changes, it is possible to resume timber production.

Irreversible: A term that describes the loss of future options. Applies primarily to the effects of use of nonrenewable resources, such as minerals or cultural resources, or to those factors, such as soil productivity that are renewable only over long periods of time.

Leaseable Minerals: Minerals acquired only by lease and generally include oil, gas, coal, oil shale, sodium, potassium, phosphate, native asphalt, solid and semi-solid bitumen, and deposits of sulfur.

Lease Stipulations: Additional specific terms and conditions that change the manner in which an operation may be conducted on a lease or modify the lease rights granted.

Lease: A Federal lease, issued under the oil and gas leasing provisions of the mineral leasing laws, which grants the exclusive right to explore for and produce oil and gas from the lease area.

Macroinvertebrates. Aquatic insects.

Management Indicator Species (MIS). Management Indicator Species (MIS) are a select group of wildlife species that can indicate change in habitat resulting from activities on the Forest. MIS species for the Manti-La Sal National Forest are elk, Mule deer, macroinvertebrates, Goshawk, Golden eagle and Abert squirrel (FLRMP). With

the exception of Abert Squirrels these species utilize the habitats found within the project area.

Mineral Leasing Laws: The Mineral Leasing Act of 1920, as amended (30 U.S.C. 181 et seq.), and the Mineral Leasing Act for Acquired Lands of 1947, as amended (30 U.S.C. 351-359).

MIS: Management Indicator Species.

Mitigation: Includes:

- (a) Avoiding the impact altogether by not taking a certain action or parts of an action.
- (b) Minimizing impacts by limiting the degree of magnitude of the action and its implementation.
- (c) Rectifying the impact of repairing, rehabilitating, or restoring the affected environment.
- (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- (e) Compensating for the impact by replacing or providing substitute resources or environments.

Multiple-use: Management of the surface and subsurface resources so that they are jointly used in the manner that will best meet the present and future needs of the public without permanent impairment of the productivity of the land or the quality of the environment.

National Environmental Policy Act of 1969 (NEPA): Public Law 91-190. Established environmental policy for the nation. Among other items, NEPA requires Federal agencies to consider environmental values in decision-making processes.

National Forest Management Act (NFMA): A law passed in 1976 as amendments to the Forest and Rangeland Renewable Resources Planning Act that requires the preparation of Regional and Forest plans and the preparation of regulations to guide that development.

National Forest System: All National Forest System lands reserved or withdrawn from the public domain of the United States; all National Forest System lands acquired through purchase, exchange, donation, or other means the National Grasslands and land use projects administered under Title III of the Bankhead-Jones Farm Tenant Act (7 U.S.C. 1010 et seq.); and other lands, waters, or interests therein which are administered by the U.S.D.A. Forest Service or are designated for administration through the U.S.D.A. Forest Service as a part of the system (16 U.S.C. 1609).

National Register of Historic Places (NRHP): A listing of architectural, historical, archaeological, and cultural sites of local, state, or national significance established by the Historic Preservation Act of 1966.

Negligible Effect or Impact: An effect or outcome that is very small in magnitude or importance and is inconsequential.

NEPA: See National Environmental Policy Act of 1969.

No Action Alternative: No action or activity would take place. Another definition is where ongoing programs described within the existing Land Management Plan continue. No decision would be made and no leases would be offered.

Nongame Species: Species of animals that are not managed as a sport hunting/fishing resource.

Noxious Weeds: Rapidly spreading plants that cause a variety of major ecological impacts to both agriculture and wild lands.

Off-Highway Vehicle (OHV): Any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, snow, ice, marsh, swampland or other natural terrain. It includes, but is not limited to, four-wheel drive or low-pressure-tire vehicles, motorcycles and related two-wheel vehicles, amphibious machines, ground-effect or air-cushion vehicles.

Operator: A lessee, exploration licensee or one conducting operations on a lease under the authority of the lessee.

Overstory: The portion of a plant community consisting of the taller plants on the site; the forest or woodland canopy.

PAOT (People at one Time): Unit of measure for recreation representing the number of people using a facility simultaneously or at the same time.

Prehistoric Site: Archaeological sites associated with American Indians and usually occurring before contact with Europeans.

Prevention of Significant Deterioration (PSD): A classification established to preserve, protect, and enhance the air quality in National Wilderness Preservation System areas in existence prior to August 1977 and other areas of National significance while ensuring economic growth can occur in a manner consistent with the preservation of existing clean air resources. Specific emission limitations and other measures, by class, are detailed in the Clean Air Act (42 U.S.C. 1875, et seq.).

Project Area: The area to be disturbed by the proposed project and adjacent lands that could be affected.

Range Allotment: A designated area of land available for livestock grazing upon which a specified number and kind of livestock may be grazed under an allotment management plan. It is the basic land unit used to facilitate management of the range resource on National Forest System lands administered by the U.S.D.A. Forest Service.

Rare Plants: A plant species, or subspecies, that is limited to a restricted geographic range or one that occurs sparsely over a wider area.

Reasonably Foreseeable Development Scenario (RFDS): The prediction of the most likely future actions in the project area that would likely result from the proposed action.

Reclamation: Returning disturbed lands to a form and productivity that will be ecologically balanced and in conformity with a predetermined land management plan.

Record of Decision (ROD): A document separate from, but associated with, an environmental impact statement that publicly and officially discloses the responsible official's decision on the proposed action.

Recreation Opportunity Spectrum (ROS): Land delineations that identify a variety of recreation experience opportunities in seven classes along a continuum from primitive to urban. Each class is defined in terms of natural resource settings, activities and experience opportunities. The six classes are: Urban, Rural, Roaded, Natural, Semiprimitive Motorized, Semiprimitive Nonmotorized, and Primitive.

Recreation Visitor Day (RVD): A unit of measure for recreation use. It represents one day of use by one person.

Reserves: Recoverable Oil and Gas deposits.

Responsible Official: Official of the Forest Service and/or Bureau of Land Management authorized to make the decisions required under the proposed action.

Restore: To bring back landscape to a former or original condition or appearance.

Revegetation: The reestablishment and development of self-sustaining plant cover. On disturbed sites, this normally requires human assistance such as seed bed preparation, reseeding, and mulching.

Riparian Ecosystem: A transition between the aquatic ecosystem and the adjacent terrestrial ecosystem; identified by soil characteristics or distinctive vegetation communities that require free or unbound water.

Riparian: Riparian areas consist of terrestrial and aquatic ecosystems, those lands in a position to directly influence water quality and water resources, whether or not free water is available. This would include all lands in the active flood channel and lands immediately upslope of stream banks. These areas may be associated with lakes, reservoirs, estuaries, potholes, marshes, streams, bogs,, wet meadows, and intermittent or permanent streams where free and unbound water is available.

Roaded, Natural (RN): A recreation opportunity classification term describing a land area that has been predominately a natural appearing environment with moderate evidence of sights and sounds of humans. Concentration of users is moderate to low. Roads of better than primitive class are usually with 0.5 mile. A broad range of motorized and nonmotorized activity opportunities are available. Management activities, including timber harvest, are present and harmonize with the natural environment.

Roadless: Refers to the absence of roads that have been constructed and maintained by mechanical means to ensure regular and continuous use.

Scoping Process: An early and open public participation process for determining particular issues to be addressed in an environmental document and for identifying the significant issues related to a proposed action.

Sensitive Species: Those plant and animal species identified by a Regional Forester for which population viability is a concern as evidenced by: (a) significant current or predicted downward trends in population numbers or density or (b) significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution.

Small Game: Birds and small mammals normally hunted or trapped.

Stipulation: A provision that modifies a standard lease right and is attached to and made a part of the lease.

Surface Management Agency: The Federal agency with jurisdiction over the surface of federally owned lands containing coal deposits, and, in the case of private surface over Federal coal, the Bureau of Land Management, except in areas designated as National Grasslands, where it means the Forest Service.

TEPS: Threatened, Endangered and Sensitive Species.

Threatened And Endangered Species: Definitions: Federal codes are defined as follows:

Endangered (E): Any species that is in danger of extinction throughout all or a significant portion of its range other than a species of the Class Insecta determined by the Secretary to constitute a pest whose protection under the ESA would present an overwhelming and overriding risk to man.

Threatened (T): Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Candidate Species (C): Status review taxa for which the USFWS currently has on file substantial information on biological vulnerability and threat(s) to support the appropriateness of proposing to list the taxa as an endangered or threatened species.

Forest Service Sensitive: Those plant and animal species identified by a Regional Forester for which population viability is a concern as evidenced by: (a) significant current or predicted downward trends in population numbers or density or (b) significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution.

Vertebrate: An animal having a spinal column.

Visual Quality Objectives (VQO): Based upon variety class, sensitivity level, and distance zone determinations. Each objective describes a different level of acceptable alteration based on aesthetic importance. The degree of alteration is based on contrast with the surrounding landscape.

Preservation: In general, human activities are not detectable to the visitor.

Retention: Human activities are not evident to the casual Forest visitor.

Partial Retention: Human activities may be evident, but must remain subordinate to the characteristic landscape.

Modification: Human activity may dominate the characteristic landscape, but must, at the same time, use naturally established form, line, color, and texture. It should appear as a natural occurrence when viewed in middleground or background.

Maximum Modification: Human activity may dominate the characteristic landscape but should appear as a natural occurrence when viewed as background.

Visual Resource: The composite of basic terrain, geologic features, water features, vegetative patterns, and land use effects that typify a land unit and influence the visual appeal of the unit.

Wetlands: Lands where saturation with water is the primary factor determining the nature of soil development and the kinds of animal and plant communities living under or on its surface.

**APPENDIX A
PAST, PRESENT, AND REASONABLY FORSEEABLE
FUTURE ACTIONS**

Past Actions	Implementation Dates (Begin and End)	Residual Effects
I. Minerals		
<p>Coal Mining. <u>Tip Top Mine.</u> On the south slope of Crandall Canyon (SE 1/4 NE 1/4, Sec 5, T 16 S, R 7 E, SLM). The Crandall Canyon Road (FDR 50248), now on the Transportation System, was most likely originally constructed for the mine and coal exploration. The Road is now a Forest Development Road from the SR 31 intersection to just above the Crandall Canyon Mine. The old road that continued up the canyon from the mine (now Forest Development Trail 390) was most likely originally build as a coal exploration/drilling road.</p>	1939-1956	Very small mine. Naturally revegetated. Disturbed area not evident. No residual effects.
<p><u>Crandall Canyon Mine.</u> In Crandall Canyon (S 1/2 NW 1/4, Sec 5, T 16 S, R 7 E, SLM) - The mine was constructed in 1980 and is still an active mine. The mine has disturbed approximately 5.4 acres, not including the Crandall Canyon Road. The Crandall Canyon Road was widened to two lanes and asphalt paved to accommodate coal haul traffic.</p>	1980 - Present	The mine operates 24 hours a day, every day at differing intensities depending on production shifts. 13.6 acres are permitted for disturbance; however, only 9.9 acres have actually been disturbed: 8.2 acres on Genwal fee and 5.4 acres of vegetation/habitat has been removed for operations on the Forest. The physical activity and operations/haul traffic on the Crandall Canyon and Huntington Canyon roads impacts other resources and uses. Approximately 3,900 acres of NFS, State, and private lands included in permit area. Subsidence of mined lands has occurred. No subsidence of Crandall Creek is permitted.
<p><u>Old Leamaster Mine.</u> In Mill Fork Canyon (NE 1/4 SE 1/4 SW 1/4, Sec 16, T 16 S, R 7 E, SLM). The original Mill Fork Road, now a Forest Development Road (FDR 50245), was probably constructed prior to 1943 for access to the mine and for coal exploration. The Forest Development Trail that extends several miles up the canyon, beyond the</p>	1943 - 1964	The old mine was reopened in 1976 as the Huntington Canyon #4 Mine (see below). Most of the original disturbed area was re-disturbed and expanded for the new surface facilities.

County road runs up Deer Creek Canyon from the intersection with Hwy. 31 to the mine, a distance of approximately 3 miles. Road width averages 20 feet. Most of the drainages in the vicinity of the mine are culverted.		
Coal Exploration. Genwal has drilled 3 coal exploration borings from the surface and 12 from within Crandall Canyon Mine.	All drilled prior to mid-1990's.	All have been reclaimed and the reclamation bonds have been released. There are no residual effects.
Gas Exploration/Production. <u>Flat Canyon /Indian Creek Gas Field (East Mountain Unit).</u> Several wells produced gas but have been plugged. Meridian Oil drilled 6 wells since the early 1980's which are producing natural gas. There is a pipeline on the surface and a compressor station.	1950 – 1970 1982 – Present	These wells have been abandoned and have been revegetated. They are visible only from related slope changes. Approximately 6 acres (1 acre/well) remains disturbed for gas production. Negligible residual effects are due to drainage and sediment control. Five of the wells are visible from Cottonwood Canyon Road.

II. Recreation		
Flat water fisheries improvements to Cleveland Reservoir, Huntington Reservoir and Potters Ponds	1995-2002	Improved access, containment of motorized use, and designation of campsites has tended to improve soil, water, and vegetative components associated with these sites.
<u>Huntington Canyon Restoration Project.</u> Improvement of over 60 sites and closure and rehabilitation of over 50 sites located along the U31 Highway corridor.	1998-99	Improved access, containment of motorized use, designation of campsites, and streamside restoration activities have all combined to improve soil, water, and vegetative components along the Huntington Canyon corridor. Some displacement of dispersed camping to Lake Canyon area.

III. Range/Vegetation		
Grazing by sheep and/or cattle started shortly after settlement of Emery County.	1870's	Agriculture remains a basic industry in the county.
Rangeland improvements included installation of water troughs, to improve livestock distribution, and drift fences to better control cattle.	Early 1900's	Water troughs made water more available from small springs and seeps. Short fences kept cattle from drifting too far up canyons.

Initiation of improved grazing systems.	1950's and 60's	More formal management prescriptions were established based on evolving scientific information.
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IV. Timber		
<u>Spoon Creek Timber Sale.</u> Four units sold, totaling 413 acres; to remove decadent aspen and promote aspen regeneration.	1993-2000	The first two units have been certified as meeting the objective of 5000 trees per acre and a height of 5 feet. Units 3 and 4 are regenerating well and should be certified in 2005 and 2007.

V. Surface Structures		
Power Lines. <u>Utah Power 345 KV line.</u> Crosses the southwest corner of the Mill Fork Tract (Energy West Mining Co.) in Section 22, T16S, R6E.	1977-Present	Access roads have been reclaimed. Powerline is visually prominent.
<u>Genwal Mine 25 KV line.</u> Carries electricity from Mill Fork Canyon over Mill Fork Ridge and down into Crandall Canyon to power the Genwal Mine.	1989-Present	Access roads have been reclaimed. Powerline is visually prominent.

Present Actions	Implementation Dates (Begin and End)	Residual Effects
I. Minerals		
<p>Coal Mining. <u>Crandall Canyon Mine.</u> Portal and entry development is currently underway on fee property in the South Crandall Lease.</p>	1980 – Present	The mine is in continuous operation. The impacts will continue until the mine is reclaimed.
<p><u>Deer Creek Mine.</u> Entry development in the Mill Fork Tract is currently underway. Access to the Mill Fork Tract is currently provided through the Deer Creek Mine.</p>	Present	The mine is in continuous operation. The impacts will continue until the mine is reclaimed.

II. Recreation		
<p>Ongoing recreation use on East Mountain.</p>	Present	Dispersed recreation affects soils and vegetation. These impacts are similar to what occurs elsewhere on the forest.
<p><u>Lake Canyon Trail System Project.</u> Construction of approximately 9.5 miles of new multiple use trails and closure and reclamation of approximately 7 miles of user created trails.</p>	Present	Soils and vegetative conditions improved. Impacts to riparian areas minimized. Miller Flat Road improved to accommodate increased traffic volumes.
<p><u>Indian Creek Campground Reconstruction Project.</u> New roads, water system, bathrooms, and other improvements are currently being made.</p>	Present	Increased use of facilities once improvements are in place. Increased visitor satisfaction.

III. Range/Vegetation		
<p>Livestock reductions and consolidation of allotments on sheep allotments: Crandall Ridge and Crandall Canyon. A portion of the Crandall Ridge Allotment was moved into the Trail Mountain cattle allotment.</p> <p>Permitted livestock within the area: Gentry Mt. Allotment 1440 cattle, 6/27-9/30. Trail Mt. Allotment 901 cattle, 6/21-9/20. East Mt. Allotment 341 cattle, 6/21-9/10. Crandall Canyon and</p>	2001	Due to changes in sheep operators and concerns for resource conditions, livestock reductions and consolidation of allotments was initiated. Allotment boundaries have been adjusted and permits modified. This will reduce/eliminate grazing impacts on steep head walls in the head of Crandall Canyon mostly on SITLA lands. Monitoring of vegetative and soil trends continue.

Crandall Ridge Allotment, approximately 900 sheep, 7/1-9/30. Horse Creek Allotment 666 sheep, 7/1-9/30.		
Range improvement inventory.	1998 – 2001	Prescribed burning of aspen and sagebrush stands on East Mountain were completed to maintain healthy plant communities.
Range improvement inventory.	2002	Many water troughs needed replacement or heavy maintenance. Drift fences are still functioning as intended.

IV. Timber		
No timber sales are presently occurring.	Present	No effects.

V. Surface Structures		
Power Lines. None are under construction.	Present	No effects.

		would require an additional 3-5 years.
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II. Recreation		
Improving FR 50244 by widening and gravelling.	2005	Improved access to East Mountain would increase recreation use over time. Increased land disturbance and instances of off-road travel are probable. Impacts to wildlife habitat and to soils and vegetation are anticipated.
Improvement and maintenance of nearby existing developed recreation sites such as Flat Canyon Campground, sites in Huntington Canyon, and Indian Creek Campground	Indefinite	Increased use of facilities due to population growth and demand for recreation opportunities. Increased human activity in the area year-round.
Improvement of existing cabins and construction of new cabins on private lands. Potential for construction of new private roads for access to these facilities.	Indefinite	Increased land disturbance, sediment production, and year-round human presence and activity.

III. Range/Vegetation		
<u>SITLA Access Route on East Mountain.</u> Implementation of the project would involve road and well site construction on the Forest and removal of timber outside the Forest boundaries.	2005	An area may need to be closed to grazing unless sheep and cattle can be kept away from areas where new vegetation is being established. It is likely that grazing will need to be withdrawn on most of the SITLA lands during road construction, high logging activity, and while disturbed sites are reclaimed. This would result in an estimated reduction of 159 AUM's. During implementation or recovery periods, transitory range would be recognized and utilized, allowing a temporary increase in grazing.
Rangeland monitoring and coordination	Indefinite	The proposed roads and drill pad construction sites do not have any noxious weeds at this time. Occasionally musk thistle (<i>Carduus nutans</i>) is found in the project area. Sites within 2 miles of this project have dense stands of musk thistle. During the administration of project-related activities, the implementation of noxious weed BMPs would be required in order to prevent the introduction and spread of noxious weeds. New range improvements may be

of grazing with other resource activities.		initiated due to continued monitoring that would include water troughs, and prescribe burning. Through adaptive management new grazing systems may be implemented as scientific information becomes available. The area within the proposed lease area would remain unsuitable for livestock grazing due to steep slopes.
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IV. Timber		
SITLA timber harvest on State-managed land could impact deer and elk by removing or degrading cover habitat on State-managed land on East Mountain.	2005	The timber sale has the potential to affect the following types and amounts of habitat plus whatever is needed for skidding and loading: 161 acres of aspen/mixed conifer, 123 acres of spruce/fir, and 147 acres of mixed conifer/Douglas fir. Increased traffic during timber harvest would also cause increased disturbance in potentially suitable deer and elk habitat along travel routes. Beneficial effects may include reducing conifer encroachment in aspen stands, and reducing fuels build up in conifer stands.

V. Surface Structures		
Power Lines. No new power lines are currently planned.		No effects.

APPENDIX B
FS AND BLM COAL LEASE STIPULATIONS
FEDERAL COAL LEASE UTU-68082

1. The Regulatory Authority shall mean the State Regulatory Authority pursuant to a cooperative agreement approved under 30 CFR Part 745 or in the absence of a cooperative agreement, Office of Surface Mining. The authorized officer shall mean the State Director, Bureau of Land Management. The authorized officer of the Surface Management Agency shall mean the Forest Supervisor, Forest Service. Surface Management Agency for private surface is the Bureau of Land Management. For adjoining private lands with Federal minerals and which primarily involve National Forest Service issues, the Forest Service will have the lead for environmental analysis and, when necessary, documentation in an environmental assessment or environmental impact statement.

2. The authorized officers, of the Bureau of Land Management, Office of Surface Mining (Regulatory Authority), and the Surface Management Agency (Forest Service) respectively, shall coordinate, as practical, regulation of mining operations and associated activities on the lease area.

3. In accordance with Sec. 523(b) of the "Surface Mining Control and Reclamation Act of 1977," surface mining and reclamation operations conducted on this lease are to conform with the requirements of this Act and are subject to compliance with the Office of Surface Mining Regulations, or as applicable, a Utah program equivalent approved under cooperative agreement in accordance with Sec. 523(c). The United States Government does not warrant that the entire tract will be susceptible to mining.

4. Federal Regulations 43 CFR 3400 pertaining to Coal Management make provisions for the Surface Management Agency, the surface of which is under the jurisdiction of any Federal agency other than the Department of Interior, to consent to leasing and to prescribe conditions to insure the use and protection of the lands. All or part of this lease contain lands the surface of which are managed by the United States Department of Agriculture, Forest Service Manti-La Sal National Forest.

The following stipulations pertain to the lessee responsibility for mining operations on the lease area and on adjacent areas as may be specifically designated on the National Forest System lands.

5. Before undertaking activities that may disturb the surface of previously undisturbed leased lands, the lessee may be required to conduct a cultural resource inventory and a paleontological appraisal of the areas to be disturbed. These studies shall be conducted by qualified professional cultural resource specialists or qualified paleontologists, as appropriate, and a report prepared itemizing the findings. A plan will then be submitted making recommendations for the protection of, or measures to be taken to mitigate impacts for identified cultural or paleontological resources.

If cultural resources or paleontological remains (fossils) of significant scientific interest are discovered during operations under this lease, the lessee prior to disturbance shall, immediately bring them to the attention of the appropriate authorities. Paleontological remains of significant scientific interest do not include leaves, ferns, or dinosaur tracks commonly encountered during underground mining operations.

The cost of conducting the inventory, preparing reports, and carrying out mitigating measures shall be borne by the lessee.

6. If there is reason to believe that threatened or endangered (T&E) species of plants or animals, or migratory bird species of high Federal interest occur in the area the lessee shall be required to conduct an intensive field inventory of the area to be disturbed and/or impacted. The inventory shall be conducted by a qualified specialist and a report of findings will be prepared. A plan will be prepared making recommendations for the protection of these species or action necessary to mitigate the disturbance.

The cost of conducting the inventory, preparing reports, and carrying out mitigating measures shall be borne by the lessee.

7. The lessee shall be required to perform a study to secure adequate baseline data to quantify the existing surface resources on and adjacent to the lease area. Existing data may be used if such data is adequate for the intended purposes. The study shall be adequate to locate, quantify, and demonstrate the inter-relationship of the geology, topography, surface hydrology, vegetation, and wildlife. Baseline data will be established so that future programs of observation can be incorporated at regular intervals for comparison.

8. Powerlines used in conjunction with the mining of coal from this lease shall be constructed so as to provide adequate protection for raptors and other large birds. When feasible, powerlines will be located at least 100 yards from public roads.

9. The limited area available for mine facilities at the coal outcrop, steep topography, adverse winter weather, and physical limitations on the size and design of the access road, are factors which will determine the ultimate size of the surface area utilized for the mine. A site specific environmental analysis will be prepared for each new mine site development and for major modifications to existing developments to examine alternatives and mitigate conflicts.

10. Consideration will be given to site selection to reduce adverse visual impacts. Where alternative sites are available, and each alternative is technically feasible, the alternative involving the least damage to the scenery and other resources shall be selected. Permanent structures and facilities will be designed, and screening techniques employed, to reduce visual impacts, and where possible achieve a final landscape compatible with the natural surroundings. The creation of unusual, objectionable, or unnatural land forms and vegetative landscape features will be avoided.

11. The lessee shall be required to establish a monitoring system to locate, measure, and quantify the progressive and final effects of underground mining activities on the topographic surface, underground and surface hydrology and vegetation. The monitoring system shall utilize techniques which will provide a continuing record of change over time and an analytical method for location and measurement of a number of points over the lease area. The monitoring shall incorporate and be an extension of the baseline data.
12. The lessee shall provide for the suppression and control of fugitive dust on haul roads and at coal handling and storage facilities. On Forest Development Roads (FDR), lessees may perform their share of road maintenance by a commensurate share agreement if a significant degree of traffic is generated that is not related to their activities.
13. 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, or (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.
14. In order to avoid surface disturbance on steep canyon slopes and to preclude the need for surface access, all surface breakouts for ventilation tunnels shall be constructed from inside the mine, except at specifically approved locations.
15. If removal of timber is required for clearing of construction sites, etc., such timber shall be removed in accordance with the regulations of the surface management agency.
16. The coal contained within, and authorized for mining under this lease, shall be extracted only by underground mining methods.
17. Existing Forest Service owned or permitted surface improvements will need to be protected, restored, or replaced to provide for the continuance of current land uses.
18. In order to protect big game wintering areas, elk calving and deer fawning areas, sagegrouse strutting areas, and other critical wildlife habitat and/or activities, specific surface uses outside the mine development area may be curtailed during specific periods of the year.
19. Support facilities, structures, equipment, and similar developments will be removed from the lease area within 2 years after the final termination of use of such facilities. This provision shall apply unless the requirement of Section 10 of the lease form is applicable. Disturbed areas and those areas previously occupied by such facilities will be stabilized and rehabilitated, drainages reestablished, and the areas returned to a pre-mining land use.
20. The lessee at the conclusion of the mining operations, or at other times as surface disturbance related to mining may occur, will replace all damaged, disturbed, or displaced corner monuments (section corners, quarter corners, etc.) their accessories and appendages

(witness trees, bearing trees, etc.) or restore them to their original condition and location, or at other locations that meet the requirements of the rectangular surveying system. This work shall be conducted at the expense of the lessee, by a professional land surveyor registered in the State of Utah and to the standards and guidelines found in the manual of surveying instruction, U.S. Department of Interior.

21. The lessee at his expense will be responsible to replace any surface water identified for protection, that may be lost or adversely affected by mining operations, with water from an alternate source in sufficient quantity and quality to maintain existing riparian habitat, fishery habitat, livestock and wildlife use, or other land uses.

22. The lessee must comply with all the rules and regulations of the Secretary of Agriculture set forth at Title 36, Chapter II, of the Code of Federal Regulations governing the use and management of the National Forest System (NFS) when not inconsistent with the rights granted by the Secretary of the Interior in the lease. The Secretary of Agriculture's rules and regulations must be complied with for (1) all use and occupancy of the NFS prior to approval of a permit/operation plan by the Secretary of Interior, (2) uses of all existing improvements, such as Forest Development Roads, within and outside the area licensed, permitted or leased by the Secretary of Interior, and (3) use and occupancy of the NFS not authorized by a permit/operation plan approved by the Secretary of the Interior.

All matters related to this stipulation are to be addressed to :

Forest Supervisor
Manti-La Sal National Forest
599 West Price River Drive
Price, Utah 84501
Telephone No.: (435) 637-2817

who is the authorized representative of the Secretary of Agriculture.

23. The lessee/operator will be required to drill horizontally ahead of the advance of development workings to the west in the vicinity of the Joes Valley fault zone to locate any faults and determine if they contain significant amounts of water. If significant water is encountered, the operator will be required to take appropriate measures, subject to approval of the Bureau of Land Management and Forest Service, to prevent diverting this water into the mine workings.

24. Except at specifically approved locations, mining that would cause subsidence will not be permitted within a zone along the Joes Valley Fault determined by projecting a 22 degree angle-of-draw (from vertical) eastward from the surface expression of the Joes Valley Fault, down to the top of the coal seam to be mined.

APPENDIX C
SUPPLEMENTAL FS STIPULATION
MODIFICATION OF FEDERAL COAL LEASE UTU-68082

Stipulation #1

Except at locations specifically approved by the Authorized Officer, with concurrence of the surface management agency, full extraction mining will not be authorized where the fracture zone created by subsidence is projected to reach the surface, as calculated by 50 times the thickness of coal removed plus 50 feet.