

# MINING PLAN DECISION DOCUMENT

Canyon Fuel Company, LLC

Skyline Mine

Federal Lease UTU-67939

Carbon County, Utah



U.S. Department of the Interior  
Office of Surface Mining Reclamation and Enforcement

Prepared January 2006

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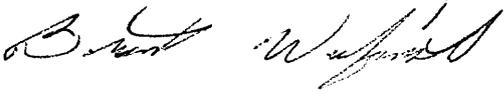
# United States Department of the Interior

OFFICE OF THE SECRETARY  
WASHINGTON, D.C. 20240

FEB 15 2006

## MEMORANDUM

To: R. M. "Johnnie" Burton  
Acting Assistant Secretary  
Land and Minerals Management

From: Brent Wahlquist, Acting Director  
Office of Surface Mining 

Subject: Recommendation for Approval, Without Special Conditions, of the Mining Plan Modification for Federal Lease UTU-67939 at Canyon Fuel Company, LLC's Skyline Mine located in Carbon County, Utah

I recommend approval for full extraction by longwall mining methods, without special conditions, of this mining plan modification. My recommendation is based on:

- (1) Canyon Fuel Company, LLC's complete permit application package (PAP);
- (2) compliance with the National Environmental Policy Act of 1969;
- (3) documentation assuring compliance with applicable requirements of other Federal laws, regulations, and executive orders;
- (4) comments and recommendations or concurrence of other Federal agencies, and the public;
- (5) the findings and recommendations of the Bureau of Land Management regarding the resource recovery and protection plan, the Federal lease requirements, and the Mineral Leasing Act; and,
- (6) the State Decision Document, Canyon Fuel Company, LLC, North Lease - UTU-67939, Full Extraction Mining, Skyline Mine, C/007/0005.

The Secretary may approve a Mining Plan for Federal leases under 30 U.S.C. §§ 207(c) and 1273(c). In accordance with 30 CFR Chapter VII, Subchapter D, I find that the proposed new mining plan will be in compliance with all applicable laws and regulations.

Attachment



IN REPLY REFER TO:

# United States Department of the Interior

OFFICE OF SURFACE MINING

Reclamation and Enforcement

P.O. Box 46667

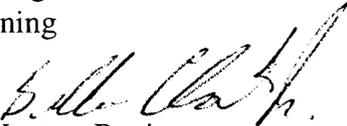
Denver, Colorado 80201-6667

UT-0003

January 11, 2006

## Memorandum

To: Brent Wahlquist, Acting Director  
Office of Surface Mining

From: *for* Allen D. Klein   
Regional Director, Western Region

Subject: Recommendation for Approval, Without Special Conditions, of the Mining Plan Modification for Federal Lease UTU-67939 at Canyon Fuel Company, LLC's Skyline Mine located in Carbon County, Utah

### I. Recommendation

I recommend approval, without special conditions, of a mining plan modification for Federal lease UTU-67939 at the Skyline Mine. This is a mining plan modification for an underground coal mine being permitted under the Federal lands program, the approved Utah State program, and the cooperative agreement.

My recommendation to approve the mining plan modification is based on:

- (1) Canyon Fuel Company, LLC's complete permit application package (PAP);
- (2) compliance with the National Environmental Policy Act of 1969;
- (3) documentation assuring compliance with applicable requirements of other Federal laws, regulations, and executive orders;
- (4) comments and recommendations or concurrence of other Federal agencies, and the public;
- (5) the findings and recommendations of the Bureau of Land Management regarding the resource recovery and protection plan, the Federal lease requirements, and the Mineral Leasing Act, and;
- (6) the Utah Department of Natural Resources, Division of Oil, Gas and Mining (UT-DOGM) State Decision Document, Canyon Fuel Company, LLC, North Lease - UTU-67939, Full Extraction Mining, Skyline Mine, C/007/0005, and the Utah State program.

If you concur with this recommendation, please sign the attached memorandum to the Assistant Secretary, Land and Minerals Management.

## II. Background

The Skyline underground coal mine is located in Carbon County, Utah. The mining plan for Federal leases U-020305, U-044076, U-0142235, U-0147570, and U-073120 at the Skyline Mine was initially approved on June 24, 1980. Since the June 24, 1980 approval, there has been one mining plan modification for the Skyline mine. That mining plan modification for new Federal lease UTU-67939 (North lease) was approved on December 23, 2002 for development mining only .

The mine commenced operation in 1981 and employed 165 people during full production. The mining operations used a combination of room and pillar and longwall mining methods. The average production rate was approximately 3.0 million tons per year from the Upper O'Connor, Lower O'Connor "A" and Lower O'Connor "B" seams.

In May 2004, however, the mine went idle due to geological conditions and water infiltration. Coal production fell to zero (0) and the work force was reduced to seventeen (17). The Skyline mine, however, continued to ship previously mined coal from its load out. In February 2005, the Skyline mine began development mining in the North lease with a work force of 150 at a production rate of 0.21 million tons per year. The life of the currently approved mining operations within the approved permit area is estimated to be approximately five (5) years.

The State's current permit area covers 10,374 acres.

Approximately 79 surface acres are disturbed within the State's permit area.

A total of 10,218 acres of Federal coal exist within the State's current permit area.

A total of 20 million tons of Federal coal exist within the current permit area.

A total of 9,736 acres of Federal surface land exist within the State's current permit area.

The post mining land use within the currently approved mining plan area is rangeland and wildlife habitat.

### III. The Proposed Action

This mining plan action consists of a mining plan modification for Federal lease UTU-67939. Specifically, the mining plan action proposed by Canyon Fuel Company, LLC consists of:

full extraction by longwall mining methods in the Lower O'Connor "A" coal seam, in the North Lease Tract, Federal coal lease UTU-67939, within the area covered by Utah State permit C/007/0005, in;

Township 12 South, Range 6 East SL Meridian Utah

Section 26, S $\frac{1}{2}$ SE $\frac{1}{4}$ , SE $\frac{1}{4}$ SW  $\frac{1}{4}$ ;  
Section 34, Lots 1, 2, 3, and 4, SE $\frac{1}{4}$ NW $\frac{1}{4}$ , E $\frac{1}{2}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ , N $\frac{1}{2}$ S $\frac{1}{2}$ ;  
Section 35, All.

Township 13 South, Range 6 East SL Meridian Utah

Section 2, All;  
Section 3, All;  
Section 10, Lots 1, and 2, NE $\frac{1}{4}$ , E $\frac{1}{2}$ NW $\frac{1}{4}$ ;  
Section 11, N $\frac{1}{2}$ , N $\frac{1}{2}$ S $\frac{1}{2}$ .

The life of the mining operations is expected to continue for ten (10) years under Utah Permit C/007/0005 and this proposed mining plan modification.

The average production rate will increase from its current 0.21 million tons per year to 3 million tons per year from the Lower O'Connor "A" coal seam. The maximum production rate of 5 million tons per year would not change.

The workforce will increase to 165 people during full production.

The approved State permit area would not increase from its present 10,374 acres.

Surface disturbance within the approved State permit area will not increase from its present 79 acres.

This mining plan modification will add 2,011 acres for full extraction by longwall mining of Federal coal to the approved mining plan area shown on the map included with this decision document.

Approval of this mining plan modification will authorize mining of an additional 9 million tons of recoverable Federal coal.

No new acres of Federal surface lands will be included in the mining plan area as a result

of this action.

The post mining land use within the permit and mining plan area will not change.

The UT-DOGM has placed four (4) Special Conditions to this permitting action. An explanation of each stipulation and the requirements for their resolution can be found in the State Decision Document made a part of this Mining Plan Decision Document.

Canyon Fuel Company, LLC's proposal does not require any additional special conditions to comply with Federal laws.

#### IV. Review Process

The UT-DOGM reviewed the PAP under the Utah State program, the Federal lands program (30 CFR Chapter VII, Subchapter D), and the Utah cooperative agreement (30 CFR § 944.30). Pursuant to the Utah State program and the cooperative agreement, UT-DOGM approved the permit revision on December 2, 2005.

The Office of Surface Mining Reclamation and Enforcement (OSM) has consulted with other Federal agencies for compliance with the requirements of applicable Federal laws. Their comments and/or concurrences are included in the decision document.

The Bureau of Land Management (BLM) reviewed the Resource Recovery and Protection Plan for compliance with the Mineral Leasing Act of 1920, as amended, and 43 CFR Part 3480. The BLM recommended approval of the new mining plan in a memorandum dated October 26, 2005.

In accordance with the September 24, 1996, Biological Opinion and Conference Report from the U.S. Fish and Wildlife Service (USFWS) to OSM, the UT-DOGM has sought comments from the USFWS on threatened and endangered species and has incorporated the necessary reporting requirements into the UT-DOGM State Decision Document, Canyon Fuel Company, LLC, North Lease, Skyline Mine, C/007/0005-SR02I. The USFWS and the UT-DOGM did not develop or recommend any species-specific protective measures, as indicated in the USFWS letter dated November 25, 2002. This concurrence covered the entire Federal lease UTU-67939 of which only a part was approved in the December 23, 2002, Mining Plan Modification approval. Since this concurrence covered the entire Federal lease and conditions have not changed, reconsultation was not necessary.

The State Historic Preservation Office concurred with the proposed mining plan in an e-mail dated November 15, 2002. This concurrence covered the entire Federal lease UTU-67939 of which only a part was approved in the December 23, 2002, Mining Plan Modification approval. Since this concurrence covered the entire Federal lease and conditions have not changed, reconsultation was not necessary.

The proposed area of mining plan approval is not unsuitable for mining according to section 522(b) of SMCRA.

The mining plan modification area is located on Federal lands west of the 100th meridian within the boundaries of the Manti - La Sal National Forest. However, the Secretary of Agriculture finds that these lands do not have significant forest cover and that this surface coal mining operation complies with the Multiple-Use Sustained Yield Act of 1960 (16 U.S.C. §§ 528-531), the Federal Coal Leasing Amendments Act of 1976 (Pub. L. 94-377, 30 U.S.C. 201 *et seq.*), the National Forest Management Act of 1976 (90 Stat. 2949), and the provisions of SMCRA. Based on OSM's analysis and on the concurrence of the U.S. Forest Service in its letter dated December 2, 2005, the Skyline Mine will not be incompatible with recreational, timber, economic, or other values of the Manti - La Sal National Forest.

I have determined that approval of this mining plan modification will not have a significant impact on the quality of the human environment. The environmental analysis prepared by U. S. Forest Service and Bureau of Land Management entitled *Coal Lease Application UTU-67939 Winter Quarters Tract* describes the impacts that may result from approval of this mining plan modification and its alternatives. The FONSI and supporting environmental analysis are included in this decision document.

OSM's review of the proposed action did not identify any issues that required resolution via the addition of special conditions to the mining plan approval.

Publication of a notice in the *Sun Advocate* newspaper notified the public of the availability of the administratively complete PAP for review. The last publication date was December 9, 2004. Two public comments were received however, neither requested an informal conference.

The UT-DOGM determined that a bond for \$5,076,000 is adequate for the Utah Permit C/007/0005 associated with this new mining plan. The bond is payable to the State and the United States.

A chronology of events related to the processing of the PAP and this mining plan decision is included with the decision document. The information in the PAP, and other information identified in the decision document, has been reviewed by UT-DOGM staff in coordination with the OSM Federal Lands State Coordinator.

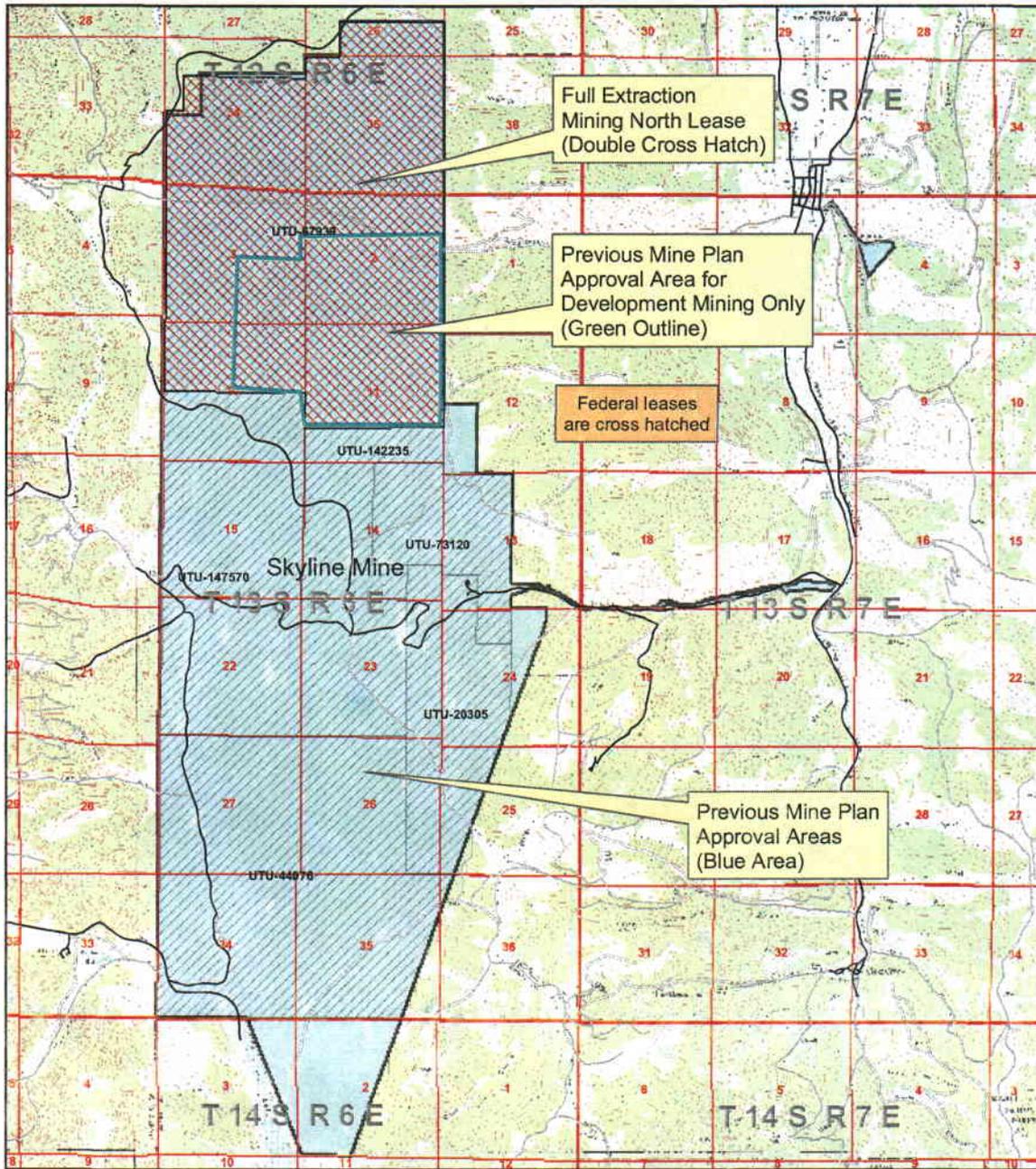
OSM's administrative record of this mining plan modification consists of the following:

- the PAP submitted by Canyon Fuel Company, LLC and updated through November 22, 2002;
- UT-DOGM's State Decision Document, Canyon Fuel Company, LLC, North Lease - UTU-67939, Full Extraction Mining, Skyline Mine, C/007/0005,

provided to OSM under the cooperative agreement;

- the Environmental Assessment entitled *Coal Lease Application UTU- 67939 Winter Quarters Tract*;
- the FONSI prepared by OSM of the proposed action and alternatives;
- other documents prepared by UT-DOGGM; and,
- correspondence developed during the review of the PAP.

#### Attachments

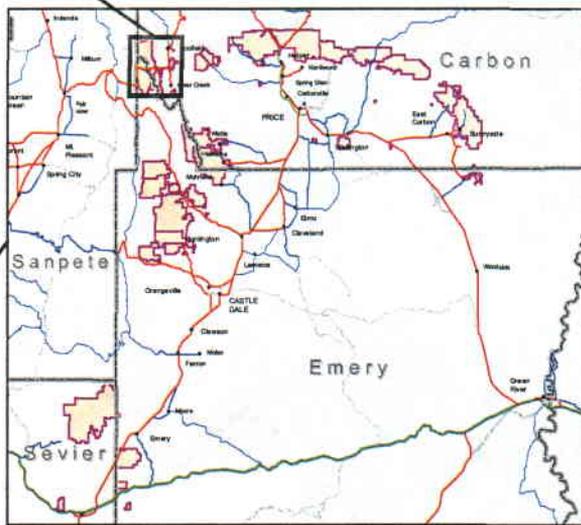
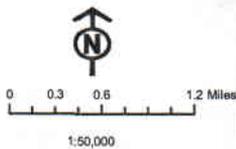


## Skyline Mine Mining Plan Approval Area

ACT0070005  
Carbon & Emery County, Utah  
Oct. 2005

Township 13 South Range 6 & 7 East  
Township 14 South Range 6 & 7 East

File: N:\gis\coal\coalareamaps\C0070005Fed.pdf



Locator Map

## CHRONOLOGY

Skyline Mine  
Federal Lease UTU-67939  
Mining Plan Decision Document

DATE	EVENT
November 15, 2002*	The State Historic Preservation Office provided its comments on the mining plan.
November 25, 2002*	The U.S. Fish and Wildlife Service provided its final consultation comments on the mining plan.
July 1, 2004	Canyon Fuel Company, LLC submitted the permit application package (PAP) under the approved Utah State Program to the Utah Division of Oil, Gas, and Minerals (UT-DOGGM) for a permit revision for the Skyline Mine.
August 25, 2004	The Office of Surface Mining Reclamation and Enforcement (OSM) received the PAP.
October 29, 2004	UT-DOGGM determined that the PAP was administratively complete for public review and comment.
December 9, 2004	Canyon Fuel Company, LLC published in the <i>Sun Advocate</i> the last consecutive notice of intent to add the North Lease Tract to the Skyline mine.
October 26, 2005	The Bureau of Land Management provided its findings and recommendations on the approval of the mining plan, with respect to the Resource Recovery and Protection Plan.
December 2, 2005	The Federal land management agency, U.S. Forest Service, provided its concurrence with the approval of the mining plan with respect to the management of Federally owned surface lands under their control.
December 2, 2005	UT-DOGGM approved the PAP.
January 11, 2006	OSM's Western Region recommended to the Director, OSM, that the mining plan action be approved.

\* These approvals and concurrences covered the entire Federal lease U-67939 of which only a part was approved in the December 23, 2002 Mining Plan Modification approval. Since these approvals and concurrences covered the entire Federal lease and conditions have not changed, reconsultation is not necessary.

U.S. DEPARTMENT OF THE INTERIOR  
OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT  
FINDING OF NO SIGNIFICANT IMPACT  
FOR  
Skyline Mine  
Federal Coal Lease UTU-67939  
Mining Plan Decision Document

1. Introduction

Canyon Fuel Company, LLC submitted a permit application package (PAP) for a permit revision for the Skyline Mine to the Utah Department of Natural Resources, Division of Oil, Gas, and Mining (UT-DOG M). The PAP proposed extending underground mining operations into approximately 3,291 acres of Federal lease UTU-67939. Under the Mineral Leasing Act of 1920, the Assistant Secretary, Land and Minerals Management, must approve, approve with conditions, or disapprove the new mining plan for Federal lease COC-61209. Pursuant to 30 CFR Part 746, the Office of Surface Mining (OSM) is recommending approval of the mining plan action without special conditions.

2. Statement of Environmental Significance of the Proposed Action

The undersigned person has determined that the above-named proposed action would not have a significant impact on the quality of the human environment under section 102(2)(C) of the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. 4332(2)(C), and therefore, an Environmental Impact Statement is not required.

C. Reasons

This finding of no significant impact is based on the attached U. S. Forest Service and Bureau of Land Management prepared Environmental Assessment entitled *Coal Lease Application UTU-67939 Winter Quarters Tract*, which has been independently evaluated by OSM and determined to assess the environmental impacts of the proposed action adequately and accurately and to provide sufficient evidence and analysis for this finding of no significant impact. OSM takes full responsibility for the accuracy, scope, and content of the attached environmental assessment.

  
Chief, Northwest Branch

Dec 9, 2005  
Date

ENVIRONMENTAL ASSESSMENT

COAL LEASE APPLICATION UTU-67939  
WINTER QUARTERS TRACT

USDA, FOREST SERVICE, MANTI-LA SAL NATIONAL FOREST  
USDI, BUREAU OF LAND MANAGEMENT, MOAB DISTRICT  
CARBON COUNTY, UTAH

July, 1995

Responsible Officials:

Janette S. Kaiser, Forest Supervisor  
Manti-La Sal National Forest  
USDA, Forest Service  
599 West Price River Drive  
Price, Utah 84501

Mat Millenbach, State Director  
Utah State Office  
USDI, Bureau of Land Management  
324 South State, Suite 301  
Salt Lake City, Utah 84111-2303

Cooperating Agency:

USDI, Office of Surface Mining Reclamation  
and Enforcement  
Brooks Tower, 2nd Floor  
1020 15th Street  
Denver, Colorado 80202

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## I. PURPOSE AND NEED

### A. Proposed Action

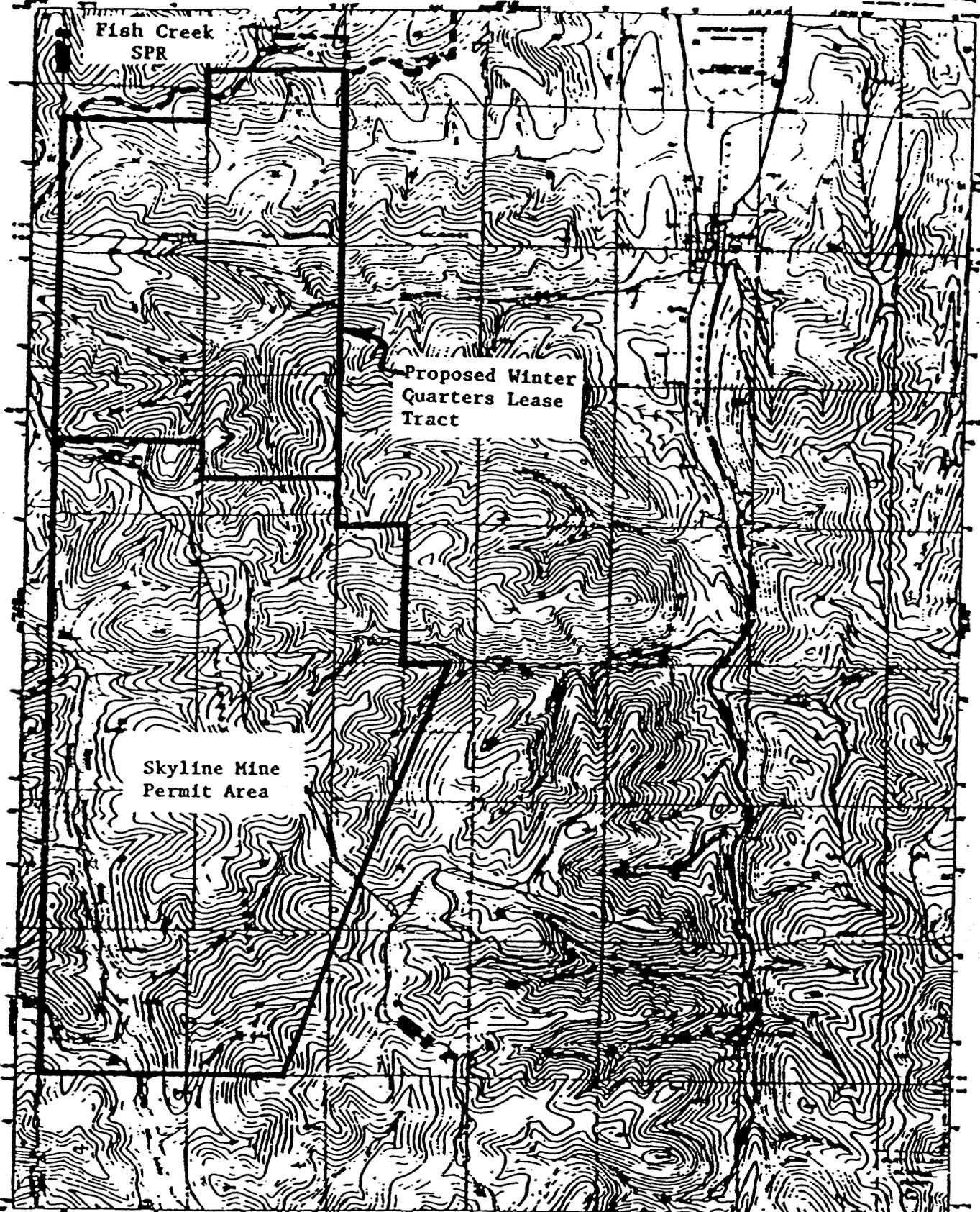
On January 10, 1991, Coastal States Energy Company filed Coal Lease Application UTU-67939 with the Bureau of Land Management (BLM), Utah State Office, to lease Federal coal lands in the Winter Quarters Canyon area. This application is for securing additional coal reserves adjacent to Coastal's Skyline Mine, located approximately 23 miles northwest of Price, Utah, on the Price Ranger District of the Manti-La Sal National Forest (see Maps 1 and 2). Coastal has indicated a need for additional coal reserves to provide a long-term supply of coal and to prevent the loss of mineable reserves in the area.

The proposed lease tract lies within the Pleasant Valley - Fish Creek Coal Multiple-Use Evaluation Area. The Manti-La Sal National Forest Land and Resource Management Plan (LRMP) has determined that this area is available for further consideration for coal leasing. The tract will be evaluated under the Lease-by-Application (LBA) process adopted by the Uinta-Southwestern Utah Coal Region (43 CFR 3425). The first step in the process was to complete tract delineation. Delineation was completed on May 7, 1993. The Tract Delineation Report is attached as Appendix A. The next step in the LBA process was to determine whether or not there were data available to meet Data Adequacy Standards established by the coal region. Standards were determined to be met for the majority of the tract on August 10, 1993. The next step was to apply Unsuitability Criteria for Coal Mining that are contained in Federal Regulations at 43 CFR 3461 and conduct an environmental analysis of the proposed action. Eleven of the 20 unsuitability criteria were found by the LRMP to not be applicable. The other 9 criteria were evaluated (see Appendix B) and also found to not be applicable. This document has been prepared to satisfy analysis requirements and tiers to the Land and Resources Management Plan Final Environmental Impact Statement (FEIS), Manti-La Sal National Forest, 1986, the Manti-La Sal National Forest Land and Resource Management Plan, 1986, and the Final Environmental Impact Statement for the BLM's San Rafael Proposed Resource Management Plan, 1991.

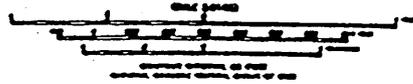
### B. Purpose and Need

The Utah State Director of the BLM is responsible to decide whether or not to offer the tract for leasing under the Mineral Leasing Act of 1920, as amended, and Federal Regulations 43 CFR 3400. The State Director may also decide to deny the application or conditionally approve one of the alternatives described in Chapter II. The Forest Supervisor, Manti-La Sal National Forest, must consent to the leasing of National Forest System Lands before BLM can offer the tract for leasing, in accordance with the Federal Coal Leasing Amendments Act of 1976. The Office of Surface Mining Reclamation and Enforcement, a cooperating agency, is the permitting agency for mining on a lease under the terms of the Surface Mining Control and Reclamation Act of 1977 and Federal Regulations 30 CFR 700.

The purposes of the proposal are to maintain Coastal's production by securing additional reserves, and to recover coal deposits that would otherwise not be recovered at this time. These coal reserves could be leased in the future and



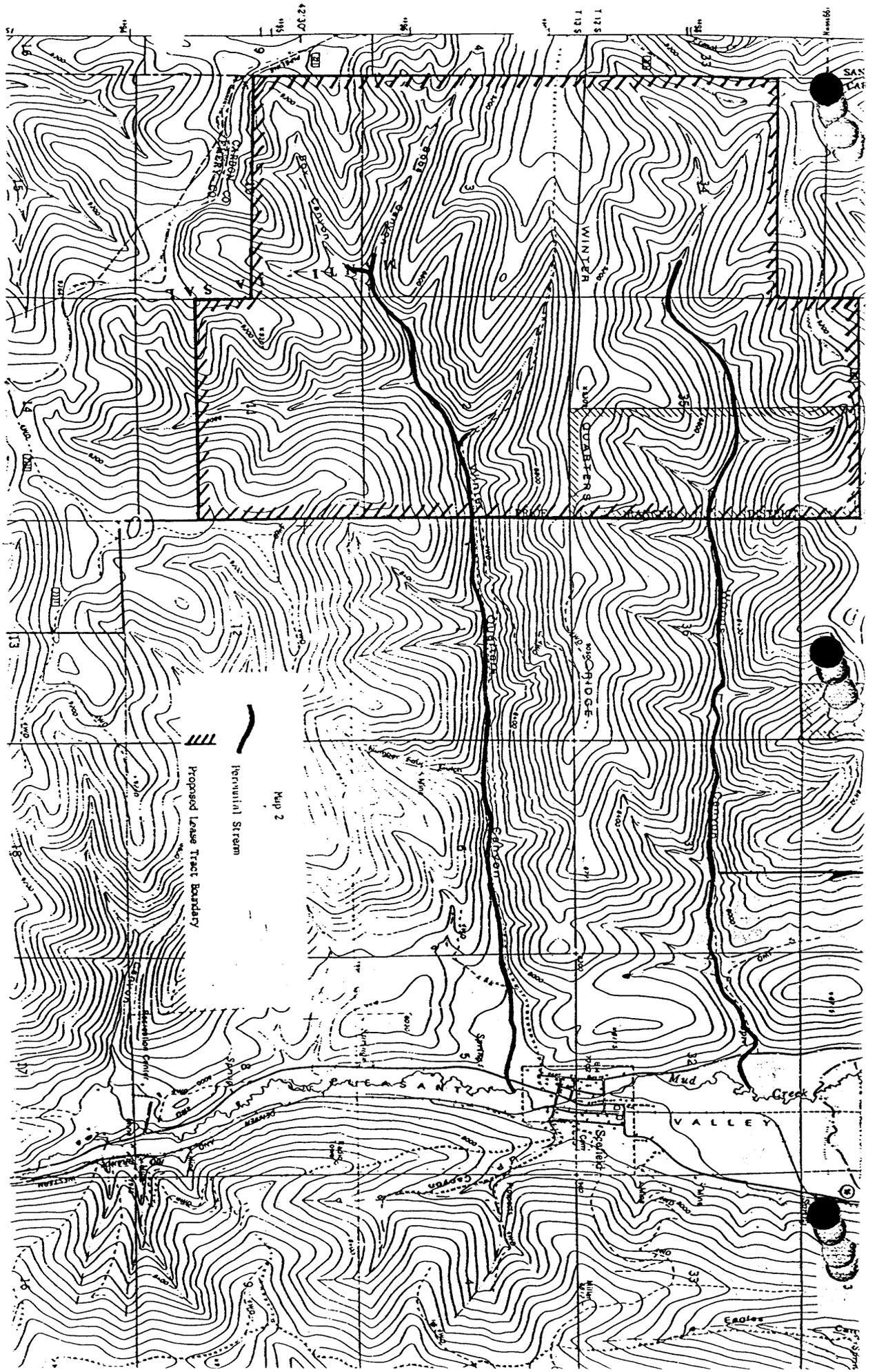
Map prepared, edited, and published by the Geomorphology  
 Branch, Utah Geological and Mineral Survey  
 Salt Lake City, Utah 84114  
 Original map by the U.S. Geological Survey  
 and the Utah Geological and Mineral Survey  
 This map is published under the authority of the  
 Director of the Utah Geological and Mineral Survey



- Legend:
- Contour lines: 10-foot interval
  - Spot heights: 10-foot interval
  - Water bodies: 10-foot interval
  - Highways: 10-foot interval
  - Roads: 10-foot interval
  - Boundaries: 10-foot interval
  - Other: 10-foot interval

U.S. GEOLOGICAL SURVEY, WASHINGTON, D.C. 20508  
 U.S. GEOLOGICAL SURVEY, SALT LAKE CITY, UTAH 84114  
 U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80202

COOPERS GAP  
 QUADRANGLE  
 UTAH  
 1:250,000 SCALE  
 1963



Map 2

Proposed Lease Tract Boundary

Perennial Stream

WINTER

WINTER

WINTER

MUD CREEK VALLEY

Eagles

Scale

1:50,000

1964

100

200

300

400

500

600

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mined through a portal which could be developed on the private land to the east.

The proposed action will conform to the overall guidance of the Manti-La Sal National Forest FEIS and LRMP and the Final Environmental Impact Statement for the BLM's San Rafael Proposed Resource Management Plan. This Environmental Assessment tiers to the decisions of both EISs, which are available for review at the Price Ranger District and the Manti-La Sal National Forest offices and the BLM San Rafael Resource Area and the Moab District offices, respectively.

### C. Project Scoping

Project scoping is an integral part of the environmental analysis process which involves the solicitation of comments from federal, state, and local agencies and interested organizations and individuals. The goal is to assure that the most accurate and current environmental information and public issues are incorporated into planning and decision-making.

Project scoping was initiated on February 14, 1994, and concluded on March 18, 1994, and included notices in local newspapers and letters to individuals who earlier had expressed interest in such proposals. Letters and records of verbal comments are contained in the project file. The following list summarizes the 17 responses received:

The Utah Wilderness Association response included several issues:

1. The proposed lease tract includes lands within the Fish Creek Semiprimitive Recreation Area (SPR). Subsidence, impacts to spring flows, or any other surface disturbance would damage the values of the SPR.
2. Because the SPR is a roadless area, an Environmental Impact Statement (EIS) should be prepared.
3. There should be a "no surface occupancy" stipulation for the SPR area.
4. There should be no further leasing until the Fish Creek-Pleasant Valley watershed water quality problems are corrected.
5. The impacts of development should be evaluated at the leasing stage.
6. They feel there is not an established need for additional coal beyond what is currently under lease, so the SPR areas should not be leased.

The Huntington-Cleveland Irrigation Company responded that mining activity is intercepting water which would have surfaced in springs, and is diverting the water out of the mine portal. This could discharge water into the Price River drainage that would have originally flowed down Huntington Creek, decreasing the water rights of the irrigation company. They do not want the area leased until an agreement on water rights can be

reached between Coastal States Energy Company and Huntington-Cleveland Irrigation Company.

Utah Fuel Company responded with the following comments:

1. They are in favor of offering the tract for lease, because if they are the successful bidder it would allow them to maintain adequate reserves for coal contracts and provide an opportunity for increased production levels.
2. Mining of the Winter Quarters Tract could be done with no adverse effects on surface resources.
3. During the NEPA process the extent of perennial streams should be identified, along with potential limitations to mining relative to the streams. These limitations should be included in the calculation of recoverable reserves.

Responses from the Southeastern Utah Association of Local Governments and the Carbon County Commission are both in favor of leasing, due to the associated economic benefits, but both want to insure that water resources in the area are preserved.

The Carbon County Recorder, Price Municipal Corporation, and the College of Eastern Utah all responded favorably to leasing, because of the economic benefits of employment and royalties to the state and county governments.

The Carbon County Roads Special Service District favors leasing for the economic benefits to the area through employment and royalties to be used for constructing and maintaining roads.

The following individuals responded favorably to the lease because of the economic benefits and because it is a part of multiple-use management:

Wendell A. Koontz, Springville, Utah  
Tonya Bruno, Price, Utah  
Arthur D. Bruno, Price, Utah  
Art G. and Marge Richardson, Price, Utah  
Robert J. Wise, Springville, Utah  
George Kenzy, Spring City, Utah

Carl W. Winters of Fairview, Utah wrote in support of the leasing for the following reasons:

1. Mining is a part of multiple-use.
2. Mining access roads will open more of the area and encourage use, compensating for some of the no-access areas on other parts of the forest.
3. Job opportunities will benefit the area and encourage people to stay in the area.

George and Helen Liodakis of Price, Utah, own land east of and adjacent to the proposed lease tract. They are not opposed to leasing the tract, but do want to ensure the water resources are protected. Winter Quarters Canyon Creek crosses their land and is necessary for sheep grazing.

#### D. Issues

The issues identified by the interested parties, along with other issues identified by the ID Team, which will be evaluated in this analysis, are:

##### Socioeconomics

1. Additional coal reserves are necessary to provide a long-term supply of coal for the Skyline Mine. Remaining reserves are estimated at 60,000,000 tons at the end of 1993, or a 12 to 13 year supply at the current mining rate of approximately 5,000,000 tons per year.
2. Mining in a manner that would prevent subsidence of perennial streams, as required by Forest Service Special Stipulation #9, could prevent the mining of approximately 6,000,000 tons of coal, which could have produced approximately \$12,000,000 in royalties. However, this coal could be leased in the future and accessed through the private land to the east.
3. Under the terms of the forest LRMP, areas under perennial streams can not be subsided without prior approval. If mining is not allowed under the perennial sections of Woods Canyon and Winter Quarters Canyon Creeks, the delineated tract may not be economically mineable.
4. Areas with subsidence restrictions to protect perennial streams should be identified in the EA so they are excluded from recoverable reserve estimates.
5. Mining of the tract would provide long-term employment and economic benefits from royalty payments to federal, state, and county governments.
6. Forest LRMP guidelines allow for denying new coal leases where a need for additional coal can not be demonstrated. Enough coal may currently be under lease to meet the demand for several decades.
7. Coal leasing and mining could conflict with future oil and gas leasing, exploration, and development.

##### Ground and Surface Water

1. Mining and subsidence could cause changes to the ground and surface water quality and quantity. The impacts to the flow and quality of water in Woods Canyon and Winter Quarters Canyon Creeks are of specific concern.

2. Water quality and quantity in the Fish Creek-Pleasant Valley watershed and Scofield Reservoir may be affected. Elevated phosphate levels have been found in Scofield Reservoir.

3. Mining could intercept water which would have emerged in springs in the Huntington Creek drainage, but which would then be discharged into the Price River drainage.

4. Mining-induced changes to ground and surface water could cause impacts to riparian vegetation, wildlife habitat, recreation, range improvements, and visual qualities.

#### Land Stability

Mining-induced subsidence could cause impacts to the Granger Ridge roads, the Winter Quarters Trail, fences, range improvements, and survey monuments.

#### Recreation

The proposed lease tract includes approximately 40 acres of the southern portion of the Fish Creek SPR. Mining may impact the values for which the SPR was established.

#### Transportation

Future coal exploration drilling, with associated access roads, would probably be needed. These should be evaluated for cumulative impacts to the transportation system as well as recreation and wildlife.

#### Wildlife

1. Alteration of the flow or morphology of the perennial drainages could decrease habitat quality for macroinvertebrate species and trout.

2. Alteration of the flow in springs could alter watering opportunities for terrestrial wildlife species.

#### Surface Disturbance

1. There could be a need for future surface facilities, such as fan portals or breakouts, on the proposed lease tract.

2. If a company other than Coastal States Energy Company were the successful bidder, a new mine with surface facilities could be constructed on private lands to the east. This would involve additional surface disturbance of approximately 27 acres.

3. There would probably be a need for additional exploration drilling to obtain more detailed information on coal quality and quantity.

#### E. Authorizing Actions

This coal lease application was submitted and will be processed and evaluated under the following actions: Minerals Leasing Act of 1920, as amended; National Environmental Policy Act (NEPA) of 1969; Multiple-Use Sustained Yield Act of 1960; Federal Land Policy and Management Act (FLPMA) of 1976; National Forest Management Act (NFMA) of 1976; Federal Coal Leasing Amendments Act of 1976, as amended; Surface Mining Control and Reclamation Act (SMCRA) of 1977; Federal Regulations at 43 CFR 3400 and 30 CFR 700; the Manti-La Sal National Forest Land and Resource Management Plan (LRMP) and Final Environmental Impact Statement (FEIS); and the BLM's San Rafael Proposed Resource Management Plan, 1989, and Final Environmental Impact Statement, 1991.

This lease application will be processed under the procedures set forth under Federal Regulations at 43 CFR 3425, Leasing on Application.

The Surface Mining Control and Reclamation Act of 1977 gives the Office of Surface Mining Reclamation and Enforcement (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 (DOGGM) 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, pursuant to 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.

Pursuant to 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 Bureau of Land Management, 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, the National Environmental Policy Act of 1969, and other Federal laws and their attendant regulations. OSM recommends approval, approval with conditions, or disapproval of the mining plan to the Assistant Secretary, Land and Minerals Management. Before the mining plan can be approved, BLM and the surface-managing agency (in this case the Forest Service) must concur with this recommendation.

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 significant environmental harm or damage occurs.

#### F. History, Background, and Potential Mining Scenarios

Coastal States Energy Company has been operating the Skyline Mine through their wholly-owned subsidiary, Utah Fuel Company, since 1981. On January 1, 1991, they applied to lease 2,020.02 acres of unleased Federal coal lands adjacent to the Skyline Mine.

Current production from the Skyline Mine is approximately 5,000,000 tons per year, using two longwall systems and three continuous miner sections. They believe the demand for their coal will increase in the future. If Coastal acquires the proposed lease tract, they may add a third longwall system and other continuous miner sections.

There are two potential mining scenarios. If Coastal acquired the lease, they would mine the tract through their Skyline Mine facilities. If another company were the successful bidder, the mining would probably be from a new mine facility constructed on private lands to the east, probably in the approximate location of the old Winter Quarters Mine. The surface facilities would probably be about like other mines in the Wasatch Plateau, and occupy approximately 15 acres. This is assuming a room-and-pillar mining operation producing approximately 1,000,000 to 1,500,000 tons per year. Approximately 2 miles of access road would also be required, requiring approximately 12 acres. The total surface disturbance would be approximately 27 acres, and would probably be all on private land. Surface facilities would include at least two portals, bathhouse and office facilities, a conveyor system, coal storage area, and a truck loadout. The development of a new mine is not considered likely at this time due to current market conditions, relatively small total reserves for the lease tract and the fee land, and costs for mine development.

#### G. Other Activities Affecting Cumulative Impacts

If the Winter Quarters tract is leased, some surface impacts are expected to be associated with underground mining. If Coastal States Energy Company were the successful bidder, they predict the following surface disturbing activities would be necessary for mining the tract:

1. Eight coal exploration holes would be needed to evaluate coal quality and quantity. This would involve 8 drill pads of approximately 1/2 acre each and approximately 1/4 mile of access road for each hole.
2. If Coastal does not obtain the rights to the coal in the fee lands to the east, they would require one ventilation shaft. There would be no fan or mechanical/electrical facilities required on the surface.

If another company were to acquire the tract, the most logical access would be through the fee lands to the east. This would require accessing the private coal and constructing a new mine with surface facilities on private lands. Exploration drilling impacts would be expected to be approximately equal to those predicted by Coastal States Energy Company.

Forest Service activities planned in the foreseeable future for the area are:

1. A timber sale is planned for 1998 in the head of Bobs Canyon, which would involve cutting 200 to 300 thousand board feet of aspen and fir. The fir would be harvested by selective cutting, but the aspen might be harvested by patch cutting (clear cuts of less than 10 acres).
2. The foot/horse trail up Anderson Canyon between Fish Creek and Granger Ridge is scheduled for reconstruction during 1996.
3. Central Utah Telephone, Inc., applied for a right-of-way to install a fiber optic line up Winter Quarters Canyon and Winter Quarters Ridge during the summer of 1995. Due to the potential for damage of the line by mining-induced subsidence, they have dropped their application and now plan to route the line from Highway 6 down the Starvation Creek drainage to Scofield.
4. During the past year, there has been renewed interest in oil and gas exploration on the Wasatch Plateau. It could reasonably be expected that the proposed coal lease tract could also be leased for oil and gas and a well drilled. The average drill site in the area occupies approximately 2.25 acres, and the average 4.22 miles of new or upgraded access road requires approximately 25.3 acres, for a total of approximately 28 acres. If the well were dry, the drill site and new access road would be reclaimed immediately. Sections of previously existing access road that were upgraded would not be reclaimed. (The Granger Ridge road has already been upgraded for previous exploration drilling. If it were used again, the total disturbed area would probably be less than predicted). A producing well could remain in place for 30 to 40 years, until the reservoir were exhausted, and would then be reclaimed. If a discovery was made, additional wells would probably be drilled. The oil and gas reservoirs in the area are below the coal seams, so oil and gas drilling and coal mining in the same area could conflict. Such a conflict would be resolved by the BLM.

#### H. Negative Declaration

There are no prime farmlands, rangelands, or alluvial valley floors within the proposed lease area. Leasing of the tract should not result in significant impacts to cultural or paleontological resources; threatened, endangered, or sensitive plant or animal species; or floodplains. Protection of these resources is provided under the lease stipulations and Federal and State laws and regulations.

## II. DESCRIPTION OF ALTERNATIVES

### A. Alternative 1 - No Action

Under this alternative the coal lease application would be denied and the tract would not be offered for leasing.

### B. Alternative 2 - Offer for Lease with Standard Stipulations

#### 1. Description

Under this alternative the tract would be offered for competitive leasing as recommended by the Coal Tract Delineation Team and the Regional Coal Team. The proposed lease tract lies entirely within the Pleasant Valley - Fish Creek Coal Multiple-Use Evaluation Area defined in the LRMP. As the tract would be offered for competitive leasing, it could be leased to Coastal States Energy for mining through their Skyline Mine or to another company which would have to develop a new mine, probably on fee land to the east.

#### 2. Management Requirements, Constraints, and Mitigations

The Forest Plan Standard Special Stipulations, which are attached as Appendix C, would be included in the lease in addition to standard BLM lease stipulations. They are consistent with the planning documents for the BLM and the Forest Service and are necessary special measures for protection and mitigation of the affected resources.

Forest Service Special Coal Lease Stipulation #9 precludes mining induced subsidence that could damage or alter the flow of perennial streams, without specific analysis of the potential affects and consent by the Forest Service. The analysis presented in this EA is based on a conceptual mine plan that would prevent subsidence of perennial portions of Winter Quarters and Woods Canyon Creeks. Recoverable coal reserves would be less under this conceptual plan than under a plan which would allow subsidence of the perennial streams (Sections IV.B.1. and IV.B.7).

If the lease is issued, approval of surface facilities or subsidence of perennial streams would require additional analysis under the National Environmental Policy Act of 1969. The effects of subsidence on perennial drainages induced by longwall mining is currently being studied at the Skyline Mine in Burnout Canyon as a cooperative effort between the Manti-La Sal National Forest, Intermountain Research Station, and Utah Fuel Company. Any future analysis of the impacts of subsiding perennial portions of Winter Quarters and Woods Canyon Creeks would be based on conclusive results of the Burnout Canyon Study and other available information.

C. Alternative 3 - Offer for Lease Excluding Areas Within the Semiprimitive Recreation Area

1. Description

Under this alternative the tract would be made available for leasing as delineated, except for the area within the Fish Creek SPR (approximately 40 acres). There are no other changes from Alternative 2.

2. Management Requirements, Constraints, and Mitigations

The Standard Special Stipulations which are attached as Appendix C would be included in the lease in addition to standard BLM lease stipulations. They are consistent with the planning documents for the BLM and the Forest Service and are necessary special measures for protection and mitigation of the affected resources.

D. Comparison of Alternatives

The following chart has been generated to display a comparison of alternatives relative to the identified issues and concerns. The issues and concerns are listed as resource elements. Refer to Section IV for a discussion of impacts for each alternative.

<u>Resource Element</u>	<u>Alternatives</u>		
	1	2	3
Topography, Geology, and Mining	No coal would be mined.	22 million tons of coal could be mined. 6 million tons left in-place to prevent subsidence of perennial streams.	Same as Alt. 2.
Surface Hydrology			
Woods/Winterquarters Canyons	No effect.	Potential change in quantity/quality.	Same as Alt. 2.
Scofield Reservoir	No effect.	No effect.	No effect.
Ground Water Hydrology			
General	No effect.	Increased water output to Eccles Creek, but with lower TDS levels.	Same as Alt. 2.
Diversion of water to different drainage.	No effect.	No effect.	No effect.

Terrestrial Wildlife	No effect.	No effect.	No effect.
Aquatic Wildlife	No effect.	No effect.	No effect.
Vegetation and Range	No effect.	No effect.	No effect.
Socioeconomics			
Coal reserves for Skyline Mine	End in 12-13 years.	End in 16-17 years.	Same as Alt. 2.
Protect perennial streams	No coal would be mined.	Leave 6 million tons coal in place.	Same as Alt. 2.
Employment	Loose 290 jobs in year 2007.	Continue employment until year 2011.	Same as Alt. 2.
Royalties	No royalty income.	\$41.6 million in royalties to federal, state, and local governments.	Same as Alt. 2.
Economic viability of lease tract	No effect.	Stream protection may make tract uneconomic.	Same as Alt. 2.
Recreation - Fish Creek SPR	No effect.	No effect.	No effect.
Surface Facilities and Transportation			
General	No effect.	Minor impacts from exploration drill- ing and vent shaft. Possibly heavier truck traffic to coal load-out.	Same as Alt. 2
Exploration drilling	No effect.	No effect.	No effect.

### III. DESCRIPTION OF THE AFFECTED ENVIRONMENT

The following is a description of the affected environment, which has been divided into individual resource elements for clarity. The management prescription for the area, as designated in the Manti-La Sal National Forest LRMP, is for Semiprimitive Recreation (SPR), Forage Production (RNG), Wood-Fiber Production and Harvest (TBR), and Riparian Area Management (RPN). The management requirements for these areas are found on pages III-55 through III-57 and III-64 through III-73 of the LRMP.

The lease application area is located in central Utah in the northern portion of the Wasatch Plateau within the Wasatch Plateau Coal Field. The tract is adjacent to Coastal States Energy Company's Skyline Mine. The Wasatch Plateau is a north-south trending high plateau bounded by the Castle Valley to the east and the Sanpete Valley to the west. The tract is located approximately 23 miles northwest of Price, Utah. The area is accessed by Utah State Highways 96 and 264, which connect the Scofield area with U.S. Highway 6. Highway 6 runs northwest-southeast between Price and Spanish Fork.

#### A. Topography, Geology, and Mining

Winter Quarters Ridge crosses the central portion of the tract in an east-west direction. This ridge gradually slopes towards the east with an elevation ranging from about 9,300 feet to about 9,500. The section of the tract north of Winter Quarters Ridge comprises the upper reaches of the Woods Canyon drainage and its tributaries. The section of the tract south of Winter Quarters Ridge comprises the upper reaches of the Winter Quarters Canyon drainage and its tributaries. Both of the drainages flow in an easterly direction into Mud Creek (also called Pleasant Valley Creek) which flows north into Scofield Reservoir. On the eastern edge of the tract, the lower segments of the major drainages have an elevation of approximately 8,300 feet.

Stratigraphic units exposed on the tract consist of the following, in descending order: North Horn Formation (shales with subordinate sandstone, conglomerate, and limestone), Price River Formation (sandstone interbedded with shale and conglomerate), Castlegate Sandstone, and Blackhawk Formation (siltstone and sandstone interbedded with shale). The North Horn and Price River Formations occur on the western portion of the tract and form the slopes of the ridges at higher elevations. The Castlegate Sandstone is not a predominant rock unit and is either very thin or absent. The Blackhawk Formation occurs exclusively in all the drainages and forms the landscape of almost the entire eastern portion of the tract.

Coal beds of economic interest in this area occur at the base of the Blackhawk Formation. Three coal beds have been identified on the tract which reach minable thickness. In descending order these coal beds include the Upper O'Conner, Lower O'Conner A, and the Flat Canyon. At this time, only the Lower O'Conner A bed is considered economically recoverable. Both the Upper O'Conner and the Flat Canyon beds have isolated pockets of minable coal but it has not been resolved whether recovery of these reserves is feasible.

The Upper O'Conner bed occurs from about 30 feet to 210 feet above the Lower O'Conner A bed. The Flat Canyon Bed occurs from 10 to 100 feet below the Lower

O'Conner A bed. Overburden on the Lower O'Conner A bed is over 2000 feet under the ridges towards the western portion of the tract and is about 800 feet under the lower segments of the canyon bottoms towards the eastern portion of the tract.

The structure of the area is characterized by northwest-southeast and north-south trending fault systems with strata dipping gently west-northwest between the faults. The western boundary of the tract is delineated along the trace of an inferred major north-south trending fault. An east-west fault essentially splits the tract and is believed to terminate towards the western boundary of the tract.

The northern portion of the Wasatch Plateau has been determined to have a high potential for oil and gas occurrence (FEIS for Oil and Gas Leasing, 1992). The FEIS predicted 30 wells would be drilled during the period 1992 to 2007, so it is reasonable that one could be drilled within the proposed coal lease tract. Three wells, all dry, have previously been drilled near the tract in recent years at the following locations:

- T 12 S, R 6 E, Section 26,
- T 11 S, R 5 E, Section 27,
- T 13 S, R 5 E, Section 11.

The Clear Creek gas field is located 4 miles southeast of the tract. Only one well remains in production. Production is from the Ferron Sandstone member of the Mancos Shale.

#### B. Surface Hydrology

The proposed lease tract contains two east-trending drainages, Woods Canyon and Winter Quarters Canyon. The entire tract is within the Scofield Reservoir drainage, which then drains into the Price River, and ultimately into the Colorado River. The Scofield drainage includes numerous east-trending drainages, some of which extend from the crest of the Wasatch Plateau, which is also the drainage divide between the Colorado River Basin and the Great Basin.

Woods Canyon and Winter Quarters Canyon creeks have been defined as perennial to near their upper reaches (see Map 2). For this environmental analysis, the definition of "perennial" is having a measurable flow 2 out of 3 years on or about October 1. Flows where the streams cross off the proposed lease along the eastern boundary were 0.75 cfs for Winter Quarters Canyon creek and 0.18 cfs for Woods Canyon creek on September 23, 1993. There was flow at both locations on October 1, 1994, but it was not measured. These data seem to correlate well with perennial reaches defined by macroinvertebrate species (the presence of 2- to 3-year old stonefly larvae which require perennial water for survival, Stewart and Stark, 1988). The Forest Service considers this to be a reasonable and conservative method of defining perennial stream reaches.

Snowmelt-fed springs are the primary source of water for the perennial streams, with summer rains usually producing little runoff (USGS, 1979). The ephemeral side drainages flow during snowmelt and in response to rainstorms, but are usually dry by October 1. Spring flow, which is probably recharged primarily

by snowmelt, contributes to stream flows but is not enough to sustain the ephemeral drainages.

Water quality is good for both Winter Quarters Canyon and Woods Canyon creeks, and meets State water standards for all parameters measured. The State of Utah has assigned water quality standards 1C, 2B, 3A, and 4 (1994) to Price River and tributaries from Castle Gate below Price City Water Treatment Plant intake to the headwaters, which includes this lease tract. Phosphate levels have been high in Scofield Reservoir for a number of years, but the State has determined that it is naturally occurring due to sediment erosion, and that human activities are largely mitigated and do not affect the phosphate levels as long as erosion is controlled. Scofield Reservoir still is a priority water body for water quality improvement.

In order to prepare for the evaluation of this proposed lease tract, available water quality data have been assembled. This includes samples from Winter Quarters Canyon and Woods Canyon creeks, usually near the confluence with Pleasant Valley Creek, but also from a one year study of water quality just below the National Forest and a recent two year water quality data collection effort within this lease tract. The water quality is similar in Winter Quarters, Woods, and Eccles Canyons. Water quality data have been collected in Eccles Canyon by Skyline mine since 1979 to monitor the effects of mining. The stations above the mine are similar in quality to the streams on the proposed lease.

In Winter Quarters Canyon just below the National Forest, samples high in sulfur have been found which appear to be influenced by a tributary that is not on the National Forest and therefore not in the proposed lease area.

Price and Plantz (1987) have reported the following flow data for Eccles Canyon Creek:

"The annual mean flow in Eccles Canyon Creek, where it is gaged at station 09310600, ranged from 1.64 cfs in water year 1981 to 6.78 cfs in water year 1984 (table 3). Most of the annual flow in Eccles Canyon Creek is from late April to early July, as shown in figure 3. The maximum recorded peak flow at station 09310600 was 71.0 cfs 5/23/84 (table 3).

"The chemical quality of stream flow in Eccles Canyon is generally good, that is, the water is chemically suitable for most common uses. Dissolved-solids concentrations in 46 samples collected at station 09310600 during the 1980-1984 water years ranged from 160 to 490 mg/l with a mean of 293 mg/l (table 4). Calcium, magnesium, and bicarbonate were the dominant ions found in the samples. With the exception of manganese, concentration of trace elements that were analyzed were smaller than the criteria of the US EPA (1976) for drinking water supplies. The mean concentration of Manganese for 28 samples was 67 ug/l, compared to a criterion of 50 ug/l.

"Suspended sediment concentrations in 90 streamflow samples collected at station 09310600 ranged from 10 mg/l 1/13/81 to 45,100 mg/l 5/30/93. Instantaneous suspended sediment loads determined from the suspended sediment samples concentrations and flow data are as follows:

Water Year	Suspended Sediment Loads t/day	
	Min	Max
1980	0.16	228
1981	0.03	6.9
1982	0.12	206
1983	0.21	419
1984	0.11	551

Sediment yield from the upper portions of the basin is probably negligible (Mundorff, 1972). According to the U.S. Soil Conservation Service (1975), erosion rates in the Price River Basin vary from 185 to 5625 tons per square mile per year. The bulk of the sediment comes from areas covered with the highly-erodible Mancos shale (Mundorff, 1972), not the upper elevations where the proposed lease tract is located. However, Denton, et al (1983) report some of the greatest sediment loadings are from Eccles and Woods canyons which are both similar to Winter Quarters Canyon:

"Nutrient concentrations in Scofield watershed seem to be somewhat correlated with the sediment carried by the streams. ... The heaviest sediment and nutrient loadings come from subbasins where either natural conditions (steep canyon walls, unstable soils/slides, and gradients as in Woods Canyon [67 T/sq mi/yr] or Fish Creek [50 T/sq mi/yr]) or in areas heavily used by man (Pleasant Creek near Scofield [70 T/mi sq/yr] or Eccles Creek [100 t/mi sq/yr])."

Iaquinta (1985) estimated the following sediment yields at the National Forest boundary:

Eccles Canyon (Undisturbed)	63 t/mi sq/yr
Woods Canyon	58
Winter Quarters Canyon	55

The gradient of the perennial sections of both Winter Quarters Canyon and Woods Canyon creeks, within the proposed lease tract, ranges from about 4 to 6%. The unnamed perennial tributary which comes from the northeast corner of section 3 and intersects Winter Quarters Canyon creek in the east-central part of section 2 has a gradient of approximately 13%. The north-facing slopes of Woods and Winter Quarters Canyons are 35-50%, while the south-facing slopes are 45-55%.

Denton, et al (1983), approximated the annual discharge from Woods Canyon Creek using an area-flow rate correlation with Fish Creek:

	Eccles	Woods
J	43 ac ft	21 ac ft
F	41 ac ft	19 ac ft
M	51 ac ft	28 ac ft
A	76 ac ft	65 ac ft
M	679 ac ft	480 ac ft
J	108 ac ft	270 ac ft
J	64 ac ft	33 ac ft
A	53 ac ft	29 ac ft
S	45 ac ft	27 ac ft
O	45 ac ft	26 ac ft
N	44 ac ft	23 ac ft
D	44 ac ft	22 ac ft
total	1293 ac ft	1043 ac ft

Jeppsen et al. (1968) reports the mean annual precipitation at 30-35 inches per year, with 8-10 inches falling as rain. The average annual precipitation reported at Scofield Dam (1951-60) is 16 inches and 23 inches at the Skyline Mine.

For many years the Forest Service has been concerned that mining-induced subsidence could impact the flow of streams, which would affect riparian zones, macroinvertebrate populations, and fish spawning. Mining on private lands approximately 15 miles southeast of the proposed lease caused surface fracturing on fee land which diverted the Right Fork of Miller Creek into the Cyprus Plateau's Star Point Mine. Utah Fuel Company is funding a study in Burnout Canyon, approximately 4 miles south of the proposed lease tract, to evaluate longwall mining subsidence impacts on a perennial stream. As of June, 1995, mining had progressed to the fourth longwall panel, all of which have been under intermittent parts of the stream. There have been some changes noticed in the stream, but impacts appear to be minor (Sidle, 1995). Not enough data are available yet to reach any definite conclusions.

### C. Ground Water Hydrology

The principle factors controlling ground water in an area are the precipitation and the geology. Most of the water comes from spring snowmelt which percolates into the ground. The geology controls water movement through the subsurface and the locations of springs.

The rock units exposed in the proposed lease tract are from the Cretaceous Mesaverde Group. The lowest unit is the Star Point Sandstone, a massive, medium-grained sandstone which is approximately 1,000 feet thick with almost no shale. The Blackhawk Formation, which overlies the Star Point, contains interbedded sandstones, shales, siltstones, and mineable coal seams. The sands of the Blackhawk are fine- to medium-grained, usually with a high clay content. The shales are generally high in montmorillonite (smectite) clays, which swell when wet and should form an effective barrier to ground water movement. The youngest unit in the area is the Castlegate Sandstone, a massive

medium- to coarse-grained sandstone with some interbedded conglomerates near the base.

Danielson, et al (1981), and Danielson and Sylla (1983), describe the Star Point/Blackhawk regional aquifer of the Wasatch Plateau as saturated except near the plateau escarpment and in deeply incised canyons where ground water can drain naturally. In the area of the proposed lease tract, the Star Point Sandstone is less well developed, actually consisting of several sandstone tongues. The Lower O'Connor Seam lies immediately over the Storrs Tongue (upper-most tongue) in the eastern part of the tract, and approximately 40 to 50 feet above the Panther Tongue to the west where the Storrs Tongue has pinched out. Numerous coal exploration drill holes have penetrated the upper tongue, showing the zone to be dry except near faults (Mark Bunnell, 1994, personal communication). Ground water in the Blackhawk Formation above the regional aquifer occurs predominantly in fractured and faulted rock and to a lesser degree in sandstone lenses. The structural dip of the area is to the west, and the regional aquifer does not crop out within the Huntington Creek drainage to the west of the Skyline Mine, so it probably does not supply springs in the area.

A number of faults occur within the proposed lease tract, but of the 44 faults encountered in the Skyline Mine (as of 1992), only 5 contained water. Four of the 5 faults appeared to intersect water-saturated paleochannels in the roof. Two faults were intersected in the Star Point Sandstone which produced water from the floor but not from the roof. The low permeability along faults in the Blackhawk Formation is probably due to the high clay content.

The majority of the springs in the area issue from west-facing slopes, usually at a sandstone-shale interface. Water probably percolates down through the section until it encounters a shale lens. Then it flows down-dip (generally to the west) along the top of the shale until it reaches a point it can again move downward or emerges at the surface.

Most of the springs have higher flows during the spring snowmelt season, with much lower flows in the fall. Flow rates also vary considerably from year to year, depending on the amount of snow received during the previous winter. These data substantiate the theory that the water supplying the springs is generally from a very localized source.

The ground water in the area is a strong calcium bicarbonate type. Sulfate, magnesium, and phosphate increase downslope toward Pleasant Valley Creek. Two distinct qualities of spring water exist in the area. Springs near the Castlegate Sandstone outcrop have very low dissolved solids content (generally less than 100 mg/l), probably due to the lack of shale in the Castlegate. Springs in the remainder of the area have dissolved solids concentrations of 180 to 260 mg/l.

#### D. Wildlife - Terrestrial

The proposed Winter Quarters LBA area is inhabited by a variety of wildlife species. Bear, cougar, deer, elk, birds, reptiles, and amphibians are supported by habitats within the project area. The area is used as spring and summer forage by deer and elk. Big game species may also use this area for

calving, fawning, and cover. Common raptors known to occur within the area include red-tail hawks, golden eagles, sharp-shinned hawks, and a number of owl species. Additional raptor species certainly exist at the site during migration periods. Raptor aerial and ground surveys of the area indicate active and inactive nest sites in 1992 and 1993 (surveys conducted by Coastal States Energy Development Corporation and Manti-LaSal National Forest Biologist). Other terrestrial organisms present include rodents, lagomorphs, upland ground birds, songbirds, coyotes, bobcats, and woodpeckers.

Listed threatened, endangered, and sensitive species that may occur in the area are Bald eagles, Northern Goshawk, and Northern Three-toed Woodpecker. Bald eagles may occasionally pass through the area during their winter migration. The Northern Goshawk is a listed sensitive species that occurs in the project area. The goshawk has been observed during ground surveys, and two nests have been identified within the proposed lease tract. No Northern Three-toed Woodpeckers have been seen during surveys. No other threatened, endangered, or sensitive species have been observed in the project area.

No known threatened, endangered, or sensitive plant species are known to occur on the proposed lease tract (documented in the Biological Evaluation).

Riparian zones have been identified within the project tract. These provide important habitat for water dependant terrestrial species.

#### E. Wildlife - Aquatic

Winter Quarters Canyon Creek has a moderate population of macroinvertebrates. Stonefly larvae were found as far up as the intersection of Box and Bob's Canyons, indicating perennial flow. Mayfly nymphs were also present, but they may not require perennial water. On June 7, 1994, breeding cutthroat trout were found from the forest boundary down onto the private land to the east. No fish barriers exist through this stretch, so it is likely that fish do occupy the stream above the forest boundary.

The upper portion of Woods Canyon Creek has a higher population of mayfly nymphs than Winter Quarters Canyon. Stonefly larvae were found as high as the fork in the stream near the center of Section 34 (T 12 S, R 6 E), indicating perennial flow. The stream may be perennial below this point due to a major spring located at this fork of the stream. The riparian habitat appears to be in excellent condition on the forest, but below the forest boundary to the east it has been heavily impacted by livestock grazing. No fish were seen, although some may have been present, in the stream from its headwaters to the point where it crosses the paved road running along the west side of Scofield Reservoir (Sec. 32, T 12 S, R 7 E) on June 28, 1994.

The riparian zones identified within the tract provide important habitat for aquatic wildlife.

#### F. Vegetation and Range

The north-facing slopes are dominated by the spruce-fir communities, along with a few areas on south-facing slopes. Dominant species are Engelmann spruce

(Picea engelmannii) and subalpine fir (Abies lasiocarpa). The understory varies from almost nonexistent to moderate coverage, often dominated by gooseberry currant (Ribes montigenum).

The aspen community is the most common vegetation type on the south-facing slopes, and also occurs on some north-facing slopes. Aspen (Populus tremuloides) is the dominant overstory species. Snowberry (Symphoricarpos oreophilis) and Oregon grape (Mahonia repens) are the dominant understory species, depending on location.

Much of the ridge top areas, and some of the canyon bottoms, are covered by the mountain grassland community. Mountain brome (Bromus carinatus) and slender wheatgrass (Elymus trachycaulus) are the dominant species. Other grasses, forbs, and browse species are common. Some of the slopes above riparian areas are covered by the upland sedge-grass community with Carex geyeri. The ridge tops also contain the sagebrush-grass community in some areas. The dominant species are Vasey sagebrush (Artemisia tridentata var. vaseyana), slender wheatgrass, and subalpine needlegrass (Stipa columbiana). Other common species in the sagebrush-grass community are low rabbitbrush (Chrysothamnus viscidiflorus), Louisiana sagewort (Artemisia ludoviciana), aster (Aster spp.), yarrow (Achillea millefolium), and Indian paintbrush (Castilleja spp.).

A few small meadows occur in the canyon. They are generally dominated by species of Poa with some sedges and and carex intermixed. They are generally productive.

Riparian areas exist along streams and at seeps and springs. The vegetation along the water edge consists of species of Carex, Poa, and to a lesser extent sedges. Some willow is present along the streams.

The proposed lease tract contains parts of 5 sheep grazing allotments. A total of 4,700 sheep graze the area between July 1 and September 30.

#### G. Socioeconomics

This coal lease application filled by Coastal States Energy is adjacent to their Skyline Mine located in Carbon County Utah. Present holdings of this company are approximately 70 percent in Emery County and 30 percent in Carbon. The proposed lease area is entirely in Carbon County.

The work force for this operation includes 392 workers which come from several counties including:

Sanpete County	50 percent or (196 workers)
Utah County	25 percent or (98 workers)
Carbon County	18 percent or (71 workers)
Other	7 percent or (27 workers)

The majority of coal from this operation is transported by conveyor belt to a Unit Train Loading facility in the D&RG spur south of Scofield, Utah. Rail workers are primarily located in Carbon County.

The Skyline Mine is currently the highest producing underground mine in the United States west of the Mississippi River. Existing capacity is 5.5 million tons (MT) per year and 1993 production was 5.1 MT. The mine uses 2 longwall sections and several continuous miner sections. As seen in Figure 1, the mine has experienced significant growth in the last 10 years to its current production level.

Coastal is the major noncaptive coal producer in Utah with 3 mines and about 43 percent of Utah production in 1993 (9 million tons). The Skyline operation produces about 60 percent of Coastal's total production. Utah's coal production, which grew significantly through the mid and late 1980's, has leveled off in the 1990's in the 21 to 22 million ton per year range (Figure 2). Net production in 1993 was 21.7 million tons which is about 300,000 less than record 1990 production. The major portion of Utah's production comes from federal lands (85 to 88 percent).

The area of influence for the Skyline Mine and the Winter Quarters Tract is difficult to tie down since the coal is in two counties (Carbon and Emery) and workers primarily come from three counties (Carbon, Sanpete, and Utah). Looking at available statistics from the Bureau of Economic and Business Research, it is clear that disaggregation methods used do not properly identify statistics by county. An example is mining employment and mining wages in Sanpete County where statistics show little contribution from mining. This is in spite of the fact 196 workers from Sanpete are employed at the mine. It is assumed that economic statistics for the Skyline operation are credited to Carbon County.

For analysis purposes, Carbon County will be analyzed as the area of influence and statements about Sanpete County will be made to the extent possible. Statistics concerning the Skyline mining operation will be provided where possible. Utah County, being a relatively large urbanized area, would show only minor significance from this operation although an estimated 98 workers come from this area.

Carbon County had an estimated 1992 population of 20,600 which is level with 1991. The county's population peaked in 1982 at 24,700 and declined steadily until 1990 when it bottomed at 20,200 which is a 4,500 (-18%) decline. The county population has made a modest recovery since 1990 and shows signs of maintaining existing levels. The Utah Office of Planning and Budget projects Carbon County's population to be level through year 2000. The nearest town to the mine, Scofield, had a population of 43 in 1990, indicating the general remoteness of this area.

Civilian labor force over 16 years of age (1990 data) in Carbon County totaled 8,288, which is down 777 workers, or about 9%, from the 1980 level of 9,065, indicating the significant decline of the mid and late 1980's. The major employment categories in 1991 were as follows:

Government .....	2,023	(26.5%)
Trade .....	1,923	(25.2%)
Services/Misc .....	1,340	(17.6%)
Mining .....	1,307	(17.1%)
Trans./Public Utils.....	436	( 5.7%)

Figure 1  
COAL PRODUCTION  
SKYLINE MINE

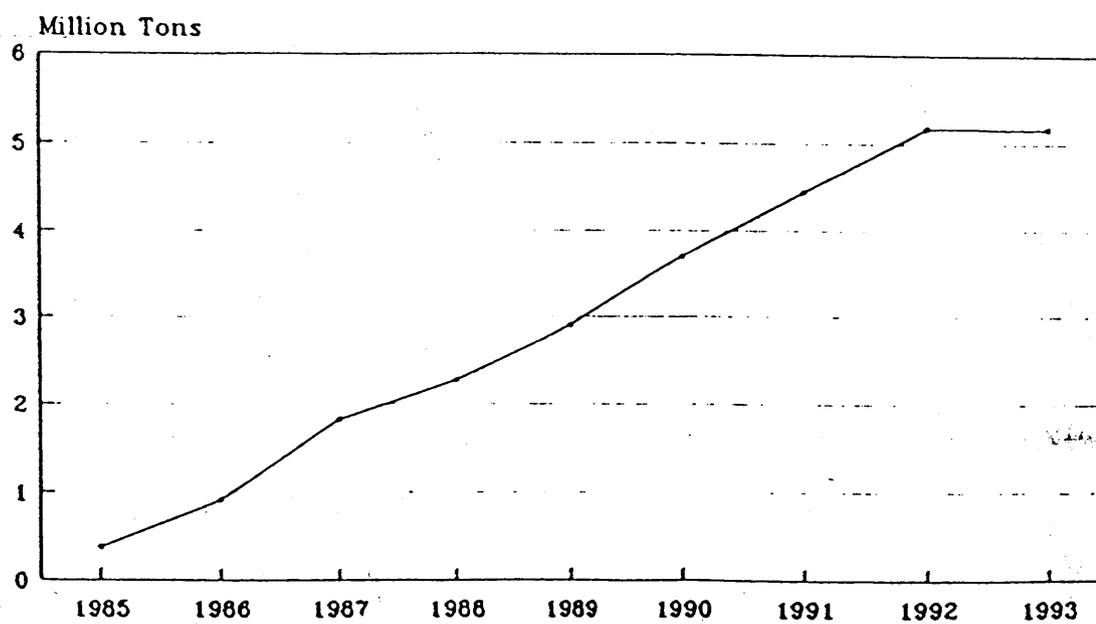
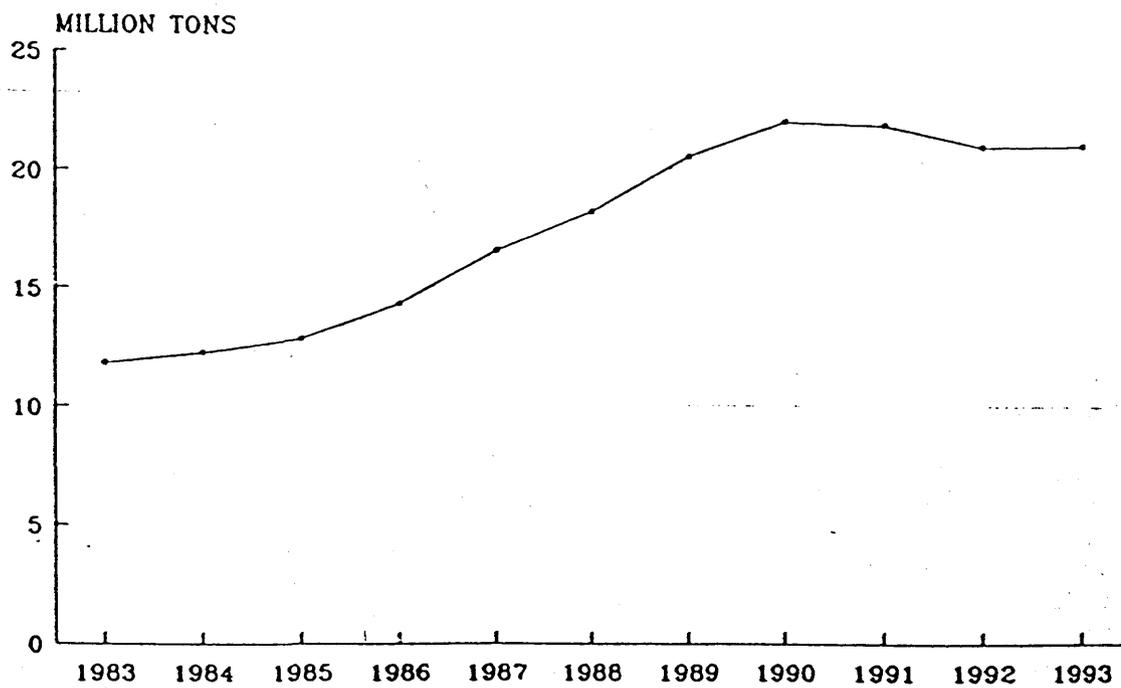


Figure 2  
UTAH COAL PRODUCTION



These data indicate a relatively well balanced economy for rural Utah. The relative significance of the Mining Industry is not as evident in employment as in Personal Income and Earning where this category dominates as indicated below:

Mining .....	\$72,080,000	(34.1%)
Service/Misc.....	35,072,000	(16.6%)
St. & Local Gov't .....	30,970,000	(14.6%)
Retail Trade .....	19,747,000	( 9.3%)
Trans/Public Utils.....	19,683,000	( 9.3%)
Wholesale Trade .....	9,954,000	( 4.7%)

Mining, which is primarily coal mining in Carbon County, is the dominant industry in income generation, providing more than 1/3 of the county economy. Considering the fact the majority of Transportation and Public Utilities is related to coal through hauling and electrical generation, these categories provide about 92 million dollars and 43 percent of income in the county.

Sanpete County provided about 50 percent of the workers to the Skyline Mine or 196 jobs. It is estimated wages generated are about 9.75 million dollars which is about 17 percent of wages and salaries in Sanpete indicating this employment is very significant to this county. The Skyline Mine generates an estimated 20 million dollars of income to workers in Sanpete, Carbon, and Utah Counties.

Trends in the coal mining industry have had a major affect on Carbon County. Statewide coal mine employment peaked in 1982 at 4,296. By 1983 this number had fallen to 2,707 (a 37% reduction) and continued to decline throughout the 80's and early 90's. In 1993 Utah coal mining employment had declined to 2,055 (48% reduction) where it has shown signs of stabilization. An estimated 50 percent of Utah's coal miners are believed to reside in Carbon County.

During the period of significant employment decline, Utah's coal production increased form 11.8 million tons to the 21 to 22 million ton area. This significant increase of almost 100 percent was made possible through productivity increases through mechanization. More use of longwall and other efficient mining equipment has enabled manpower reductions with increased productivity. This has enabled Utah coal to remain competitive in the market place. Figure 3 provides an idea of the significant advance in productivity on a tons production/miner hour basis.

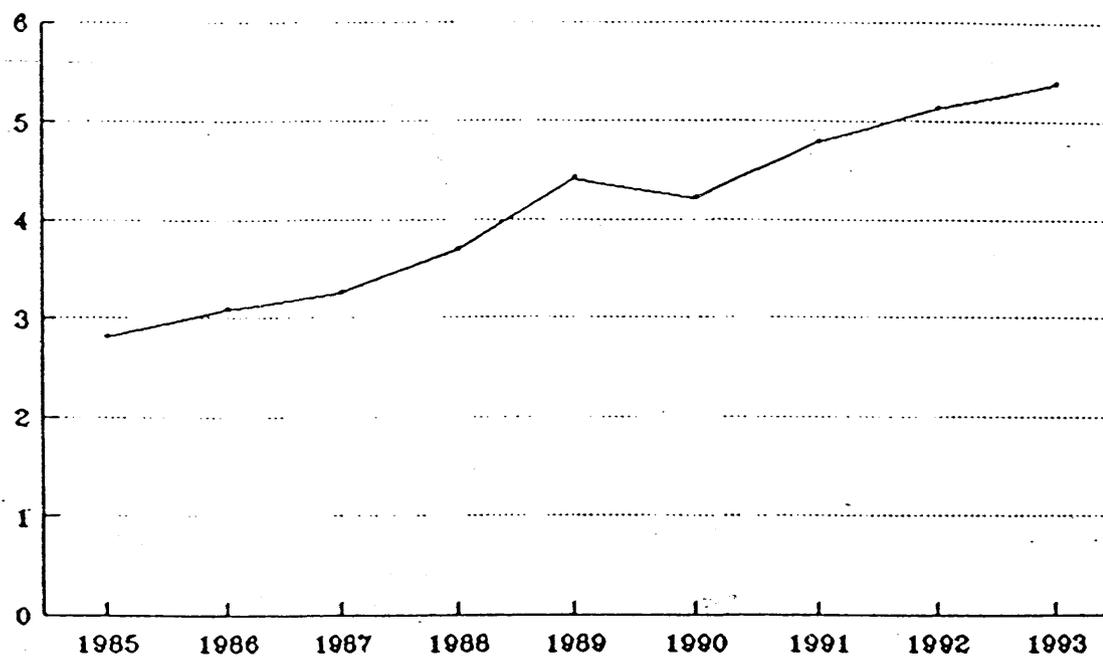
#### H. Recreation and Visual Quality

The proposed lease tract is used by recreationists for hunting, dispersed camping, sightseeing, and fuelwood harvesting. The most intense periods of use are during the general elk and deer seasons in October.

The northwestern corner of the tract includes approximately 40 acres of the Fish Creek Semiprimitive Recreation (SPR) Area. The management emphasis is on providing a semi-primitive, non-motorized recreation experience. Nearly all of the use in the SPR is along the Fish Creek National Recreation Trail and the trail along Gooseberry Creek, which are located in the bottoms of the drainages. There is almost no recreational usage of the SPR in the area of the proposed lease tract.

Figure 3

# UTAH COAL PRODUCTIVITY TONS/MINER HOUR



The Visual Quality Objective (VQO) for the proposed lease area is "Partial Retention", which means that man's activities may be evident but remain visually subordinate to the characteristic landscape. The area is generally roaded, naturally appearing. It is viewed in middleground from Forest Development Road 50221, and in background from the town of Scofield.

#### I. Surface Facilities and Transportation System

There are very few surface improvements on the proposed lease tract. They are limited to the road on Granger Ridge, a pack trail in Winter Quarters Canyon, and a few survey monuments. Woods Canyon has 3 livestock watering troughs and 1 pond, and Winter Quarters Canyon has 4 troughs. There are some sections of allotment boundary fence on the tract.

The coal is transported by conveyor down Eccles Canyon approximately 2.5 miles to a train load-out facility along Pleasant Valley Creek. Access to the mine from surrounding communities is provided by U.S. Highway 6 and Utah State Highways 31, 96, and 264. Coastal States Energy currently has a Forest Service road use permit for surface access to the forest.

#### IV. DIRECT AND INDIRECT EFFECTS OF IMPLEMENTATION

##### A. Alternative 1 - No Action

Under this alternative the tract would not be offered for lease, therefore, the tract would not be mined.

There would be no mining related environmental consequences to the tract area and surrounding vicinity, and there would be no economic benefit to the federal, state, and local governments from coal lease fees and coal royalties. There would also be no input to the local economies from employees salaries or from payments to local businesses for support of the mine. The existing mine would close after the coal in the existing leases is mined-out unless additional reserves in other areas adjacent to the tract are leased. Without additional reserves the mine would probably close in approximately the year 2007, resulting in the loss of 315 jobs.

##### B. Alternative 2 - Offer for Lease with Standard Stipulations

Under this alternative the tract would be offered for competitive leasing as recommended by the Coal Tract Delineation Team. The Forest Service Standard Special Stipulations (attached as Appendix C) would be included in the lease in addition to standard BLM lease stipulations.

###### 1. Topography, Geology, and Mining

If Coastal States Energy Company acquires the lease, underground coal extraction from the tract would likely involve extending underground workings of the Skyline Mine to the north using standard industry longwall mining practices. Mining in the Lower O'Conner coal bed would probably consist of 3 sets of longwall panels, oriented east-west, separated by the Winter Quarters and Wood Canyon drainages. Full-support mining would be employed under the perennial drainages to provide access to adjacent panels and prevent subsidence. Approximately 22 million tons of coal could be mined under this alternative, which would not allow mining under perennial streams. This would extend the life of the Skyline Mine by approximately 4.4 years.

Under this alternative, mining that would cause subsidence of the perennial portions of Winter Quarters and Woods Canyon drainages would not be allowed unless specifically approved by the regulatory agencies with consent of the Forest Service. Forest Service consent to subsidence of the perennial drainages could be issued only if current studies of the effects to perennial drainages (currently scheduled for completion about the year 1998) show that impacts would be consistent with existing laws, regulations, and Forest Plan direction. The results of a study in Burnout Canyon at the Skyline Mine initiated in 1992 would form the basis for such decisions. Under the Organic Administration Act of 1897 and the Multiple-Use Sustained-Yield Act of 1960, other water laws, and the Forest Plan, National Forest System lands must be managed to maintain favorable conditions of water flow

and sustained-yield of renewable resources. Measures that could be used to effectively mitigate impacts would be considered.

If subsidence of the perennial drainages were to be permitted under an approved Mining and Reclamation Plan, the underground mining configuration would be different than that described above. The following full-extraction scenario was developed to determine the amount of recoverable coal that would remain unmined under the scenario that prohibits subsidence of perennial drainages. Mining in the Lower O'Connor coal bed would consist of two blocks of longwall panels separated by the suspected east-west fault which crosses the tract. A southern block of panels would lie under the Winter Quarters Canyon drainage. A northeastern block of panels would lie under the lower stretch of the Woods Canyon drainage. Longwall panels in the southern block would be oriented in a northwest direction from mains oriented in a northeast-southwest direction. Longwall panels in the northeastern block would be oriented in a southwest direction from mains oriented in a north-south direction. Approximately 28 million tons of coal could be mined.

Thin coal in the northwestern portion of the tract would preclude longwall mining in this area. Some extraction using the room-and-pillar method could occur if economical.

Access to the reserves in the Upper O'Connor and the Flat Canyon beds, if they are determined to be mineable, could be provided by rock slopes from the Lower O'Connor A bed. Extraction of both beds would entail blocks of 3 to 4 longwall panels, located in the northwestern portion of the tract for the Upper O'Connor bed and the southwestern portion of the tract for the Flat Canyon Bed. In general, the sequence of mining coal beds would be from top to bottom with longwall panels superimposed.

Subsidence is usually coincident with longwall mining and is transmitted rapidly from the workings to the surface. At Skyline Mine #1 "virtually all subsidence... occurred about 4 weeks after the longwall face passed beneath the subsidence stations" (Bunnell, 1989). Once subsidence has begun it will progress with the direction of mining and continue until after the last longwall panel in the block is complete. The total subsided area will include the surface area above the extracted longwall block plus an additional area determined by the angle-of-draw. Final subsidence contours for a large block of longwall panels extracted from a single coal seam would resemble a broad irregularly shaped trough with maximum subsidence occurring towards the center of the longwall block. Maximum subsidence is usually less than the mining height, due to bulking of the overburden strata.

The extent and magnitude of subsidence is dependent on the physical properties of the overburden, coal bed depth, extracted coal bed height and width, seam dip, geologic discontinuities, mining rate, and number of seams mined. For a single coal bed, subsidence information available from the Skyline Mine indicates an angle of draw of about 21 to 22 degrees and maximum subsidence of about 60% of the thickness of

coal mined. This coincides with similar studies by PacifiCorp on East Mountain which found that mining in one seam caused surface subsidence equal to 68% of the extracted thickness (Dyni, 1991). Surface disruption and associated impacts due to subsidence at the Skyline Mine, as well as the other underground coal mines in the region, usually decrease as the overburden thickness increases. The major effect of multiple seam longwall mining is to increase the maximum subsidence but the angle-of-draw is not changed appreciably where longwall blocks in each seam, or coal bed, are superimposed. Where a longwall block in an underlying seam extends beyond a longwall block in an overlying seam, the subsidence area will expand in accordance with the extended mining area. Maximum subsidence should occur toward the center of the largest amount of longwall block overlap.

A broad subsidence trough with a smooth profile minimizes disruption to the surface. It is produced by mining a large block of longwall panels at an even rate which results in uniform gradual subsidence. One potential impact to streams crossing the final subsidence trough is a change in the original surface slope. Depending on the original topography, an increase or decrease in the surface slope could have an affect on the flow of the stream.

Longwall mining on the tract, precluding subsidence of the perennial drainages, would cause three subsidence troughs; one over each set of longwall panels. Maximum subsidence should be approximately 10 feet. Surface cracks have resulted from longwall mining at the Skyline Mine in shallow overburden between 200 feet and 400 feet. They formed parallel to the slopes of the drainage in the colluvium above the longwall panels. Several of these surface cracks were reported as 200 feet long, 1 foot wide, and with a 1 foot scarp. Numerous other surface cracks opened about 1 to 3 inches and were 30 to 50 feet in length. One of the minor cracks appeared across a flowing drainage in Burnout Canyon above the Skyline Mine in June of 1990. The overburden was approximately 350 feet. The crack (4 inches wide and 8-10 feet deep) filled with mud and did not interrupt flow. By August 1990 the crack was no longer visible (Bunnell, 1990). Field investigation revealed that most minor cracks had disappeared within a few months and the major cracks were rapidly healing.

There were also surface fractures above the mine along Trough Springs Ridge, where the overburden is approximately 1,100 feet thick. The fractures were in the upper Blackhawk Formation, and were 1 to 4 inches wide and 10 to 60 feet long in the spring, but were not noticable in the fall (Mark Bunnell, 1995).

Forest Service Special Stipulation #9, which precludes subsidence of perennial streams without prior approval, would prevent surface fractures that could divert water underground. One case of this type of diversion has been documented on fee lands within the Wasatch Plateau, where the Right Fork of Miller Creek has been diverted into the Star Point Mine. Subsidence theory and the observations displayed in Appendix E indicate that surface tension cracks in overburden greater than 400-600 feet probably do not extend down into the caved zone directly above the underground workings. It is therefore

unlikely that there would be direct hydrologic connection between surface flow and underground workings. Guidance from the SME Mining Engineering Handbook, 2nd Edition states that suggested vertical distance between mining and water bodies should exceed 60 times the mining height (SME, p. 962). The potential for a surface crack to divert water underground prior to healing is further limited by the characteristics of the Blackhawk Formation which consists of interbedded claystone, siltstone, and sandstone. Although material may fracture at the surface, the fractures are prone to heal rapidly because of the expanding nature of the montmorillonite clays. The CHEMPET Research Corp. analyzed drill core material from the Blackhawk Formation through X-ray diffraction and found it to contain 58% montmorillonite clay (Hurst, 1989). Bentonite, which is essentially composed of montmorillonite, is able to absorb water and increase in volume several times (Hurlbut, 1971). The Blackhawk Formation does not readily receive an influx of surface water because the claystone and siltstone have a low permeability and the higher permeability sandstones are lenticular and pinch out in a short distance. During coring for tritium analysis, the siltstone from a layer 65 feet in the mine roof showed a permeability of  $2.5 \times 10^{-9}$  cm/sec which is very low. The silty sandstone 100 feet above the top of the Lower O'Connor "A" seam tested with a permeability of  $1.4 \times 10^{-9}$  cm/sec which is also low (Hydrometrics, 1987).

If a company other than Coastal States Energy Co. acquires the lease, it would probably be mined from fee lands to the east with the room-and-pillar method. While it is necessary to evaluate this potential scenario, it is unlikely that another company would bid on the tract due to current market conditions, relatively small total reserves for the lease tract and the fee land, and costs for new mine development. New portals and surface facilities would be required. Development of main entries could still be driven north and south with submains coming off the main development areas. Room-and-pillar panels could be set up in about 400-600 feet of width depending on the extraction scenario. Extraction using the room-and-pillar method would be less than using the longwall method. Subsidence would be less predictable because of fenders and stumps being left from the coal extraction sequencing. The majority of the tract has less than 2,000 feet of overburden and therefore could be extracted with few major difficulties. Because bleeder systems and barrier pillars would be utilized between panels, subsidence would take place slowly over many years and not be a broad trough. The subsidence in this scenario would be trough, barrier, trough, barrier, etc. Forest Service Special Stipulation #9 would still be in effect, so the same general blocks of coal would be mined as if it were mined by the longwall method.

If another company were successful in obtaining this lease tract, the entry would be from the eastern part of the tract. Development of the main entries could be driven north and south with submains coming off the main development areas. Room and pillar panels could be set up with widths of 400 to 600 feet, depending upon the extraction scenario. Panels in the northern part of the tract would be extracted first with panels south of the fault being extracted last. Full

pillar extraction could take place but less extraction might be accomplished due to the extensive horizontal stresses seen in the Skyline Mine #3. Subsidence would be less predictable because of fenders and stumps left from the coal extraction sequence. Because bleeder systems and barrier pillars would be utilized between panels, subsidence would not be a broad trough. The subsidence in this scenario would be trough, barrier, trough, barrier, etc.

Surface facilities for a new mine on fee lands to the east of the tract would involve approximately 27 acres of disturbance, and would include at least two portals, bathhouse and office facilities, a conveyor system, coal storage area, a truck loadout, and approximately 2 miles of access road. It is most likely that the mine would use existing train loadout facilities in the area. A 1.5 million ton annual operation is possible in either Winter Quarters or Woods Canyon. A 20-30 year mine life is likely.

A new mine facility would have some effect on visual quality, but would not be significant due to the other mines in the immediate vicinity, coal loadout facilities and railroads, the town of Scofield, and the historic Winter Quarters mine. Air emissions (particularly particulates and fugitive dust) would increase in the area if a new mine were operating in addition to the existing mines. A Utah Air Quality Approval Order would be required, and the mine would be required to operate within the standards of the approval order. Dispersion would be expected to be good due to the prevailing westerly winds in the area. Overall effects would be localized and insignificant. Development of facilities would be consistent with requirements of the Surface Mining Control and Reclamation Act of 1977, Federal Regulations 30 CFR 700, and the Utah Coal Rules.

If the area is leased for oil and gas, there could be a conflict between coal mining and petroleum exploration and development. The oil and gas targets in the area are all below the coal seams, requiring drilling through the coal. If this conflict were to arise, it would be resolved by the BLM.

## 2. Surface Hydrology

Forest Service Stipulation #9 (see Appendix C) states that, except at specifically approved locations, mining operations shall be conducted in a manner to prevent surface subsidence that would damage or alter the flow of perennial streams. Mining which could subside a perennial stream would not be allowed unless it could be demonstrated that the effects to the streams would be consistent with existing laws, regulations, and Forest Plan direction.

Subsidence could affect flow of overlying springs in the tract but this is unlikely because the overburden generally exceeds 800 feet and fractures in the overburden would heal rapidly due to the high clay content of the Blackhawk Formation (see Section IV.B.1). An analysis of 13 springs not related to faults on East Mountain (Kadnuck, 1994) with similar mining and geologic conditions indicates that there

appears to be little to no impact to springs from both longwall and room-and-pillar mining. Twelve of the 13 springs studied had mining take place directly under them. One of the springs had full extraction under it in late 1994 and there was not data available to evaluate. Spring 10-1 is located under the Skyline Mine #3 in the 5th Right setup room. It was undermined in September of 1993. The annual subsidence and hydrologic monitoring report submitted in 1995 showed no impact to the spring. It was included in the angle-of-draw for a longwall panel and showed 1 foot of subsidence (Skyline Mine Annual Report, 1995). Dr. Roy Sidle reports from a study of longwall mining from 1992 to 1994 under Burnout Creek "There was no significant difference between pre-mining and post-mining baseflows based on t-test comparisons (Sidle, 1995).

If the lease is mined through existing workings at the Skyline Mine, ground water intercepted in mining would be discharged out the main portals into Eccles Creek, which is still within the Price River drainage. This water is from the lower portions of the Blackhawk Formation, which is below the springs that supply much of the flow in Winter Quarters and Woods Canyons, so the interception of water during mining should not impact stream flows. Discharge at this point would increase flow in Eccles Creek and would provide dilution of existing discharges with high Total Dissolved Solids concentrations (See IV.B.3).

If the lease is mined from new surface facilities in Winter Quarters Canyon to the east of the tract on fee lands, ground water intercepted in the mine would probably be discharged into Winter Quarters Creek. Flow would increase and quality would be affected depending on the amount of water intercepted and discharged. Total Dissolved Solids levels would be increased but would remain within State Water Quality Standards. A discharge permit would be required from the State of Utah. Discharge quality is strictly regulated. Treatment may be required to meet water quality standards.

If a new mine facility were constructed, there would also be an increase in sediment discharged to the drainage and Scofield Reservoir during construction. Sediment control required during mining would minimize this impact. Overall sediment production would not be significant, because the area where the mine would probably be located is already disturbed (site of the abandoned Winter Quarters Mine) and some erosion is occurring.

### 3. Ground Water Hydrology

The only ground water which would be encountered in mining would probably be associated with fracturing and faulting or occasional sandstone lenses directly above the coal seam. The regional Star Point/Blackhawk aquifer does not exist within the lease area. The westerly dip of the strata is such that the water-bearing strata above the coal seam are below the surface in the Huntington Creek drainage, so these strata probably do not supply springs in the area. Therefore, interception of ground water should not alter surface water

flows or the hydrologic balance. In the event that springs or seeps are impacted, Forest Service Stipulation #17 requires the operator to replace the water in quality and quantity.

In the past gypsum rock dust was used in the Skyline Mine, which increased the total dissolved solids (TDS) levels in the water discharged to Eccles Creek. They have changed to limestone rockdust, which is less soluble, and TDS levels have decreased. The mixing of water from areas treated with limestone rockdust with water from areas treated with gypsum rockdust should produce an overall decrease in the TDS of discharge waters.

#### 4. Wildlife - Terrestrial

Alteration of stream flow could alter riparian zones, which in turn could alter watering, foraging, cover, and calving/fawning opportunities for wildlife. This reduction in quality of wildlife habitat might have a long-term effect on many wildlife species. Forest Service Stipulations #2, 3, 4, 7, 9, 14, and 17 provide for the protection of wildlife and wildlife habitat and require mitigation of damage that may be done. Therefore, under this alternative there should be no unmitigated impacts to terrestrial wildlife.

#### 5. Wildlife - Aquatic

Alteration of stream flow could alter the habitat for both vertebrate and invertebrate aquatic species and the spawning areas for trout. These potential impacts could have long-term effects on aquatic species. Forest Service Stipulations #3, 7, 9, 14, and 17 provide protection for aquatic species and their habitat and require mitigation of damage that may be done. Therefore, under this alternative there should be no unmitigated impacts to aquatic wildlife.

#### 6. Vegetation and Range

Potential mining impacts to surface springs could negatively impact vegetation, especially in riparian areas. Forest Service Stipulations #3 and 7 provide protection for vegetation. Stipulations #9 and 17 provide protection for the water resources necessary for both vegetation and grazing. Stipulation #13 provides protection for surface facilities necessary for grazing. Therefore, under this alternative there should be no unmitigated impacts to vegetation and range.

#### 7. Socioeconomics

The proposed lease tract as delineated contains an estimated 28 million tons of recoverable coal. Under this alternative Forest Service Special Stipulation #9 would be applied, which prevents any

subsidence under perennial streams without approval, reducing the amount of recoverable coal to 22 million tons. The Skyline Mine had reserves of 60 million tons of recoverable coal as of June, 1995. As seen in Figure 1, Skyline Mine production grew at a significant rate in the late 1980's and early 1990's, leveling off at just over 5 million tons per year. Assuming continuation at this rate, the existing holdings on a mathematic basis would continue for 12 years. Adding 22 millions tons of reserves at this same rate would result in approximately 4.4 years of additional life to the Skyline Mine. At existing coal prices, production under this alternative would generate approximately 41.6 million dollars of revenue which is shared equally between federal and state/county governments.

It is estimated that with full protection of the perennial streams in Winter Quarters and Woods Canyons, about 6 million tons of recoverable coal would be left in place and not mined. This is 23 percent of the tract total and more than one year of production. Socioeconomic impacts would be the same except the mine life would be reduced by more than one year and 6 million tons of coal would be lost from economic recovery. An estimated \$11.3 million in royalties would be lost. The total economic value of the 6 million tons of unmined coal would be approximately \$75 million.

The leasing and subsequent development of the Winter Quarters Tract would not be expected to have a significant increased socioeconomic impact on Carbon or surrounding counties. Facilities are in place for the mining and transportation of the coal to markets in Utah, the west, the midwest, and export markets in the Pacific Rim Countries. Without the tract, the mine would be closed by the year 2007. With the tract, production would continue to the year 2011. The life of nearly 400 direct employment jobs would be extended as well as numerous jobs in transportation and secondary industries in Carbon and surrounding counties.

If another company acquired the lease, it is assumed it would be developed in conjunction with adjoining fee land. A 1.5 million ton annual operation is possible in either Winter Quarters or Woods Canyons using continuous mining equipment. A 20- to 30-year operation is likely. This scenario could lead to development over the next 5 years with up to 25 construction workers, and 120 coal mine and coal transportation employees under full development. Employees could be expected to reside primarily in Carbon and Emery Counties. Carbon and Emery Counties have a declining or flat population and relatively high unemployment and could easily absorb their portion with minimal economic impact and a stabilization influence. In Utah County, these jobs would contribute to a very minor degree to the continued growth of the county which has one of the highest expansion rates in the U.S. Current economic considerations indicate it is highly unlikely that a new mine would be opened.

## 8. Recreation and Visual Quality

The underground coal mining itself should not impact recreational use of the proposed lease tract. However, coal exploration drilling and construction of a ventilation shaft could have minor, short-term impacts to recreation and visual qualities by disturbing the land surface, creating dust and noise, and increasing traffic. They should not be seen or heard from the Fish Creek SPR due to the topographic isolation of the two areas. Surface subsidence and cracking would have minimal impacts on recreation and visual qualities, and they are not likely to occur in areas of significant recreational use. These minor disturbances would be consistent with the "partial retention" visual quality objective. Any surface disturbing activities on the lease would be subject to a NEPA analysis.

## 9. Surface Facilities and Transportation System

Coal exploration drilling and construction of a ventilation shaft could also have minor, short-term impacts to recreation and visual qualities as described in the preceding paragraph. These activities would be subject to future environmental documentation. Use of the Forest transportation system would require a road use permit.

If a company other than Coastal States Energy Company acquires the lease, the surface disturbance for a mine facility and access roads on private land would be approximately 28 acres (see description in section IV.B.1). The other impacts described in the preceding paragraph would remain unchanged.

As of May, 1995, Central Utah Telephone, Inc., has decided to not to apply for a special use permit to install a fiber optics line up Winter Quarters Canyon and Winter Quarters Ridge. They are planning to run the line from Highway 6 south along Starvation Creek to the town of Scofield.

If Coastal States Energy Company acquires the lease, no impacts are expected on the transportation system. The existing coal loadout facilities and railroad could handle the additional production. If another company acquires the lease and constructs surface facilities on fee lands to the east, coal would probably be hauled by truck to a railroad loading facility at either the White Oak Mine south of Scofield or the Skyline Mine at the mouth of Eccles Canyon. Traffic is estimated at 140 truckloads per day, 5 days per week. This would increase traffic on the existing roads.

Existing Forest Service owned or permitted structures, such as fences and troughs, are protected by Forest Service Special Stipulation #13, which would require their repair or replacement if damaged by subsidence.

C. Alternative 3 - Offer for Lease Excluding Areas within the Semiprimitive Recreation Area

Under this alternative the tract would be made available for leasing as delineated, except for approximately 40 acres which is located within the Fish Creek SPR. The Standard Special Stipulations which are attached as Appendix C would be included in the lease in addition to standard BLM lease stipulations.

1. Topography, Geology, and Mining

The coal beds identified on the tract are not of minable thickness within the vicinity of the areas designated as SPR, so there would be no mining impacts within the SPR. Therefore, there would be no change in impacts from Alternative 2.

2. Surface Hydrology

No change from Alternative 2.

3. Ground Water Hydrology

No change from Alternative 2.

4. Wildlife - Terrestrial

No change from Alternative 2.

5. Wildlife - Aquatic

No change from Alternative 2.

6. Vegetation and Range

No change from Alternative 2.

7. Socioeconomics

No change from Alternative 2.

8. Recreation

No change from Alternative 2.

9. Surface Facilities and Transportation System

No change from Alternative 2.

D. Short-term Use of Man's Environment vs. Long-term Productivity

1. Alternative 1

There would be an economic loss of approximately \$41.6 million in royalties and \$92.4 million in salaries for the 22 million tons of coal not produced. There would also be no benefit in heat or electricity generation from the coal. However, the coal would be available for production in the future.

There would be no mining-related changes to short-term or long-term productivity of other resources.

2. Alternative 2

Mining of coal as proposed could extend the life of the Skyline Mine by approximately 4.4 years and provide 22 million tons of coal. This would be a one-time short-term benefit since coal is a nonrenewable resource. If it were mined by another company from the private land to the east, it could provide approximately 15 years of room-and-pillar mining.

The long-term productivity of resources could be affected, but not to a significant degree. Vegetation, wildlife habitat, and visual quality related to exploration drilling and temporary road construction would be restored once reclamation is accomplished and determined to be successful. There could be some decrease in the flow of Winter Quarters Canyon and Woods Canyon creeks if water is intercepted in the mine which would have flowed from surface springs and into the streams. This could decrease the productivity of riparian vegetation and macroinvertebrate populations.

3. Alternative 3

There would be no change from Alternative 2. The coal in the SPR area is too thin to be mined economically, so the amount of coal available in the lease area would not change.

E. Irreversible and Irretrievable Commitments of Resources

1. Alternative 1

The short-term economic loss if the Skyline Mine were closed would be irretrievable. The minable coal reserves not mined under this alternative would still be available for future leasing and mining, but probably at a higher cost. They could be accessed through private lands to the east, in the vicinity of the old Winter Quarters Mine, if they are not accessed through the Skyline Mine.

2. Alternative 2

The loss of vegetation and associated wildlife habitat and decrease in visual quality due to exploration drilling would be irretrievable but

not irreversible. The drilling operations can usually be completed, including reclamation, in one season. It normally takes 3 to 5 years to reestablish vegetation on the sites, and a total of 5 to 10 years for trees to become established and vegetation to blend in with the surrounding areas.

Any loss of flow in the springs or streams due to mining would be irretrievable and potentially irreversible. Various methods could be used to replace some flow, and expanding clays may seal cracks and replace some flow paths. Changes to the ground water system would probably be permanent.

Coal is not a renewable resource. Mining would be an irreversible commitment of the coal itself and other energy resources used in the mining process. Approximately 6,000,000 tons of coal would be irreversibly and irretrievably lost if mining were never allowed under the perennial streams. If the decision is made in the future that allowing mining under the perennial streams is an acceptable risk, it must be made before extraction mining is completed to preclude this loss of coal.

### 3. Alternative 3

Because the coal is too thin to be mined economically under the SPR area, there would be no change from Alternative 2.

## F. Cumulative Impacts

### 1. Alternative 1

Under this alternative, there would be no changes to the current situation. No coal would be mined from the proposed lease tract, and no royalty payments would be received by the federal, state, and local governments. Coal mining would continue in the Skyline Mine adjacent to the proposed lease tract.

The area and ecosystem have been continuously altered by erosion, glacial activity, fires, insect infestations, and other natural processes prior to the appearance of man. The area has been used by man, probably on a seasonal basis, for about the last 9,000 years. European settlement in the 1870's resulted in hunting and trapping of game, timber harvest, livestock grazing, and eventually coal mining.

Livestock grazing on the Wasatch Plateau was extensive in the late 1800's, resulting in extensive watershed damage and erosion. Management of grazing by the Forest Service since 1906 has resulted in significant improvement of resource conditions. Today the range conditions are generally fair. The proposed lease tract includes parts of 5 sheep grazing allotments. Approximately 4,700 sheep graze the area at some time during the summer. Sheep grazing has resulted in a decrease in the number of forbs and an increase in the amount of grass. The present level of grazing will continue unchanged for the foreseeable future.

Coal has been mined in the Winter Quarters area since the 1890's. The Winter Quarters Mine, located on private land just east of the proposed lease tract, operated between 1878 and the 1940's. Remnants of the mine and the town of Winter Quarters are still visible. Most of the area impacted by mining has recovered naturally through time, but environmental impacts at the time of mining were probably more evident. Production is estimated to have been 10.8 million tons. An explosion on May 1, 1900, in the mine killed 199 miners.

The activities planned for the foreseeable future (a timber sale, trail reconstruction, and possibly oil and gas drilling) described in Section I.G., would occur. The timber sale and oil and gas drilling could cause increased vehicle traffic, increased sedimentation in streams, increased dust and noise, and temporary loss or alteration of wildlife habitat. The trail reconstruction would have minimal impact. These activities are consistent with direction in the LRMP.

## 2. Alternative 2

The anticipated impacts to the existing environment were described, by resource category, in the preceding portion of Section IV. The cumulative impacts would be:

- a. 22 million tons of coal would be mined.
- b. Increased water output to Eccles Creek, but with lower TDS levels if mining is done as a part of the Skyline Mine. If a new mine were opened, there would be increased flow in Winter Quarters Creek with slightly decreased quality, but within State standards.
- c. \$46.6 million in royalty payments to federal, state, and local governments.
- d. The planned timber sale, trail reconstruction, and possible oil and gas drilling, would occur (see Section I.G.).

If Coastal States Energy Co. is the successful bidder, they would need to drill approximately 8 coal exploration holes to evaluate coal quality and quantity. If they did not obtain the rights to the coal in the fee lands to the east, they would require one ventilation shaft. If a company other than Coastal obtained the lease, the exploration drilling needs and impacts are expected to be similar.

It is unlikely that the cumulative impacts would cause significant impacts to ground or surface water resources (including associated riparian areas), terrestrial or aquatic wildlife (including threatened, endangered, or sensitive species), vegetation and range, or recreation, although some minor changes could occur. These resources are protected by the stipulations which would be incorporated in the lease under this alternative.

Water intercepted during mining could enter the mine workings and be discharged into Eccles Creek or Winter Quarters Creek, or it could continue to flow down-dip to the west. It is not likely to change the flow in the Price River or Huntington Canyon watersheds or the Colorado River. The water quality of the discharged water could increase, as the water with lower TDS levels from areas mined using limestone rockdust dilute the water with higher TDS levels coming from areas mined using gypsum rockdust in the past.

There would be no change to the transportation system, visual quality, or air quality if Coastal States Energy acquired the lease. They would use existing facilities. If another company acquired the lease and constructed new mine facilities, the access road to the mine and existing roads would be used to transport coal to a currently existing loadout facility. Truck traffic should not impact the town of Scofield, but miners would probably go through Scofield to reach the mine. There would be no significant impact to the transportation system. There would be effects on visual quality if a new mine were constructed, but they would not be significant due to the extensive coal mining facilities already in the area. Effects on air quality would be limited by the terms of a Utah Air Quality Approval Order, and would be localized and insignificant.

Surface disturbance from coal exploration drilling, and possibly oil and gas drilling, are expected to result in removal of a small amount of vegetation, which could affect use by wildlife and livestock. The loss of vegetation would be minor and last only a few years. There would still be sufficient vegetation to maintain current populations and use.

No change in recreational use of the area is expected. Surface impacts are expected to be minimal, and not noticeable to the average forest user.

### 3. Alternative 3

The impacts would be the same as those described under Alternative 2. The SPR areas within the proposed lease tract would not be leased, but they would not be mined even if leased, due to the coal seam thinning to the north. Therefore, the area mined and the resulting impacts would be the same under either Alternative 2 or 3.

## V. PERSONNEL AND PUBLIC INVOLVEMENT

### A. Interdisciplinary Team and Consultants

The following are the Interdisciplinary (ID) Team members and consultants who participated in the environmental analysis:

<u>Specialty</u>	<u>Specialist</u>	<u>Role</u>
Minerals/Geology	Dale Harber	ID Team Leader
Socioeconomics/ BLM Representative	Max Nielson (BLM)	Team Member
Mining	Brent Northrup (BLM)	Team Member
Geology	Tom Rasmussen (BLM)	Team Member
OSM Representative	Floyd McMullen (OSM)	Team Member
Hydrology	Dennis Kelly	Team Member
Wildlife Biology	Steve Romero	Team Member
Vegetation/Range	Leland Matheson	Consultant
Civil Engineering	Brent Barney	Team Member
Fisheries	Paul Burns	Team Member
Visuals/Recreation	Kevin Draper	Consultant
Cultural Resources	Stan McDonald	Consultant

In addition to the ID Team, the following agencies were contacted in regard to application of the Unsuitability Criteria and in compiling resource data:

U.S. Fish and Wildlife Service  
 Utah Division of Wildlife Resources  
 Utah State Historic Preservation Office  
 Utah Fuel Company

### B. Public Contacts

News releases which notified the general public that the Forest Service, and Bureau of Land Management would be evaluating the coal lease application and requesting public comment were published in the Sun Advocate and Emery County Progress newspapers.

Letters were sent to identified interested individuals and organizations requesting comments. Appendix D contains a copy of the letter and a list of individuals and organizations contacted. A summation of the responses is in section I.C. of this report.

## VI. REFERENCES

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APPENDIX A

Tract Delineation Report

JOINT BUREAU OF LAND MANAGEMENT/FOREST SERVICE  
FINDING OF NO SIGNIFICANT IMPACT/DECISION NOTICE/RATIONALE

COAL LEASE APPLICATION UTU-67939  
WINTER QUARTERS TRACT

USDA-FOREST SERVICE, INTERMOUNTAIN REGION  
MANTI-LA SAL NATIONAL FOREST  
FERRON-PRICE RANGER DISTRICT

USDI-BUREAU OF LAND MANAGEMENT, MOAB DISTRICT  
UTAH STATE OFFICE

CARBON COUNTY, UTAH

An Environmental Assessment (EA) which discusses the effects of leasing the Winter Quarters Tract (Lease Application UTU-67939) was prepared jointly by the Forest Service and the Bureau of Land Management (BLM). The Office of Surface Mining Reclamation and Enforcement participated as a cooperating agency. The decisions recorded in this document are based on the environmental analyses documented in the Environmental Assessment for the tract; the Final Environmental Impact Statement, Manti-La Sal National Forest (Forest Plan FEIS), 1986; and Final Environmental Impact Statement for the San Rafael Proposed Resource Management Plan, 1989. The Environmental Assessment for Coal Lease Application UTU-67939, Winter Quarters Tract, is available through the Forest Supervisor's Office of the Manti-La Sal National Forest in Price, Utah, and the Bureau of Land Management, Utah State Office in Salt Lake City, Utah.

On January 10, 1991, Coastal States Energy Company applied to the Bureau of Land Management for leasing of 2,020.02 acres under the Lease-on-Application process contained in Federal Regulations 43 CFR 3425 to extend the life of their Skyline Mine. In response to the application an interagency team delineated the Winter Quarters Tract to be considered for leasing. The delineated tract encompasses 3,351 acres of Federal coal underlying lands administered by the Manti-La Sal National Forest and private lands. It lies directly adjacent to the approved permit area for Coastal's Skyline Mine. If Coastal States Energy Company obtains the tract through competitive bid, it would be accessed from underground workings in the adjacent Mine.

The proposed action is subject to the following authorities: Mineral Leasing Act of 1920, as amended; Federal Coal Leasing Amendments Act of 1976 (FCLAA), as amended; Multiple-Use Sustained Yield Act of 1960; National Forest Management Act of 1976 (NFMA); National Environmental Policy Act of 1969 (NEPA); and Federal Regulations 43 CFR 3400. Development of the lease, which is a separate permitting action, would be subject to these actions and the following: Federal Land Policy and Management Act of 1976 (FLPMA); Surface Mining Control and Reclamation Act of 1977 (SMCRA); Federal Regulations 30 CFR 700 to End (SMCRA Regulations), and the State of Utah Coal Mining and Reclamation Regulatory Program.

The BLM lease decision and Forest Service consent decision are to offer the tract for leasing and subsequent mining as discussed under Alternative C described in the EA prepared for the tract. The tract to be offered for leasing and subsequent mining under this alternative is described as follows:

T. 12 S., R. 6 E., SLM,  
Section 26, S1/2 SE1/4, SE1/4 SW1/4;  
Section 34, lots 1-4, S1/2 NE1/4, SE1/4 NW1/4, E1/2 SW1/4 NW1/4,  
N1/2 S1/2;  
Section 35, all.

T. 13 S., R. 6 E., SLM,  
Section 2, all;  
Section 3, all;  
Section 10, lots 1-2, NE1/4, E1/2 NW1/4;  
Section 11, N1/2, N1/2 S1/2.

Containing 3,291 acres, more or less.

Alternative C best meets the management objectives of the Forest Service as outlined in the Forest Plan and the needs of the general public. It would make additional Federal coal reserves available for competitive leasing, provide an opportunity to extend the life of the Skyline Mine, and be consistent with Forest Service management goals and prescriptions for the area. Any lease issued would include the 18 Forest Service Special Stipulations, including the Stipulation for Lands of the National Forest System Under Jurisdiction of the Department of Agriculture, in addition to standard lease terms (BLM Lease Form 3400-12). The Forest Service Special Stipulations are attached. The private land owners have also elected to apply the Forest Service stipulations to their lands within the delineated tract.

This alternative would involve offering the delineated tract for lease, with the exception of 60 acres which lie within the Fish Creek Semiprimitive Recreation Area. That portion of the delineated tract which lies within the Fish Creek Semiprimitive Recreation Area was excluded based on public comments that the area should be protected from the impacts of mining and the probability that recoverable reserves in that area do not exist and/or can not be accessed.

The EA for the tract and the Proposed Finding of No Significant Impact (PFONSI) were released on August 1, 1995, with the 30-day comment period ending on August 31, 1995. The PFONSI identified Alternative C as the Forest Service preferred alternative. Three letters were received. The first response, from Wendell Koontz of Springville, Utah, had the following comments:

1. Coal resource recovery should be maximized wherever possible and still protect the environmental quality of the forest.

The Forest Service and the BLM worked together to present a coal lease tract for lease which would satisfy the applicant's needs and also provide appropriate environmental protection. The Resource Recovery and Protection Plan and the Permit Application Package are reviewed

to ensure maximum coal recovery and environmental resource protection before it would be approved.

2. Continue the study of subsidence effects in Burnout Canyon.

The Forest Service has committed to continue the study on the subsidence effects in Burnout Canyon until it is completed.

3. Disallowing mining under Woods Canyon and Winter Quarters Creeks could make the tract uneconomic, creating a substantial economic loss to the surrounding communities and state and federal governments. Significant coal resources could be isolated and never recovered.

The BLM has determined that the tract could be economically mined, although conditions might not be as favorable as the applicant would prefer. Stipulation #9 does not preclude future mining under perennial streams if it can be demonstrated that the mining can be done without negatively impacting the streams and adjacent forest resources. Results of the Burnout Canyon study (which are anticipated in 1998), site-specific stream assessments, and any other available data, would be used to quantify the impacts. Granting an exception to Stipulation #9 would require another environmental analysis to disclose the supplemental information obtained.

4. There are not sufficient data to show the Fish Creek Semiprimitive Recreation Area would be degraded by mining impacts.

The thick overburden and the lack of perennial streams within the 60 acres of the delineated tract which lie within the Fish Creek Semiprimitive Recreation Area would probably allow mining with minimal surface impacts. However, Coastal States Energy Company and the BLM have indicated that the coal is too thin to mine or may not be accessible with the longwall method. It is not in the interest of the lessee to require them to pay lease rental fees on lands that they can not mine.

The other two responses were from George and Helen Liodakis and Phil Allred. They requested that the Forest Service Special Stipulations be applied to their private lands located within the lease tract.

We have determined that the proposal is not a major Federal action that would significantly affect the quality of the human environment; therefore, an Environmental Impact Statement is not needed. This determination was made based on the following considerations:

1. Management and public issues were identified during project scoping. Project scoping involved public notices of the proposal with a comment period as well as Interdisciplinary Team reviews and meetings. The preferred alternative would adequately address all issues identified through project scoping, and provides for protection of resources and mitigation of impacts consistent with the Forest Plan.

2. The unsuitability criteria for coal mining contained in Federal Regulations 43 CFR 3461 were addressed in the Forest Plan, Forest Plan FEIS, and the EA for the tract. No areas within the tract were determined to be unsuitable for mining based on the criteria.
3. The potential adverse effects of the proposal can be effectively mitigated by the included special lease stipulations and implementation of the SMCRA Regulations (30 CFR 700 to End) and State of Utah Federal Coal Mining and Reclamation Regulatory Program.
4. The leasing action and anticipated lease development should have no significant adverse affect to cultural and paleontological resources, or floodplains.
5. There will be no adverse impacts to prime or unique rangelands, farmlands, or timberlands; alluvial valley floors; or wetlands.
6. There will be no adverse effects to listed or proposed Threatened, Endangered, and Sensitive plant or animal species. The Biological Evaluation that documents this conclusion and consultation with the U.S. Fish and Wildlife Service is included in the project file.
7. The preferred alternative is consistent with objectives and direction of the Manti-La Sal National Forest Land and Resource Management Plan, 1986, and the San Rafael Proposed Resource Management Plan, 1991. Cumulative impacts would be consistent with projected Forest Plan outputs and thresholds.
8. Coal Mining has been a common and important element of the local economy and culture since the late 1800s. The impacts of underground mining have been observed and monitored for many years. No new or unique methods of mining are likely. The effects of the proposed activity are not likely to be highly controversial.
9. The activity is consistent with identified laws and regulations and would not adversely affect public health and safety.

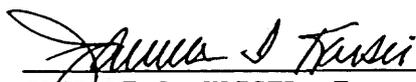
Compliance with the terms and conditions of the lease and other administrative actions associated with the lease, in accordance with Federal Regulations 43 CFR 3400, are the responsibility of the Bureau of Land Management. The review, approval, and enforcement of mining operations within the lease are the responsibility of the Department of Interior, Office of Surface Mining Reclamation and Enforcement under Federal Regulations 30 CFR 700 to End. As required under the Federal Coal Leasing Amendments Act of 1975 and the above regulations, future actions related to the lease which could affect surface resources require consultation and consent of the Forest Service.

The Bureau of Land Management leasing decision is subject to appeal to the Interior Board of Land Appeals. The Forest Service consent decision is subject to administrative review pursuant to 36 CFR Part 215. Any written appeal must

be postmarked or received by the Appeal Deciding Officer, Dale Bosworth, Regional Forester, Intermountain Region, 324 25th Street, Ogden, Utah 84401, within 45 days from the day after publication of the legal notice in the Price Sun Advocate newspaper. Appeals must meet the content requirements of 36 CFR 215.14.

Implementation of this decision may take place no sooner than 50 calendar days following publication of this decision in the Price Sun Advocate, the newspaper of record for the Manti-La Sal National Forest, published in Price, Utah.

Consent by:

  
JANETTE S. KAISER, Forest Supervisor  
USDA Forest Service, Manti-La Sal National Forest

Date: 10-23-95

Approved by:

  
G. WILLIAM LAMB, ~~Acting~~ State Director  
USDI Bureau of Land Management, Utah

Date: 1/23/96



# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

Utah State Office  
P.O. Box 45155  
Salt Lake City, UT 84145-0155  
<http://www.blm.gov>



IN REPLY REFER TO :

3482  
UTU-67939  
UTU-73338  
(UT-923)

OCT 26 2005

CERTIFIED MAIL-Return Receipt Requested

05-11-07-11

Ms. Mary Ann Wright  
Director of Mining  
Utah Division of Oil, Gas and Mining  
1594 West North Temple Street, Suite 1210  
P.O. Box 145801  
Salt Lake City, Utah 84114-5801

Re: Canyon Fuel Company (CFC), Skyline Mine, Resource Recovery and Protection Plan (R2P2),  
Federal Coal Lease UTU-67939, August, 2005, Approval.

Dear Mary Ann:

On November 27, 2002 the Bureau of Land Management (BLM) recommended approval of the R2P2 as proposed by CFC and determined that the plan met Maximum Economic Recovery requirements for Federal Coal Lease UTU-67939. On August 1, 2005, the Bureau of Land Management (BLM) received a written request from Canyon Fuel Company (CFC) concerning a request to modify the approved mining plan (R2P2) for the Skyline Mine. The modification request involved minor changes to the R2P2 including some changes in longwall panel configuration in the Winter Quarters lease (UTU-67939). BLM approved these minor changes for the R2P2 on September 22, 2005. Please consider this letter as our recommendation for the R2P2 Federal Mining Plan action.

If you have any comments or questions, please contact Steve Rigby at the Price Field Office at 435-636-3604 or Stan Perkes at 801-539-4036.

Sincerely,

JAMES F KOHLER

James F. Kohler  
Chief, Solid Minerals Branch

cc: UT-070  
UT-923

Office of Surface Mining, Western Support Center, P.O. Box 4667  
Denver, CO 80201-6667  
Wes Sorenson, Canyon Fuel Company LLC, HC 35 Box 380  
Helper, Utah 84526  
SP-SA DogmletterWQR2P2Mltr10-26-05



United States Department of the Interior  
FISH AND WILDLIFE SERVICE

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2369 WEST ORTON CIRCLE, SUITE 50  
WEST VALLEY CITY, UTAH 84119

RECEIVED

NOV 26 2002

DIV OF OIL GAS & MINING

In Reply Refer To

FWS/R6  
ES/UT

November 25, 2002

Joe Helfrich  
Utah Division of Oil, Gas & Mining  
1594 West North Temple, Suite 1210  
Box 145801  
Salt Lake City, Utah 84114-5801

*Incoming*  
*C/007/005*

RE: Informal section 7 Endangered Species Consultation, 1996 Biological Opinion  
Coordinated Review Winter Quarters Tract, Canyon Fuel Co. LLC, Skyline Mine,  
C/007/005-SR021

Dear Mr. Helfrich:

The U.S. Fish and Wildlife Service (Service) has reviewed your letters of November 15 and November 21, 2002. Potential impacts to proposed or listed species from mining activities have been previously addressed in the Service's September 24, 1996 Biological Opinion and Conference Report on Surface Coal Mining and Reclamation Operations under the Surface Coal Mining and Reclamation Act of 1977. As part of the terms and conditions of this BO, the regulatory authority must implement and require compliance with any species-specific protective measures developed by the Service field office and the regulatory authority.

Surface water depletions of more than 100 acre/ft/yr adversely affect four listed threatened and endangered fish species of the upper Colorado River drainage. Consequently, the U.S. Fish and Wildlife Service require mitigation when water depletions exceed 100 acre-feet annually. None of the approximately 51,870,720 gallons/yr (159 acre/feet/year) of water consumed for mining is from surface sources nor does it deplete surface water sources. The projected mine water discharge rate of 2,800 gpm (4517 acre/ft/yr) to Eccles Creek is water the mining operators have estimated to be 4,000 to 25,000 years old. Thus there is no depletion to the upper Colorado River drainage from this project.

Based on the estimation that this project does not result in a depletion to the upper Colorado River drainage, we concur with your "no effect" determination for the bonytail, humpback chub, Colorado pikeminnow, razorback sucker and critical habitat. We also concur with your "no effect" determination for the remaining four threatened and endangered species and critical habitat included in the species list for Carbon County: Mexican spotted owl, bald eagle, black-footed ferret and Graham beardtongue. Therefore, no endangered species-specific protective measures for these four are considered necessary for the subject project. Should project plans

change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

Only a Federal agency can enter into formal Endangered Species Act section 7 consultation with the Service. A Federal agency may designate a non-Federal representative to conduct informal consultation or prepare a biological assessment by giving written notice to the Service of such a designation. The ultimate responsibility for compliance with ESA section 7, however, remains with the Federal agency.

We commend your agency's continued efforts to conserve endangered and sensitive species, including raptors. In this instance, we appreciate that the permittee has committed in the lease tract application to conduct a raptor survey in the early summer of 2003. As you are aware, we have developed and recommend the *Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances* to assist agencies and individuals with raptor-sensitive project planning. Seasonal and spatial buffers of inactivity are recommended for raptor nest sites.

We appreciate your interest in conserving endangered species. If further assistance is needed or you have any questions, please contact Diana Whittington, at (801) 975-3330 extension 128.

Sincerely,



Henry R. Maddux  
Utah Field Supervisor

cc: Office of Surface Mining, (Attention: Ron Sassaman), Denver Field Division, 1999  
Broadway, Suite 3320, Denver, Colorado 80202-5733

UDWR - Salt Lake City (Attn: Frank Howe)

**From:** Jim Dykman  
**To:** Joe Helfrich  
**Date:** 11/15/02 7:06AM  
**Subject:** Re: Winter Quarters Tract, Canyon Fuel Co., Skyline Mine, C/007/005/SR02I

This email confirms No Historic Properties Affected. j.l. dykmann 11.15.02

Jim Dykmann  
Deputy Preservation Officer, Utah  
300 Rio Grande  
Salt Lake City, Utah 84101  
801-533-3555  
jdykman@utah.gov

>>> Joe Helfrich 11/14/02 03:01PM >>>  
Jim,

By way of correspondence to you dated October 8, 2002 we asked for your concurrence on the referenced project. I realize the 30 day lapse is an automatic ok. However, for our records an "E" mail response would be appreciated.....Thanks so much.....Joe



United States  
Department of  
Agriculture

Forest  
Service

Manti-La Sal  
National Forest

Supervisor's Office  
599 West Price River Drive  
Price, UT 84501  
Phone # (435) 637-2817  
Fax # (435) 637-4940

File Code: 2820-4

Date: December 2, 2005

Ms. Mary Ann Wright  
Associate Director  
Utah Division of Oil, Gas and Mining  
1594 West North Temple, Suite 1210  
PO. Box 145801  
Salt Lake City, UT 84114-5801

05-12-05

RE: North Lease Subsidence Mining, Canyon Fuel Company, LLC, Skyline Mine, C/007/0005, Task ID #1976

Dear Ms. Wright:

By letters of October 23, 2002 and November 21, 2002, we provided consent to the operation and reclamation plan for proposed development within the Winter Quarters lease by Skyline Mine as required by 30 U.S.C. § 207(c). Consent to the plan for first mining was effective immediately. However, consent to the portion of the plan pertaining to full-extraction mining was made contingent on the provision of additional information and clarification that was identified in the letters.

As of October 31, 2005, we have received all of the additional information and clarifications requested in the 2002 consent letters. This information includes the Canyon Fuel Company response to Technical Analysis Letter #1976, dated May, 2005, the Cumulative Hydrologic Impact Assessment (latest revision, October 21, 2005), and the Technical Analysis (October 31, 2005). We were able to use these data in conjunction with the Skyline Mine Burnout Canyon Study to make a determination that full-extraction mining would be consistent with lease stipulation and the Manti-La Sal National Forest Land and Resource Management Plan. Therefore, the contingencies for consent to full-extraction mining set for in those letters have been met, and the consent granted in 2002 is now effective.

Please contact Dale Harber at (435) 636-3548 if you have any questions.

Sincerely,

*Acting for*  
ALICE B. CARLTON  
Forest Supervisor

cc: Pete Rutledge, Office of Surface Mining



UNITED STATES

DEPARTMENT OF THE INTERIOR

This mining plan approval document is issued by the United States of America to:

Canyon Fuel Company, LLC  
HC 35 Box 380  
Helper, Utah 84526

for a mining plan modification for Federal lease UTU-67939 at the Skyline Mine. The approval is subject to the following conditions. Canyon Fuel Company, LLC is hereinafter referred to as the operator.

1. Statutes and Regulations.--This mining plan approval is issued pursuant to Federal lease UTU-67939; the Mineral Leasing Act of 1920, as amended (30 U.S.C. 181 et seq.); and in the case of acquired lands, the Mineral Leasing Act for Acquired Lands of 1947, as amended (30 U.S.C. 351 et seq.). This mining plan approval is subject to all applicable regulations of the Secretary of the Interior which are now or hereafter in force; and all such regulations are made a part hereof. The operator shall comply with the provisions of the Water Pollution Control Act (33 U.S.C. 1151 et seq.), the Clean Air Act (42 U.S.C. 7401 et seq.), and other applicable Federal laws.
2. This document approves the mining plan modification for Federal lease UTU-67939 at the Skyline Mine and authorizes full extraction by longwall mining methods on the Federal lease within the area of mining plan approval. This mining plan modification authorization expands the approved mining plan area into the following Federal coal lands:

Township 12 South, Range 6 East SL Meridian Utah

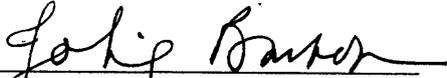
Section 26, S $\frac{1}{2}$ SE $\frac{1}{4}$ , SE $\frac{1}{4}$ SW  $\frac{1}{4}$ ;  
Section 34, Lots 1, 2, 3, and 4, SE $\frac{1}{4}$ NW $\frac{1}{4}$ , E $\frac{1}{2}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ , N $\frac{1}{2}$ S $\frac{1}{2}$ ;  
Section 35, All.

Township 13 South, Range 6 East SL Meridian Utah

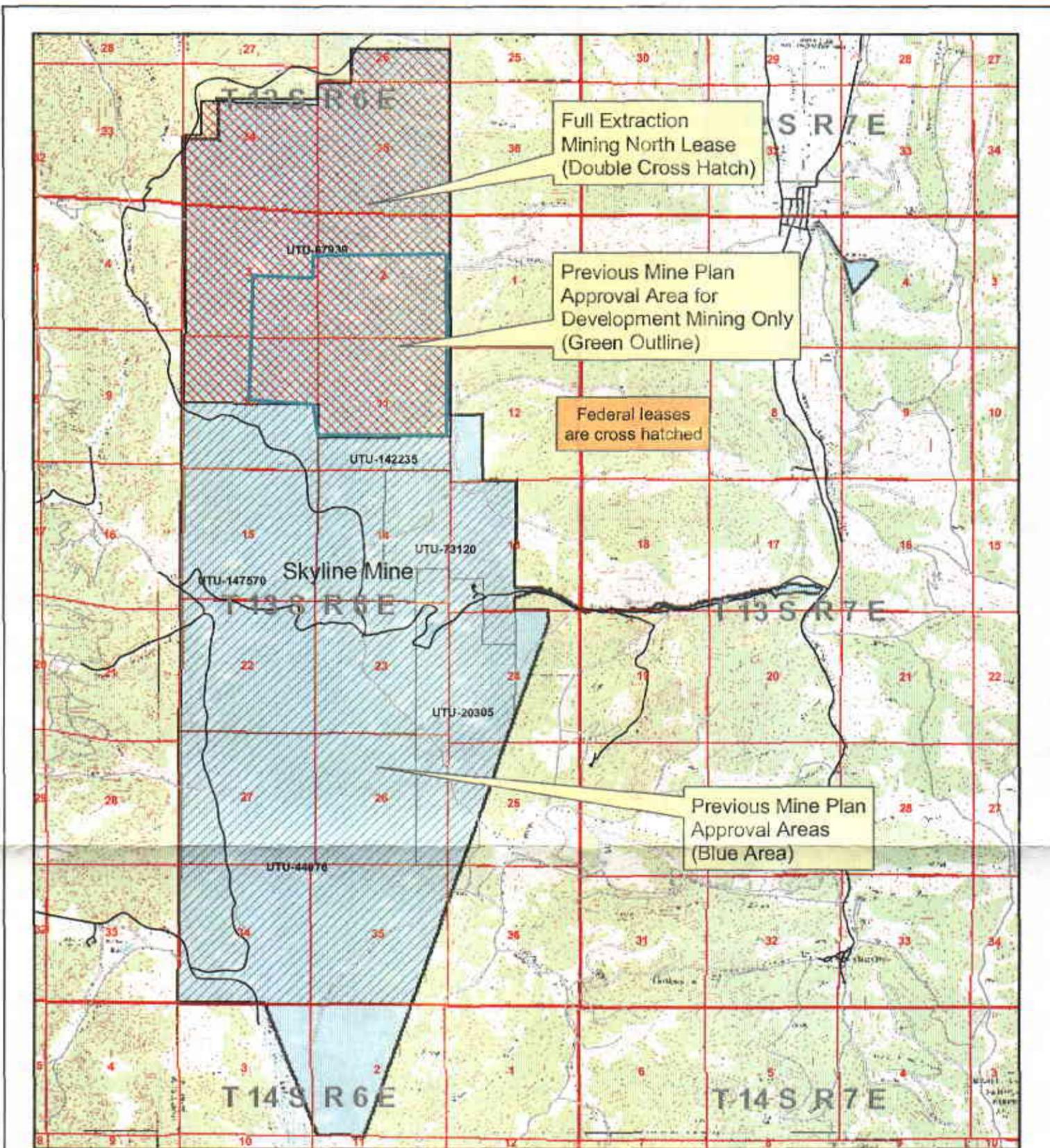
Section 2, All;  
Section 3, All;  
Section 10, Lots 1, and 2, NE $\frac{1}{4}$ , E $\frac{1}{2}$ NW $\frac{1}{4}$ ;  
Section 11, N $\frac{1}{2}$ , N $\frac{1}{2}$ S $\frac{1}{2}$ .

This mining plan modification also authorizes full extraction mining in all of Federal lease UTU-67939. These lands encompass approximately 2,011 acres and are found on the USGS 7.5 minute Quadrangle map of Scofield, Utah, and as shown on the map appended hereto as Attachment A.

3. The operator shall conduct coal mining operations only as described in the complete permit application package, and approved by the Utah Division of Oil, Gas and Mining, except as otherwise directed in the conditions of this mining plan approval.
4. The operator shall comply with the terms and conditions of the lease, this mining plan approval, and the requirements of the Utah State Permit No. C/007/0005 issued under the Utah State program, approved pursuant to the Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1201 et seq.).
5. This mining plan approval shall be binding on any person conducting coal development or mining operations under the approved mining plan and shall remain in effect until superseded, canceled, or withdrawn.
6. If during mining operations unidentified prehistoric or historic resources are discovered, the operator shall ensure that the resources are not disturbed and shall notify Utah Division of Oil, Gas and Minerals and the Office of Surface Mining Reclamation and Enforcement (OSM). The operator shall take such actions as are required by Utah Division of Oil, Gas, and Minerals in coordination with OSM.
7. The Secretary retains jurisdiction to modify or cancel this approval, as required, on the basis of further consultation with the U.S. Fish and Wildlife Service pursuant to section 7 of the Endangered Species Act, as amended, 16 U.S.C. 1531 et seq.

  
Acting Assistant Secretary  
Land and Minerals Management

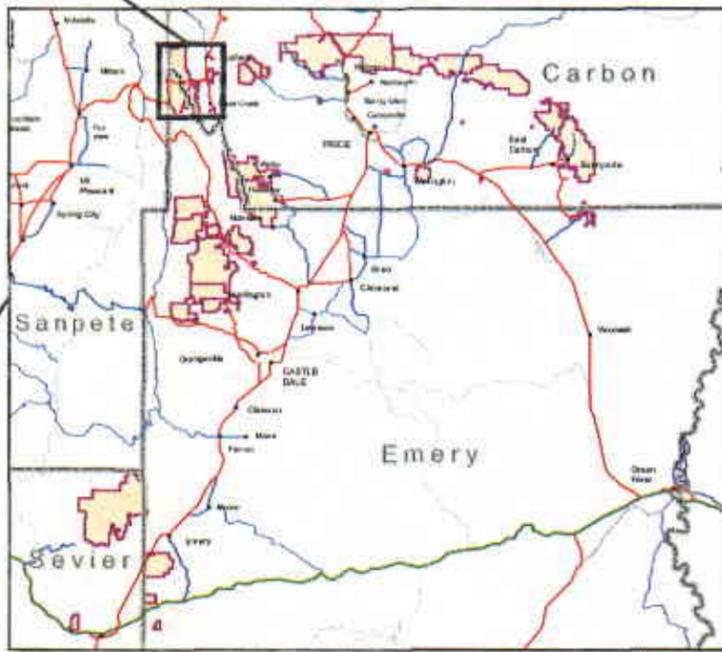
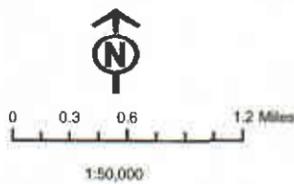
2-24-06  
Date



## Skyline Mine Mining Plan Approval Area

ACT0070005  
Carbon & Emery County, Utah  
Oct. 2005

Township 13 South Range 6 & 7 East  
Township 14 South Range 6 & 7 East  
File: N:\gts\coal\coalareamaps\C0070005Fed.pdf



Locator Map

**PERMIT  
C/007/0005**

**STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING  
1594 West North Temple  
Box 145801  
Salt Lake City, Utah 84114-5801  
(801) 538-5340**

This permit, C/007/0005, is issued for the state of Utah by the Utah Division of Oil, Gas and Mining (DOGM) to:

**Canyon Fuel Company, LLC  
6955 South Union Park Center, Suite 540  
Midvale, Utah 84047  
(801) 596-7111**

for the Skyline Mine. Canyon Fuel Company, LLC is the lessee of federal, state and fee-owned property. A performance bond is filed with the DOGM in the amount of \$5,076,00.00, payable to the state of Utah, Division of Oil, Gas and Mining and the Office of Surface Mining Reclamation and Enforcement (OSMRE). DOGM must receive a copy of this permit signed and dated by the permittee.

**Sec. 1 STATUTES AND REGULATIONS** - This permit is issued pursuant to the Utah Coal Mining and Reclamation Act of 1979, Utah Code Annotated (UCA) 40-10-1 et seq, hereafter referred to as the Act.

**Sec. 2 PERMIT AREA** - The permittee is authorized to conduct coal mining and reclamation operations on the following described lands within the permit area at the Skyline Mine situated in the state of Utah, Carbon County, and located:

**Township 12 South, Range 6 East, SLBM**

Section 26: S1/2SE1/4, SE1/4SW1/4,  
Section 34: Lots 1-4, S1/2NE1/4, SE1/4NW1/4,  
E1/2SW1/4NW1/4,N1/2S1/2;  
Section 35: All

**Township 13 South, Range 6 East, SLBM**

Section 2: All,  
Section 3: All,  
Section 10: All,

Section 11: All,  
Section 12: SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>, NW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>,  
Section 13: W<sup>1</sup>/<sub>2</sub>, portion of SE<sup>1</sup>/<sub>4</sub> associated with coal conveyance system,  
Section 14: All,  
Section 15: All,  
Section 22: All,  
Section 23: All,  
Section 24: All area west of Connelville Fault,  
Section 25: All area west of Connelville Fault, All area associated with buried power line,  
Section 26: All,  
Section 27: All,  
Section 34: All,  
Section 35: All area west of Connelville Fault, and  
Section 36: All area west of Connelville Fault, All area associated with buried power line.

**Township 13 South, Range 7 East, SLBM**

Section 4: Portion of SW<sup>1</sup>/<sub>4</sub>, Portion of NW<sup>1</sup>/<sub>4</sub> (includes access roads and area associated with a waste rock disposal site)  
Section 5: Portion of NE<sup>1</sup>/<sub>4</sub> (includes access roads and area associated with a waste rock disposal site)  
Sections 17 and 18: All or portions of these sections which also includes areas for use as access roads and rail loading facilities. Rights of way and surface easements are also included for construction of a coal conveyance system from the mine portal area down Eccles Canyon to the coal storage and loadout facility at the mouth of its canyon.

**Township 14 South, Range 6 East, SLBM**

Sections 2 and 3: A parcel of land commencing at the section corners of Sections 33 and 34, Township 13 South, Range 6 East and Sections 3 and 4, Township 14 South, Range 6 East, Salt Lake Base Meridian, thence East along the North boundary of Section 3 for a distance of 3,650 feet, more or less, herein called the point of beginning for this tract; thence South 20° 00' 00" East along the west line of the tract for 5,800 feet, more or less, thence 90° 00' 00" East along the south line of the tract for 1,800 feet, more or less, thence North 21° 00' 00" East along the east line of the tract for 5,800 feet, more or less, thence North 90° 00' 00" West along the north line of the tract for 5,700 feet, more or less, to the point of beginning and containing 459 acres, more or less.  
Section 3: Portion of the NE<sup>1</sup>/<sub>4</sub> associated with a buried water line.

This legal description is for the permit area of the Skyline Mine included in the mining and reclamation plan on file at the Division as shown on Drawing 1.6-3 Skyline Mines Permit Area. The permittee is authorized to conduct coal mining and reclamation operations on the foregoing described property subject to the conditions of the leases, including all conditions and all other applicable conditions, laws and regulations.

**Sec. 3 COMPLIANCE** - The permittee will comply with the terms and conditions of the permit, all applicable performance standards and requirements of the State Program.

**Sec. 4 PERMIT TERM** - This permit expires on April 30, 2007.

**Sec. 5 ASSIGNMENT OF PERMIT RIGHTS** - The permit rights may not be transferred, assigned or sold without the approval of the Director, DOGM. Transfer, assignment or sale of permit rights must be done in accordance with applicable regulations, including but not limited to 30 CFR 740.13(e) and R645-303.

**Sec. 6 RIGHT OF ENTRY** - The permittee shall allow the authorized representative of the DOGM, including but not limited to inspectors, and representatives of OSMRE, without advance notice or a search warrant, upon presentation of appropriate credentials, and without delay to:

A. have the rights of entry provided for in 30 CFR 840.12, R645-400-110, 30 CFR 842.13 and R645-400-220; and,

B. be accompanied by private persons for the purpose of conducting an inspection in accordance with R645-400-100 and 30 CFR 842, when the inspection is in response to an alleged violation reported by the private person.

**Sec. 7 SCOPE OF OPERATIONS** - The permittee shall conduct coal mining and reclamation operations only on those lands specifically designated as within the permit area on the maps submitted in the mining and reclamation plan and permit application and approved for the term of the permit and which are subject to the performance bond.

**Sec. 8 ENVIRONMENTAL IMPACTS** - The permittee shall minimize any adverse impact to the environment or public health and safety through but not limited to:

A. accelerated monitoring to determine the nature and extent of noncompliance and the results of the noncompliance;

B. immediate implementation of measures necessary to comply; and

C. warning, as soon as possible after learning of such noncompliance, any person whose health and safety is in imminent danger due to the noncompliance.

**Sec. 9 DISPOSAL OF POLLUTANTS** - The permittee shall dispose of solids, sludge, filter backwash or pollutants in the course of treatment or control of waters or emissions to the air in the manner required by the approved Utah State Program and the Federal Lands Program which prevents violation of any applicable state or federal law.

**Sec. 10 CONDUCT OF OPERATIONS** - The permittee shall conduct its operations:

- A. in accordance with the terms of the permit to prevent significant, imminent environmental harm to the health and safety of the public; and
- B. utilizing methods specified as conditions of the permit by DOGM in approving alternative methods of compliance with the performance standards of the Act, the approved Utah State Program and the Federal Lands Program.

**Sec. 11 EXISTING STRUCTURES** - As applicable, the permittee will comply with R645-301 and R645-302 for compliance, modification, or abandonment of existing structures.

**Sec. 12 RECLAMATION FEE PAYMENT** - The permittee shall pay all reclamation fees required by 30 CFR part 870 for coal produced under the permit, for sale, transfer or use.

**Sec. 13 AUTHORIZED AGENT** - The permittee shall provide the names, addresses and telephone numbers of persons responsible for operations under the permit to whom notices and orders are to be delivered.

**Sec. 14 COMPLIANCE WITH OTHER LAWS** - The permittee shall comply with the provisions of the Water Pollution Control Act (33 USC 1151 et seq,) and the Clean Air Act (42 USC 7401 et seq), UCA 26-11-1 et seq, and UCA 26-13-1 et seq.

**Sec. 15 PERMIT RENEWAL** - Upon expiration, this permit may be renewed for areas within the boundaries of the existing permit in accordance with the Act, the approved Utah State Program and the Federal Lands Program.

**Sec. 16 CULTURAL RESOURCES** - If during the course of mining operations, previously unidentified cultural resources are discovered, the permittee shall ensure that the site(s) is not disturbed and shall notify DOGM. DOGM, after coordination with OSMRE, shall inform the permittee of necessary actions required. The permittee shall implement the mitigation measures required by DOGM within the time frame specified by DOGM.

**Sec. 17 APPEALS** - The permittee shall have the right to appeal as provided for under R645-300.

**Sec. 18 SPECIAL CONDITIONS** - There are special conditions associated with this permitting action attached as Attachment A.

The above conditions (Secs. 1-18) are also imposed upon the permittee's agents and employees. The failure or refusal of any of these persons to comply with these conditions shall be deemed a failure of the permittee to comply with the terms of this permit and the lease. The permittee shall require his agents, contractors and subcontractors involved in activities concerning this permit to include these conditions in the contracts between and among them. These conditions may be revised or amended, in writing, by the mutual consent of DOGM and the permittee at any time to adjust to changed conditions or to correct an oversight. DOGM may amend these conditions at any time without the consent of the permittee in order to make them consistent with any new federal or state statutes and any new regulations.

**THE STATE OF UTAH**

By: John R. Bay

Date: 12/2/2005

I certify that I have read, understand and accept the requirements of this permit and any special conditions attached.

\_\_\_\_\_  
Authorized Representative of the Permittee

Date: \_\_\_\_\_

**ATTACHMENT A**  
**Special Conditions**  
**C/007/0005**

- 1) Canyon Fuel Company, LLC must submit water quality data for the Skyline Mine in an electronic format through the Electronic Data Input web site, <http://linux1.ogm.utah.gov/cgi-bin/appx-ogm.cgi>
- 2) Canyon Fuel Company, LLC must continue to submit to the Division all studies and data to update the PHC/MRP as a result of the mine inflows. As water studies are finalized, they must be submitted to the Division within 14 days of completion.
- 3) Canyon Fuel Company, LLC must submit cumulative monthly flow data for discharges into Electric Lake and Eccles Creek. This monthly data must be submitted in the first week of the following month.
- 4) Canyon Fuel Company, LLC may only conduct "development" mining in federal coal lease UTU-67939 until full extraction mining is approved by the Assistant Secretary of Land and Minerals at the Department of Interior.

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**State Decision Document**

**Canyon Fuel Company, LLC  
North Lease – UTU-067939  
Full Extraction Mining  
Skyline Mine  
C/007/0005**

**December 2, 2005**

**UTAH DIVISION OF OIL, GAS AND MINING  
STATE DECISION DOCUMENT AND  
TECHNICAL ANALYSIS**

**Canyon Fuel Company, LLC.  
North Lease Full Extraction Mining  
Skyline Mine  
C/007/0005**

**CONTENTS**

- \* Administrative Overview
- \* Location Map
- \* Permitting Chronology
- \* Findings, dated December 2, 2005
- \* Permit, dated December 2, 2005
- \* Technical Analysis, dated October 31, 2005
- \* Cumulative Hydrologic Impact Assessment, dated November 1, 2005
- \* Decision Notice and Finding of No Significant Impact for Winter Quarters Tract, dated January 23, 1996
- \* Determination of Completeness, October 29, 2004
- \* Affidavits of Publication (Sun Advocate)
- \* AVS Recommendation, dated November 16, 2005
- \* OSM Determination for Mining Plan Modification, dated September 27, 2004
- \* Letters of Concurrence & Consultation
  - USFWS, letter dated November 25, 2002
  - SHPO, e-mail dated November 15, 2002
  - BLM, R2P2 recommendation, letter dated October 26, 2005
  - Forest Service, Concurrence Letter, letter dated December 2, 2005

## **ADMINISTRATIVE OVERVIEW**

Canyon Fuel Company, LLC  
North Lease Full Extraction Mining  
Skyline Mine  
C/007/0005

Carbon County, Utah

December 2, 2005

### **PROPOSAL:**

Canyon Fuel Company, LLC proposes to do full extraction mining in the North Lease extension to the Skyline Mine. Development mining in the North Lease received mining plan approved in December 2002 in part of the north lease. There are no surface facilities or disturbances planned for this proposal. This lease is accessed via the underground works and mining will be conducted using longwall for full extraction. Mining will occur in the Lower O'Conner A seam. It is anticipated that the mine will produce nominally four (4) million tons of coal per year.

### **BACKGROUND:**

The Mining and Reclamation Plan (MRP) for the Skyline Mine was originally approved by the Office of Surface Mining Reclamation and Enforcement (OSMRE) on June 20, 1980. The Permittee was Coastal States Energy Company and the Operator was Utah Fuel Company. On July 20, 1984 a revised permit was issued which authorized the use of a waste rock disposal site near the town of Scofield. On March 28, 1985 the Division of Oil Gas and Mining (DOGGM) and OSM determined that the permit would expire on April 30, 1987 five years from the date of initial operations, and notified the Operator accordingly. The Permittee submitted a timely application for permit renewal in 1986.

Due to numerous problems in formatting and technical issues associated with the original MRP, the mine operated under short-term permits from April 30, 1987 to December 1, 1989 when a renewal was issued. That renewed permit was scheduled to expire on April 30, 1992, ten years from the date of initial operations. On December 31, 1991 Coastal States Energy Company submitted another application for permit renewal which included an updated Mining and Reclamation Plan formatted to the new R614 (R645) regulations. The permit was renewed on May 1, 1992. The permit was transferred from Coastal States Energy Company to Canyon Fuel Company, LLC on December 20, 1996.

The renewed permit for an additional five-year period until April 30, 1997 was conditioned upon satisfactorily complying with a Division Order that required additional PHC information. This condition was met on October 3, 1997.

The original application for the Winter Quarters lease was submitted in November 1996 and withdrawn in September 1997. A 28-acre IBC on fee land was approved on August 25, 2000. A fee lease to increase the permit area by 459 acres was approved on April 24, 2001. The permit was renewed on April 30, 2002 with five conditions.

In 2001 Canyon Fuel started to encounter significant amounts of water in the mine. This prompted them to move their mining efforts toward the North Lease. In order to access the North Lease, the company applied for an 84-acre Incidental Boundary Change on a fee lease which was approved on August 16, 2002.

The Skyline mine plan area (including the North Lease) incorporates federal coal leases and one Carbon County coal lease (10,374 acres of permit area with 79.12 acres of surface disturbance). The surface disturbed area includes disturbances (surface facilities) on Forest Service lands and private land (Unit Train Loadout and Waste Rock Disposal sites). The access to the Waste Rock Disposal Pit is a private road and is not scheduled for reclamation.

Canyon Fuel Company, LLC, submitted the permit application package for adding the North Lease (Winter Quarters) Tract to the Skyline Mine on September 4, 2002. Development mining in the North Lease received mining plan approval on December 20, 2002.

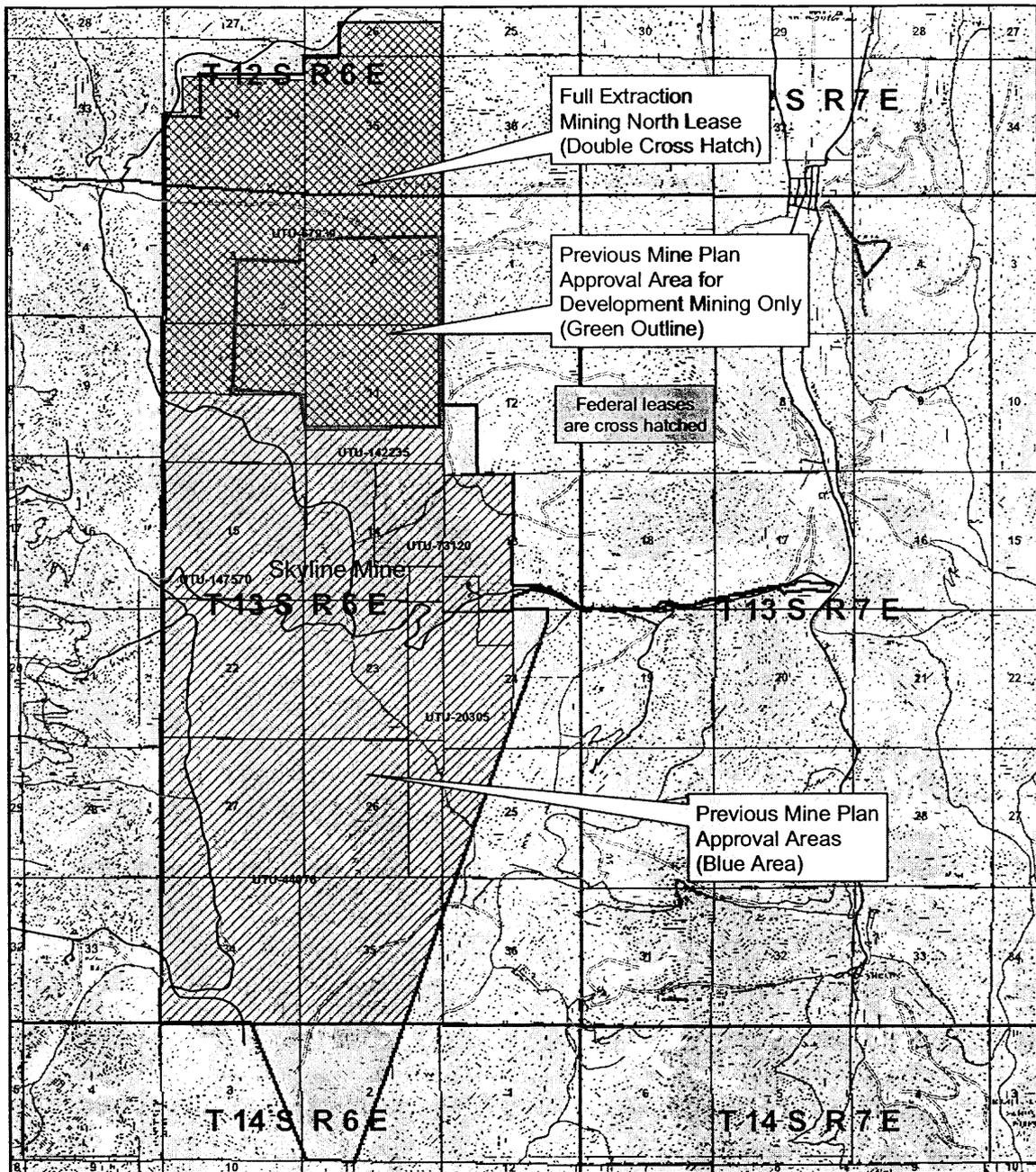
#### **ANALYSIS:**

The Division of Oil Gas and Mining has conducted an Administrative and Technical Analysis of the proposed mine Permit Application Package and has produced a written TA. All appropriate State and Federal agencies have been consulted regarding this proposal. It has been determined that the Applicant has the legal right to enter and conduct mining operations in the proposed permit area through acquired leases. The probable hydrologic consequences of the action have been analyzed and a Cumulative Hydrologic Impact Assessment (CHIA) has been prepared. All requirements for public participation have been satisfied. The application meets the requirements of the Utah Coal Regulatory Program.

#### **RECOMMENDATION:**

This recommendation is based on the complete permit application package (PAP), the Technical Analysis (TA) conducted by the Division, the Cumulative Hydrologic Impact Assessment (CHIA) also prepared by the Division, and the administrative record. Canyon Fuel Company, LLC has demonstrated that mining within the permit boundary can be done in conformance with the Surface Mining Control and Reclamation Act, and the corresponding Utah Act and performance standards. The 510(c) report on the Applicant Violator System was verified for this mine on November 16, 2005 and there are no violations.

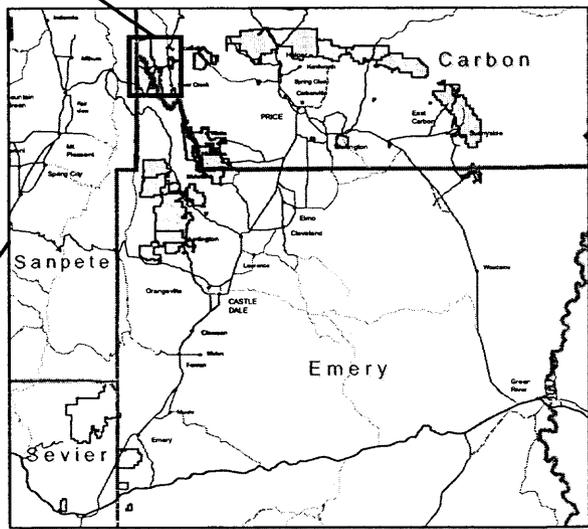
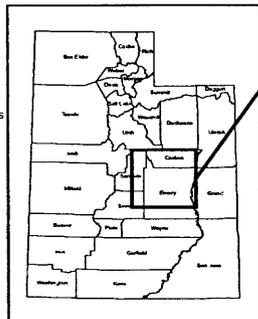
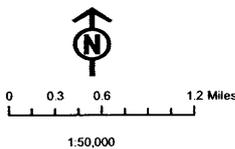
It is recommended that approval be given for full extraction mining in the North Lease extension to the Skyline Mine with the conditions summarized as Attachment A to the Permit.



## Skyline Mine Mining Plan Approval Area

ACT0070005  
Carbon & Emery County, Utah  
Oct. 2005

Township 13 South Range 6 & 7 East  
Township 14 South Range 6 & 7 East  
File: N:\gis\coal\coalareamaps\C0070005Fed.pdf



Locator Map

## PERMITTING CHRONOLOGY

Canyon Fuel Company, LLC  
North Lease Full Extraction Mining  
Skyline Mine  
C/007/0005  
Carbon County, Utah

**December 2, 2005**

July 1, 2004	Canyon Fuel Company, LLC , Inc. submits the permit application package for adding the North Lease (Winter Quarters)Tract to the Skyline Mine.
September 27, 2004	OSM determination that this application is a mining plan modification.
October 29, 2004	The permit application was determined administratively complete. Canyon Fuel Company, LLC is instructed to publish a Notice of Complete Application in the local newspaper and place a copy of the application in the county courthouse.
November 5, 2004	The Division sent letters to state, federal and local planning agencies notifying them of the complete permit application and soliciting their comments.
November 18, 25, and December 2 and 9, 2004	This permitting action for full extraction in the North Lease (Winter Quarters) Tract at the Skyline Mine, is published in the <u>Sun Advocate</u> for four consecutive weeks.
January 9, 2005	End of public comment period.
October 21, 2005	TA completed.
October 26, 2005	R2P2 modification approved by Bureau of Land Management.
October 29, 2005	CHIA completed.
November 15, 2005	AVS check completed with issue recommendation.
December 1, 2005	Forest Service concurs with full extraction mining for the North Lease.
December 2, 2005	Decision Document completed and Permit issued. Sent to OSM.

## FINDINGS

Canyon Fuel Company, LLC  
North Lease Full Extraction Mining  
Skyline Mine  
C/007/0005  
Carbon County, Utah

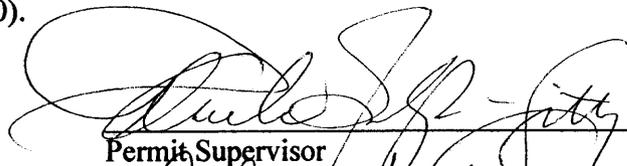
**December 2, 2005**

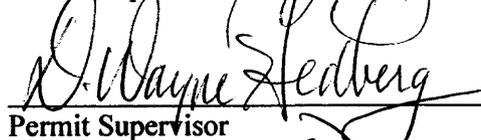
1. The permit application for the full extraction of coal from the North Lease at the Skyline Mine is accurate and complete and all requirements of the Surface Mining Control and Reclamation Act, and the approved Utah State Program (the "Act") are in compliance. See Technical Analysis dated October 21, 2005 (R645-300-133.100)
2. The applicant proposes acceptable practices for the reclamation of disturbed lands. The Division has determined that reclamation, as required by the Act can be feasibly accomplished following the approved plan with the attached permit conditions. No new surface disturbance will occur with the full extraction in the North Lease Extension. (R645-300-133.710)
3. An assessment of the probable cumulative impacts of all anticipated coal mining and reclamation activities in the general area on the hydrologic balance has been conducted by the Division and no significant impacts were identified. See CHIA dated October 29, 2005. The Mining and Reclamation Plan (MRP) proposed under the revised application has been designed to prevent damage to the hydrologic balance in the permit area and in associated off-site area (R645-300-133.400 and UCA 40-10-11 (2)(c)).
4. The proposed lands to be included within the permit area are:
  - a. Not included within an area designated unsuitable for underground coal mining operation (R645-300-133.220);
  - b. not within an area under study for designated land unsuitable for underground coal mining operations (R645-300-133.210);
  - c. not on any lands subject to the prohibitions or limitation of 30 CFR 761.11 {a} (national parks, etc), 761.11 {f} (public buildings, etc.) and 761.11 {g} (cemeteries);
  - d. not within 100 feet of a public road except at the location where the public road accesses the property(R645-300-133.220); and
  - e. not within 300 feet of any occupied dwelling (R645-300-133.220).
5. The operation would not affect the continued existence of any threatened or endangered species or result in the destruction or adverse modification of their critical habitats as determined under the Endangered Species Act of 1973. See Technical Analysis dated

October 31, 2005 and letter from U. S. Fish and Wildlife Services dated November 25, 2002 (R645-300-133.500).

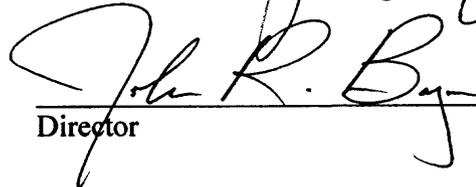
6. The Division's issuance of a permit is in compliance with the National Historic Preservation Act and implementing regulations (36 CFR 800). See Technical Analysis October 21, 2005. See e-mail from State Historic Preservation Office, dated November 15, 2002. (R645-300-133.600)
7. The applicant has the legal right to enter and complete mining activities in the permit area through the federal coal lease issued by the Bureau of Land Management. (Lease Document for Coal Lease UTU-67939, effective September 1, 1996.) (R645-300-133.300)
8. A 510 (c) report has been run on the Applicant Violator System (AVS), which shows that: prior violations of applicable laws and regulations have been corrected; neither Canyon Fuel Company, LLC nor any affiliated company, are delinquent in payment of fees for the Abandoned Mine Reclamation Fund; and the applicant does not control and has not controlled mining operations with demonstrated pattern of willful violations of the Act of such nature, duration, and with such resulting irreparable damage to the environment as to indicate an intent not to comply with the provisions of the Act (A 510 (c) report was run on November 16, 2005, see memo to file dated November 16, 2005). (R645-300-133.730)
9. Underground mining operations to be performed under the permit will not be inconsistent with other operations anticipated to be performed in areas adjacent to the proposed permit area. (This underground mining operation is consistent with other underground mining operations in the Wasatch Plateau).
10. The applicant has posted a surety bond for the Skyline Mine in the amount of \$5,076,000 issued by St. Paul Fire and Marine Insurance Company (Surety Number 400SA1919) (R645-300-134).
11. No lands designated as prime farmlands or alluvial valley floors occur on the permit area. See Technical Analysis dated October 21, 2005 (R645-302-313.100 and R645-302-321.100).
12. The proposed postmining land-use of the disturbed area is the same as the pre-mining land use and has been approved by the Division and the surface land management agency, the Forest Service. (See consent/concurrence from the Forest Service dated December 2, 2005).
13. The Division has made all specific approvals required by the Act, the Cooperative Agreement, and the Federal Lands Program.

13. The Division has made all specific approvals required by the Act, the Cooperative Agreement, and the Federal Lands Program.
14. All procedures for public participation required by the Act, and the approved Utah State Program are in compliance. The public advertisement was published on ??? in the Sun Advocate and October 8, 15, 22, and 29, 2002 in the Emery County Progress. (R645-300-120)
15. All existing structures at the mine comply with performance standards. This application is an underground extension of an existing mine with no new surface facilities being proposed (R645-300-133.720).

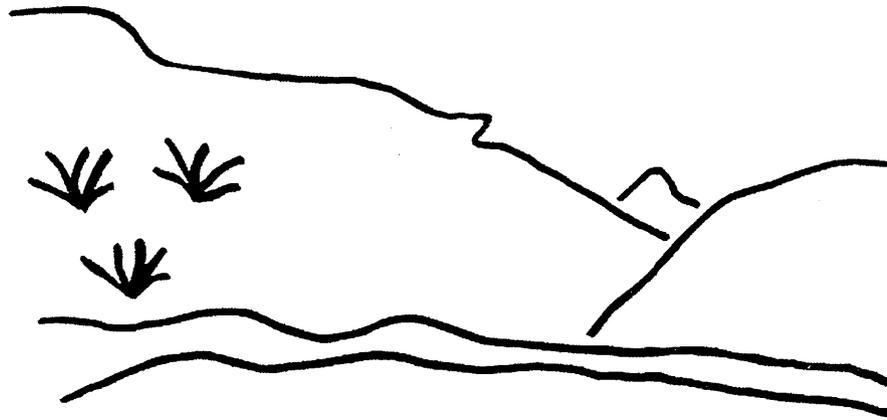
  
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Permit Supervisor

  
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Permit Supervisor

  
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Associate Director of Mining

  
\_\_\_\_\_  
Director

# State of Utah



## Utah Oil Gas and Mining

### Coal Regulatory Program

Skyline Mine  
Canyon Fuel Company, LLC  
C/007/0005  
Technical Analysis  
October 31, 2005

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TECHNICAL ANALYSIS DESCRIPTION

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## TECHNICAL ANALYSIS DESCRIPTION

The Division ensures that coal mining and reclamation operations in the State of Utah are consistent with the Coal Mining Reclamation Act of 1979 (Utah Code Annotated 40-10) and the Surface Mining Control and Reclamation Act of 1977 (Public Law 95-87). The Utah R645 Coal Mining Rules are the procedures to implement the Act. The Division reviews each permit or application for permit change, renewal, transfer, assignment, or sale of permit right for conformance to the R645-Coal Mining Rules. The Applicant/Permittee must comply with all the minimum regulatory requirements as established by the R645 Coal Mining Rules.

The regulatory requirements for obtaining a Utah Coal Mining Permit are included in the section headings of the Technical Analysis (TA) for reference. A complete and current copy of the coal rules can be found at <http://ogm.utah.gov>

The Division writes a TA as part of the review process. The TA is organized into section headings following the organization of the R645-Coal Mining Rules. The Division analyzes each section and writes findings to indicate whether or not the application is in compliance with the requirements of that section of the R645-Coal Mining Rules.

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C/007/0005  
October 31, 2005

**TECHNICAL ANALYSIS DESCRIPTION**

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**GENERAL CONTENTS**

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## **GENERAL CONTENTS**

### **IDENTIFICATION OF INTERESTS**

Regulatory Reference: 30 CFR 773.22; 30 CFR 778.13; R645-301-112

**Analysis:**

The Permittee has updated this section of the Mining and Reclamation Plan. This section was revised on September 4, 2002 with this submittal. The Permittee has updated maps of surface and mineral ownership, and ownership contiguous to the permit area.

Skyline Mine is one of several coal mines owned by Canyon Fuel Company, LLC.

**Findings:**

The information provided adequately addresses the minimum requirements of the General Contents – Identification of Interests section of the regulations.

### **RIGHT OF ENTRY**

Regulatory Reference: 30 CFR 778.15; R645-301-114

**Analysis:**

The information is on Page 1-35 in the Mining and Reclamation Plan. The Permittee has added additional information on Page 1-36 and 1-37 in the current submittal. The Bureau of Land Management has assigned UTU-67939 Winter Quarter Lease to Coastal States Energy Company in 1996.

**Findings:**

The information provided adequately addresses the minimum requirements of the General Contents – Right of Entry section of the regulations.

## LEGAL DESCRIPTION AND STATUS OF UNSUITABILITY CLAIMS

Regulatory Reference: 30 CFR 778.16; 30 CFR 779.12(a); 30 CFR 779.24(a)(b)(c); R645-300-121.120; R645-301-112.800; R645-300-141; R645-301-115.

### Analysis:

The acreage currently included in state permit area is 7,121 acres. The North Lease contains 3,291 acres (all Federal surface). The addition of the North Lease will bring the permit area to 10,374 (page 1-37 and Drawing No. 1.6-3). Total Federal coal acreage as a result of this revision is 9, 736 acres.

The existing disturbed acreage within permit area is 79.12 acres (page 1-42).

### Findings:

The information provided adequately addresses the minimum requirements of the General Contents – Legal Description and Status of Unsuitability Claims section of the regulations.

## PERMIT TERM

Regulatory References: 30 CFR 778.17; R645-301-116.

### Analysis:

The addition of the North Lease will add five years to the life of mine, for a total of 6.5 years. The permit terms are five years, (MRP, p 1-40).

### Findings:

The information provided adequately addresses the minimum requirements of the General Contents – Permit Term section of the regulations.

## PUBLIC NOTICE AND COMMENT

Regulatory References: 30 CFR 778.21; 30 CFR 773.13; R645-300-120; R645-301-117.200.

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**GENERAL CONTENTS**

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**Analysis:**

The Permittee has incorporated a copy of the affidavit of publication from the Sun Advocate and Emery County Progress newspapers into the submittal.

Public notice was given in the two papers during the month of October 2002. The public comment period runs thirty days from the date of last publication; that is until November 29, 2002.

**Findings:**

The information provided adequately addresses the minimum requirements of the General Contents – Public Notice and Comment section of the regulations.

**PERMIT APPLICATION FORMAT AND CONTENTS**

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

**Analysis:**

The Mine and Reclamation Plan (MRP) meets the requirements of R645-301-121.200 for the Biology Chapter and Archeology Section.

**Findings:**

The information provided adequately addresses the minimum requirements of the General Contents - Permit Application Format and Contents section of the regulations.

**REPORTING OF TECHNICAL DATA**

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

**Analysis:**

The MRP meets the requirements of R645-301-130 because qualified professionals conducted or directed the surveys and analysis for the supporting biological- and historical resource- related documents.

Maps are P.E. certified. Consulting firms have been identified in Section 2.1. The tables below provides a list of biological and archeological related information in the North Lease Subsidence Mining amendment including: titles of documents, dates of documents, names and

## GENERAL CONTENTS

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organizations of those participating in **biological** and cultural resource data collection, and locations of resource collection projects. This table does not include the additional information in the MRP appendices. However, **vegetation/wildlife** and the cultural and historic reports are in Appendices A2 and the Confidential File, respectively.

### **Findings:**

The information provided **adequately** addresses the minimum requirements of the General Contents – Reporting of Technical Data section of the regulations.

## MAPS AND PLANS

Regulatory Reference: 30 CFR 777.14; R645-301-140.

### **Analysis:**

The Permittee has submitted **maps** that are larger than 1:24,000. This meets the requirements.

### **Findings:**

The information provided **adequately** addresses the minimum requirements of the General Contents – Maps and Plans section of the regulations.

## COMPLETENESS

Regulatory Reference: 30 CFR 777.15; R645-301-150.

### **Analysis:**

The Division determined that the Significant Revision was administratively complete on September 30, 2002.

### **Findings:**

The information provided **adequately** addresses the minimum requirements of the General Contents - Completeness section of the regulations.

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## ENVIRONMENTAL RESOURCE INFORMATION

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

### GENERAL

Regulatory Reference: 30 CFR 783.12; R645-301-411, -301-521, -301-721.

#### Analysis:

The North Lease is in a montane area of elevation 8300 –9300 feet. Slopes are well vegetated with aspen and conifers. Two main drainages (Winter Quarters and Woods Canyon) flow northeast emptying into Mud Creek (or Pleasant Valley Creek). Each drainage has several reaches contributing flow. Winter Quarters Creek has a wide floodplain vegetated with grasses.

The coal seam of interest in the North Lease is the Lower O'Conner "A" seam in the Blackhawk Formation, which in the North Lease lies in a zone of compression. The compression appears to limit the ground water inflow to the mine.

#### Findings:

The information provided adequately addresses the minimum requirements of the Environmental Resource Information - General section of the regulations.

### PERMIT AREA

Regulatory Requirements: 30 CFR 783.12; R645-301-521.

#### Analysis:

The permit area is listed as 10,374 acres (p 1-36 and 1-37 and Drawing No. 1.6-3)

#### Findings:

The information provided adequately addresses the minimum requirements of the Environmental Resource Information - Permit area section of the regulations.

### HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

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

**Analysis:**

The MRP meets the requirements of R645-301-411 regulations pertaining to historic resources. The MRP (Confidential Binder in Division PIC room) includes narratives, maps, and evaluations of historic resources. These documents describe and show locations of historic resources, within or adjacent to the permit area, that may be included in or eligible for inclusion in the National Register. There is proof of coordination efforts and clearances from the SHPO.

The Permittee provides a summary of historic resource surveys within the permit area (Vol. 1, Sec. 2.1). Confidential Binder Vol. A-4 2<sup>nd</sup> Volume includes survey reports submitted for specific mining projects and an Archeology map.

The Division, in consultation with SHPO, supports a finding of "no effect" to historic resources within or adjacent to the North Lease area because the project does not include surface disturbance for facilities. SHPO's comment on the undermining of the North lease is in the "Mining Plan Decision Document" (December 2002). The 1995 Environmental Assessment also states that the undermining of the North Lease area will have no effect to historic resources.

**Findings:**

The information provided adequately addresses the minimum requirements of the Environmental Resource Information - Historic and Archeological Resource Information section of the regulations.

**CLIMATOLOGICAL RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 783.18; R645-301-724.

**Analysis:**

Climatological information for the mine site is outlined in Section 2.6 of the approved MRP. The North Lease permit area is immediately adjacent to the north boundary of the existing permit area. The climate for the North Lease is the same as the existing permit area. No new addition has been provided.

**Findings:**

The information provided adequately addresses the minimum requirements of the Environmental Resource Information - Climatological Resource Information section of the regulations.

ENVIRONMENTAL RESOURCE INFORMATION

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**VEGETATION RESOURCE INFORMATION**

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

**Analysis:**

The MRP meets the requirements of R645-301-321 because there is adequate discussion of plant communities observed within the permit area. The MRP includes a summary of vegetation common to the permit area (Vol. 1A, Sec. 2.7, 2.7.1, 2.7.6). The MRP also includes survey reports submitted for different projects (Vol. A-2 North Lease 2<sup>nd</sup> Volume; Vol. A-2 2<sup>nd</sup> Volume).

The lease for the North Lease area (Winter Quarters Tract) provides a list of USFS biology-related stipulations.

The Division, in consultation with DWR and USFS, considers that the undermining of the North Lease area will most likely have no or little impact to vegetation along the Winter Quarters and Woods stream channels. The Permittee will conduct baseline and monitoring surveys that will help detect and quantify unforeseen and evident impacts to vegetation. The Permittee will mitigate, under the direction of the Division, if subsidence-related impacts occur (Vol. 1A).

The Permittee will initiate a vegetation survey program, based on the principles of a USFS Level III survey, for the Winter Quarters and Woods stream channels. The program will include a baseline survey in 2005, monitoring surveys two years prior and during undermining of specific lengths of the channels, and follow-up surveys two years after undermining of these specific lengths of the channels (Vol. A-2 2<sup>nd</sup> Volume; Vol. A-3 2<sup>nd</sup> Volume). The Permittee will also include additional water monitoring sites along perennial portions of Winter Quarters and Woods stream channels. This monitoring will help detect if there are evident impacts to the channel vegetation because of undermining.

The Permittee will provide baseline infrared and black/white aerial photographs. The Permittee will also provide comparative photographs and pictures annually starting August 2002 that will include the North Lease area. A qualified biologist will review the pictures.

**Findings:**

The information provided adequately addresses the minimum requirements of the Environmental Resource Information - Vegetation Resource Information section of the regulations.

## FISH AND WILDLIFE RESOURCE INFORMATION

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

### Analysis:

#### GENERAL WILDLIFE

The MRP meets the requirements of R645-301-322 because there is adequate discussion, supporting documentation, or maps on fish and wildlife resource for the permit and adjacent areas (Vol. A-2; Vol. A-3; Confidential Binder Vol. A-4 2<sup>nd</sup> Volume; Vol. A-2 North Lease 2<sup>nd</sup> Volume; Vol. A-3 2<sup>nd</sup> Volume. Vol. 1A (Secs. 2.8 through 2.10) provide summaries of fish and wildlife that may occur within or adjacent to the permit area. Volume 3 (Sec. 4.18) provides a fish and wildlife plan. There is sufficient information to design or implement protection and enhancement plans.

The Division, in consultation with DWR and USFS, considers that the undermining of the North Lease area (Winter Quarters Tract) will most likely have no or little impact to fish and wildlife within the area. The Permittee will conduct baseline or monitoring surveys that will help detect presence of wildlife or quantify unforeseen impacts. The Permittee will mitigate, under the direction of the Division, if subsidence-related impacts occur (refer to R645-301-333.300; Vol. 1A).

#### *Ungulates*

The Utah Natural Heritage Program database shows the entire North Lease area as critical value elk summer use area and a high value deer summer. Drawing 1.6-3 has been revised to include the additions to the permit area that includes critical value summer deer and elk and high value winter moose habitats.

#### *Macroinvertebrates, Fish, and other Aquatics*

The Permittee will conduct macroinvertebrate surveys along Winter Quarters and Woods stream channels, using an USFS approved survey protocol. This protocol includes surveying for baseline two times a year (fall and spring) for two consecutive years prior to subsidence then monitoring every three years for a period determined by the Division and other agencies (Vol. 1A, p.2-71a). The Permittee initiated the baseline macroinvertebrate survey during the fall 2002 (Shiozawa 2002/2003). Plate 2.8.1-1 illustrates all the sample locations for macroinvertebrate surveys. The survey sites are along Winter Quarters, Woods, Eccles, Burnout, and James stream channels.

The Permittee conducted a qualitative fish survey for Winter Quarters and Woods stream channels in 2002 (Vol. A3 2<sup>nd</sup> Volume).

The Permittee will conduct baseline amphibian surveys along Winter Quarters and Woods stream channels in 2005 (Vol. 1A). The details of the survey protocols are in Vol. A2 2<sup>nd</sup> Volume.

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

The MRP provides a summary of raptor surveys conducted within the main facility areas and within the North Lease area (Vol. 1A, Sec. 10). The MRP also provides results of surveys with nest locations (Vol. A2; Confidential Binder Vol. A-4 2<sup>nd</sup> Volume).

The Permittee states that there are no plans for surface disturbance for the North Lease (Vol. 1A). One concern of the Division, however, is the potential loss of cliff-nesting birds or cliff habitat for breeding, nesting, and roosting because of subsidence. The Permittee will conduct raptor surveys to obtain baseline data within one year prior to subsidence of cliff habitat (Vol. 1A, Sec. 2.10). The Permittee will also conduct follow-up surveys within one year if nests were observed during the baseline surveys and if operations resulted in subsidence. The baseline and follow-up surveys will help assess the degree of impact to the nests. These efforts will help the Division, USFS, and DWR develop an enhancement or mitigation plan, if necessary (refer to R645-301-322, R645-301-332).

#### THREATENED, ENDANGERED, AND SENSITIVE ANIMAL/PLANT SPECIES

The MRP meets the requirements of R645-301-322 because there is adequate discussion, supporting documentation, or maps on threatened, endangered, or sensitive (TES) plant or animal species that could occur within or adjacent to the permit area.

The Division, in consultation with USFWS, supports a finding of "no effect" to threatened or endangered plant or animal species that may occur within or adjacent to the North Lease area. The USFWS' comment on the undermining of the North Lease area is in the Mining Plan Decision Document December 2002.

According to the 1995 EA written jointly by the USFS and the BLM, the TES species that may occur within the North Lease area are the bald eagle, northern goshawk, and northern three-toed woodpecker.

The MRP (Sec. 2.1.2) indicates that there have been no TE species observed within or adjacent to project areas. The Utah Natural Heritage Program database shows no records of occurrence of TES plant or animal species for the North Lease area. The Permittee will provide supplementary information by conducting baseline surveys for certain TES species when necessary.

The Permittee will conduct northern goshawk as well as three-toed woodpecker surveys for the North Lease area in 2005. Vol. A2 2<sup>nd</sup> Volume provides the protocol for the goshawk and woodpecker surveys..

*Plants*

The Intermountain Proposed Endangered, Threatened, and Sensitive Species List, last updated in January 1999, indicates that there may be endangered species that inhabit the Manti La Sal area. The Permittee consulted with USFS Manti La Sal District Botanist who stated, "none of the currently listed TE species or sensitive species is found in the Winter Quarters lease area" (Vol. 1A).

**Findings:**

The information provided adequately addresses the minimum requirements of the Environmental Resource Information - Fish and Wildlife Resource Information section of the regulations.

**SOILS RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 783.21; 30 CFR 817.22; 30 CFR 817.200(c); 30 CFR 823; R645-301-220; R645-301-411.

**Analysis:**

Drawing No. 2.7.1-1b Permit Area Order III Soil Survey Map covers the additional permit area. No additional surface disturbance is planned.

**Findings:**

The information provided adequately addresses the minimum requirements of the Environmental Resource Information – Soils Resource Information section of the regulations.

**LAND-USE RESOURCE INFORMATION**

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

**Analysis:**

Land Use is discussed in Section 2.12 of the Application. The existing land use for the North Lease area is wildlife habitat, grazing, recreation, forestry and mining. Previously mined areas are shown on Drawing 2.2.7-7. Land Use for the area is shown on Drawing No. 2.12.1-1.

**Findings:**

The information provided adequately addresses the minimum requirements of the Environmental Resource Information – Land-use Resource Information section of the regulations

## **ALLUVIAL VALLEY FLOORS**

Regulatory Reference: 30 CFR 785.19; 30 CFR 822; R645-302-320.

**Analysis:**

### **Alluvial Valley Floor Determination**

The Division finds that there is no alluvial valley floor within the permit area. The CHIA evaluation has determined that there are quaternary deposits at the mouth of Wood Canyon and Winter Quarters Canyon, located is downstream of and outside of the permit area.

The existence of an alluvial valley floor with irrigated pastures and areas of subirrigation along Mud Creek in Pleasant Valley below the Utah No. 2 Mine (now called the White Oak Load Out) was previously established by the Division (1984 Technical Analysis of the Valley Camp Mine, ACT/007/001, and Valley Camp MRP Map R645-301-411.100 Premining Land Use Map). Figure 2.12.D in the Skyline Mine MRP illustrates the locations of pastures downstream and outside the permit area.

Although the alluvial valley is outside the permit area, Skyline Mine discharge waters flow down Eccles Creek and then to Mud Creek. Mud Creek flows through Pleasant Valley, the alluvial valley floor. The gradient of Mud Creek is approximately 0.0091 ft/ft with a sinuosity ratio of 1.6. These figures were derived from aerial photographs (personal communication, November 15, 2002, between Rich White, Earth Fax Engineering, and Priscilla Burton). The channel flattens on approach to Scofield Reservoir with an average gradient of 0.02 to 0.1 ft/ft. Channel subsoils are silty sands and clayey silts, classified by the 1988 Carbon County Soil Survey as Silas and Silas Brycan series. The results of laboratory analysis on the physical properties of the soils in the creek are found in Appendix B of Appendix D of the July 2002 Addendum to the Skyline Mine PHC. Cross sections of the channel describe a channel bed that is 96% cobbles and gravels and side slopes that are 100% sand, silt and clay (Appendix E of

Appendix D of the July 2002 Addendum to the Skyline Mine PHC). Low flow terraces are limited in extent and the channel is incised. There is no broad flood plain.

Cross sections of the Mud Creek channel were measured at six different stations. The piezometric surface was measured at four of those stations. At Station 7300, in the vicinity of Green Canyon, the groundwater is four feet below the surface. In the area of Station 14480, the groundwater level is eight feet below the surface, reflecting the rolling nature of the land and the incised nature of the stream channel. The ground water rises back up to four feet below the surface at Station 17340, the site of an irrigation diversion (Section 2.12 of the Skyline Mine MRP).

Measurements of flows taken on November 26, 2001 (Appendix D, Skyline Mine MRP) recorded 18.4 cfs in Mud creek after the confluence with Eccles Creek and 24.44 cfs after the confluence with Winter Quarters Creek. The gain in flow downstream was attributed to contributions from springs and side streams (2 – 3 cfs) and re-emerging base flow from the alluvium of 3 – 4 cfs (Section 2.12 and Appendix D July 2002 Addendum to the Skyline Mine PHC).

Similarly, there exists an alluvial valley floor in the broad, valley bottom of Winter Quarters Canyon and Woods Canyon, outside the permit area (MRP, Section 2.12). Figure 2.12.D illustrates the locations of pastures. Table 2.12.3 provides information on land ownership, pasture size, and crop grown. There are six landowners along Mud, Winter Quarters, and Woods Canyon Creeks. The land is used for grazing of pasture grass. All pastures were estimated to produce 2.5 Tons/acre of grass annually (Ray Jensen, Range Specialist for the Bureau of Land Management (BLM) is the source of this yield estimation. He suggested a range of 4000-6000 pounds/acre for sub-irrigated grassland, in 2001.) The predominant vegetation type is grass. Pastures are grazed by horses and cows (Division observation). The number of animals grazed on the pastures by each landowner is variable with time.

Within the permit area, the sinuosity of Winter Quarters Creek is 1.1 and the channel width varies from 6 – 8 ft. Flows ranged from 108 – 871 gpm during the baseline gathering study period. In Woods Canyon, the AVF is limited to 3 acres and sinuosity and channel width were not measured. However the flow ranged from 23 – 410 gpm during baseline collection (Section 2.12).

The upper reaches of the streams contributing to the alluvial valleys will be undermined with planned subsidence as described in the MRP, Section 4.17 and Drawing No. 4.17.1-1 and Drawing No. 4.17.1-2. The anticipated maximum subsidence is six feet (Section 4.17 and Drawing 4.17.3-1A). Consequently, monitoring of stream flows (Section 2.4) and vegetation (section 2.7) during and immediately after mining will take place.

### **Protection of Agricultural Activities**

Mud Creek stream channel vegetation was assessed in December 2001 by Dr. Patrick Collins of Mt. Nebo Scientific (Appendix A of Appendix D July 2002 Addendum to the Skyline Mine PHC). A level II investigation was conducted using the methods of the USDA Forest Service. Two reaches were located on Mud Creek. Reach #4 is located just below the confluence of Eccles and Mud Creeks. The riparian community was approximately 91 feet wide and consisted of willows, sedge and rush grasses. Approximately 80% of the banks were vegetated and stable. Downstream, at Reach #5, the width of the riparian community broadened to 120 feet and consisted mostly of willows growing in both riparian and wetland communities. Approximately 60% of the bank was vegetated and stable. (February 27, 2002 EarthFax report in Appendix D of July 2002 Addendum to the PHC). Additional fieldwork observations were conducted in the summers of 2002 and 2003 (July 2004 Mt. Nebo Scientific, Inc report entitled, "Baseline Monitoring Riparian Plant Communities at Eccles Creek & Mud Creek 2002-2003"). According to the July 2004 report, there may be some increase of the riparian communities along the stream channel. Weak or unstable banks were found at 19 out of 49 locations in Eccles and Mud Creeks. However, no major catastrophic changes to the banks or the riparian communities near them were noted. The Permittee has been pro-active in stabilizing banks with dead wood and boulders. In these locations, the July 2004 study notes the banks are beginning to recover.

### **Monitoring**

Scofield Reservoir is a drinking water source for Price, and a premiere cold water fishery in the State. Unfortunately, the EPA has listed it as an impaired water body. Of special concern is the concentration of total phosphorus in the reservoir (Appendix E of the July 2002 Addendum to the PHC). A significant source of phosphorus pollution in the Scofield Reservoir is the sediments entering the reservoir delivered by Mud Creek. Using the information in the Division's Water Quality Database for TSS and flow at sample locations C6 on Eccles Creek, VC9 on Mud Creek and VC1 on Mud Creek, the average sediment yield carried by Eccles and Mud Creek prior to 1999 was 2,710 Tons/yr. The average sediment yield carried by Eccles and Mud Creek between 1999 and 2002 has been 2,908 Tons/yr. This translates to an increase of 7% annually.

Consequently, the contributions of mine water to the increased phosphorus loading will be evaluated in the monitoring plan proposed by the Permittee (Section 2.12 Attachment 3). Monitoring at two sites on Eccles and five sites on Mud Creek will include: total flow, TDS, TSS, and total phosphorous, stream morphology. (Station locations are shown on Figure 1 Location of Reference Sites Attachment 3 Land Use of Section 2.12.) Stations will be monitored four times a year (seasonally) and for a period of one year following a reduction in discharge to a rate of 350 gpm or less. Sediment yield loading from flows in Mud Creek will be computed from the TSS and flow data collected. Annual evaluations of the stream will be summarized in a report to be submitted to the Division with the Skyline Mine Annual Report. The monitoring

plan will also evaluate the changes in stream morphology and vegetation at the stations over the same time period. The Study Plan prepared by Dr. Patrick Collins on July 4, 2002 entitled "Continuing Studies of the Effects of Increased Flows on Riparian Communities at Eccles Canyon Creek & Mud Creek," is included in Attachment 3 of Section 2.12. This Level III assessment of the riparian communities of Eccles and Mud Creeks will be conducted for two years beginning in 2002 and being completed in 2003, with fieldwork being conducted in July and August.

The mine waters being discharged had an average Total Dissolved Solids (TDS) level of 600 mg/L in July of 2000. With continued pumping, the concentration of TDS has decreased to less than 400 mg/L as of March 2002 and averaged 518 mg/L in 2003. Above the mine, the average concentration of TDS is 300 mg/L (July 2002 Addendum to the PHC).

Stations along Mud Creek will be monitored four times a year (seasonally) for a period of one year following a reduction in discharge to 350 gpm or less. Sediment loading in Mud Creek will be computed from the TSS and flow data collected. Annual evaluations of the stream will be summarized in a report to be submitted to the Division with the Skyline Mine Annual Report. The monitoring plan will also evaluate the changes in stream morphology and vegetation at the stations over the same time period.

Monitoring of stream flows (Section 2.4) and vegetation (Section 2.7) in Woods and Winter Quarters Creeks during and immediately after mining will provide a trigger for implementing the best technology available to mitigate the damage (Section 4.17). The BTCA for repair of subsidence cracks will be jointly determined immediately prior to implementation (Section 2.7), but will likely involve backfilling with surrounding material and bentonite (Section 4.17).

In accordance with R645-302-323.122, the Division finds that the Skyline Mine operations have not materially damaged the underground water systems in Pleasant Valley, which is outside the permit area of the existing coal mining and reclamation operation. The increased mine discharge has had no negative impact on agricultural activity along Mud Creek. Instability in the channel banks and increased erosion of the stream channel in reaches of the channel that are not well vegetated are very small in relation to the acreage being pastured and are negligible to the total production of the pastures.

The Division finds that there has been no significant impact to productivity of the pasturelands in Pleasant Valley.

The Division finds that the quality of the mine water discharge in terms of Total Dissolved Solids has improved with the quantity of water discharged. (No conclusive information on the Phosphorus contributions of sediments carried by the Mud Creek waters is available at this time.)

**ENVIRONMENTAL RESOURCE INFORMATION**

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October 31, 2005

In accordance with R645-302- 324.300, The Division has required continued monitoring of the vegetation, erosion of banks, flows and chemical quality of the waters at established locations on Mud Creek, Winter Quarters Creek and Woods Canyon Creek.

**Findings:**

The information provided adequately addresses the minimum requirements of the Environmental Resource Information – Alluvial Valley Floors section of the regulations.

**PRIME FARMLAND**

Regulatory Reference: 30 CFR 785.16, 823; R645-301-221, -302-270.

**Analysis:**

Section 2.14 and Appendix Volume A-2 has a prime farmland determination letter for the area. There is no historical use of cropland within the proposed permit area. There is no planned surface disturbance within the additional permit area. The Division concurs with the Natural Resource Conservation Service that there is no prime farmland within the permit area.

**Findings:**

The information provided adequately addresses the minimum requirements of the Environmental Resource Information – Prime Farmland section of the regulations.

**GEOLOGIC RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 784.22; R645-301-623, -301-724.

**Analysis:**

Clarity has been added to Section 2.2, the structural geology information by extending the Connellville Fault through the drawing 2.2.1-1 to match the text. And drawing 2.2.7-7 has been referenced in the text to identify Mines #1, #2, and #3.

Acid and Toxic analysis results for the North Lease area were not yet available as of the November 4, 2002 submittal. However, the seam to be mined is a continuation of Mine #3 where significant testing has been conducted. The seam of interest in the North Lease is the Lower O'Conner "A" seam. Drill logs for holes 91-26-1 and 91-35-1 were received with this application and placed in the Confidential Folder for the mine.

The Mine has committed to submitting new information when it becomes available, and the material placed at the waste disposal site is compositely sampled at a minimum of one (1) sample per 2000 tons hauled.

No additional geologic information was submitted by CFC as part of the North Lease Subsidence Mining amendment. However, additional information has been provided as part of the June 2004 PHC update (Kravits 2003). The information consists of 89 drill holes; 16 oil and gas exploration holes that penetrate the Starpoint Sandstone, 70 coal exploration holes which primarily terminate in the Storrs Sandstone or Panther Sandstone, and three (3) measured sections. The geologic study area encompasses three (3) ranges by five (5) townships in area, centered on the Skyline permit area. Significant time was dedicated to creating isopach maps of the Storrs tongue, Storrs to Panther interval, Panther tongue, Panther to Trail Canyon Interval, Trail Canyon tongue, and Panther tongue to the base of the Star Point Sandstone Intervals. Three cross sections were also included; one dissecting the area from north to south, one at the southern portion of the Skyline permit area from east to west, and the third north of the Skyline permit area dissecting the Fish Creek Graben. The study provided valuable information addressing the regional geology surrounding the Skyline permit area. This work is provided to the Division on a CD. Additional geologic illustrations are available in Appendixes J and K, which were generated for the hydrologic modeling exercise.

#### **Findings:**

The information provided adequately addresses the minimum requirements of the Environmental Resource Information – Geologic Resources Information section of the regulations.

### **HYDROLOGIC RESOURCE INFORMATION**

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

#### **Analysis:**

##### **Sampling and Analysis**

The Permittee has met the requirements of R645-301-723 by collecting and analyzing all water samples according to the methods in either "Standard Methods for the Examination of Water and Wastewater" or the methodology in 40 CFR Parts 136 and 434. Though consultants have collected data in some instances, the Permittee has overseen all sampling and analysis since mining operations began, including baseline for additional lease areas.

## Baseline Information

### *Ground-water information*

The Permittee has met the requirements of R645-724.100 by providing the following information as it pertains to the permit and adjacent areas:

- The location and ownership of existing wells, springs, and other groundwater resources.
- Seasonal quality and quantity of groundwater. and
- Data to show seasonal variation and usage.

The Permittee discusses groundwater resources in Sec. 2.3 of the MRP. They depict the locations of wells and springs, with ground water rights (ownership) designation on Plate 2.3.5.2-1. A seep and spring survey, including map, for the North Lease is located in a separate report titled "Winter Quarters Canyon 1993 Seep and Spring Survey."

Volume 4 of the MRP (two binders) lists all water right information for the permit and adjacent area, including approved usage.

The Permittee lists all baseline groundwater data in Appendix. A-1, and Volume 4. The Division also houses all water monitoring data on its Electronic Water Database, which the public may access at <http://linux1.ogm.utah.gov/cgi-bin/appx-ogm.cgi>.

In Section 2.3 of the MRP, the text clearly illustrates that the specific yields, and hydraulic conductivities of the rock strata surrounding the Mine are typically very low (yields of 0.2 to 0.7 percent). However, it also states that conditions encountered in the southern portion of the mine in August 2001 clearly changed this. A detailed analysis of these conditions are discussed in the 'July 2002 Addendum to the PHC'. The brief discussion provided, and the reference to the PHC adequately addresses previous Division concerns.

In Section 2.3.5.2 – Groundwater Rights, the Permittee clearly references the location of the water rights status. They are listed in Volume 4, 1<sup>st</sup> and 2<sup>nd</sup> binders, and illustrated on Plate 2.3.5.2-1. For the North Lease area, a total of seven springs and one stock watering pond have been monitored and data submitted to the Division since fall 2002. Although not currently initiated, beginning six-months prior to longwalling, and continuing for six-months afterwar the longwall passes any perennial sections of Winter Quarters Creek or Woods Creek, the Permittee will monitor flow monthly at thirty-one locations on Winter Quarters Creek and eleven locations on Woods Creek.

*Surface-water information*

The Permittee has met the requirements of R645-724.200 by providing the following information as it pertains to the permit and adjacent areas:

- The name, location, ownership, and description of all streams, lakes, and impoundments in the permit and adjacent areas.
- The location of any discharge into any surface water body in the permit area.
- Seasonal quality and quantity of surface water.
- Data to show seasonal variation and usage.

The Permittee discusses surface water resources in Sec. 2.4 of the MRP. They depict the locations of streams, and mine-water discharge points on Plate 2.3.6-1 and water rights (ownership) on Plate 2.3.5.1-1. The north-western portion of Electric Lake falls within the permit area, and Scofield Reservoir lies approximately 3 miles to the east of the North Lease portion of the permit area. There are some stock-watering ponds in the North Lease area, and sedimentation ponds associated with the mine. The Permittee discharges water from the main portal area into Eccles Creek (flows to Scofield Reservoir), and from pumps located in James Canyon directly into Electric Lake.

Volume 4 of the MRP lists all water right information for the permit and adjacent area, including approved usage.

The Permittee lists all baseline surface water data in Appendix. A-1, and Volume 4. The Division also houses all water monitoring data on its Electronic Water Database, which the public may access at <http://linux1.ogm.utah.gov/cgi-bin/appx-ogm.cgi>.

The baseline data includes the major watersheds within, and adjacent to the permit area, which are: Eccles Creek, Mud Creek, Winter Quarters Creek, and Woods Creek.

Also included as baseline information, as a requirement of the November 2002 analysis are three (3) reports: EarthFax Engineering, Perennial Length and Gradient Studies of Winter Quarters Canyon and Woods Canyon Creek, 2003 and 2003; Riparian Plant Community Survey Near Scofield Utah, Winter Quarters and Woods Canyon, 2002; and Macroinvertebrates Studies, 2002 and 2003, Winter Quarters and Woods Canyon, respectively. Copies of the studies are included in Volume A-1 Hydrology Section.

In Section 2.5.3 – Alternative Water Supply, CFC has identified they currently own approximately 556 acre-feet of water rights in the Scofield Reservoir. In Section 2.5.3, CFC also commits to “correct any material damage resulting from subsidence caused to surface lands (which includes water rights), to the extent technologically and economically feasible, by restoring the land to a condition capable of maintaining the value and reasonably foreseeable

uses that it was capable of supporting before subsidence damage.” Additional comments include, “Restoring of water flows to impacted sources will be accomplished using the best technology currently available (BTCA)”. As a final alternative, the mine will “explore the transferring of water rights to the injured party in flow equal to the determined loss and/or monetary reimbursement of proven material damages”. The statements made will be implemented for water replacement should any damage occur.

### **Baseline Cumulative Impact Area Information**

The Skyline Mine belongs to the “Mud Creek Basin and Upper Huntington Creek Basin” CHIA. The addition of the North Lease will not change the CHIA boundaries since they were included in the previous CHIA. There will be no mining operations in hydrologic basins other than those approved in the current permit, therefore the Division does not require additional cumulative impact area information.

Sufficient information is available in the MRP and from Federal and State agencies to update the CHIA.

### **Modeling**

Appendix J – HCI Ground Water Flow Modeling of Skyline Mine and Surrounding Area, Appendix K – Supplemental Report to Appendix J, and a November 2004 memo added to Appendix K has been submitted to be included as part of the Skyline Mine PHC. The modeling report is being adopted into the MRP as supporting evidence for the Skyline Mine PHC determination. Appendix J was not subject to a typical Division technical analysis outlining deficiencies, as it was developed for the law firm Manning, Curtis, Bradshaw and Bednar LLC, of Salt Lake City Utah, and is being considered supplemental information. However, Appendix K and the supplemental November 2004 information was developed with DOGM and OSM input. The Skyline PHC prefaces the model stating, “Several assumptions have been made on the volume, porosity, and transmissivity of the aquifer. It also admits that to construct an accurate groundwater model several groundwater points are needed, but no additional groundwater wells are planned.

In the introduction of the HCI model report - Appendix J the following qualifiers are also stated, “many of the components necessary for the Skyline model are not well-defined.” Considerable uncertainty is also mentioned for values for hydraulic conductivity for each of these major hydrogeologic units and the relative permeability of the major structures. The introduction goes on to state, “Although some components such as recharge or stratigraphic thickness can be reasonably well-defined by the available data, other major components such as the vertical hydraulic conductivity of overburden units or the hydraulic characteristics of faults can only be evaluated from the reasonableness of the results of preliminary numerical

simulations using assumed values. As such, the Skyline model is still in a heuristic stage in which it is being used to learn about the characteristics of the regional ground-water system.”

For the proposed hydrogeologic numeric ground water model to be adopted as an appendix into the MRP, the reader is reminded numerous times in both the PHC section of the MRP and Appendix J of the limiting factors of the model. The surface and ground water hydrology of the Skyline area are poorly understood due to the limited availability of data and the nature of geologic faulting in the area. As stated in the PHC, “One purpose of the model is to help the mine define the recharge and discharge locations of the Star Point Sandstone aquifer and the determine the potential impacts, if any, to surface waters and their beneficial uses.” Due to limited availability of data, the model needed to make significant assumptions on the volume, porosity, and transmissivity of the aquifer, which affects the accuracy of the model.

Although a comprehensive summary, Appendix J was lacking in documentation. The conceptual portion of the model assumes the water pumped from the fault and mine inflow water is primarily derived from groundwater, the impacts of concern are drawdown, potential subsidence associated with drawdown, and impacts of drawdown on water users in the permit area. Calibration for HCI’s model was a process of adjusting the conceptual model parameters and boundaries to reasonably replicate field observed conditions for pre-mining water levels and estimated stream baseflows.

A significant finding in the HCI report (Appendix J) states (Page 44, Section 5.1), “The most significant finding of the model simulations is that it is possible to account for essentially 100 percent of the inflow into the Skyline Mine by depletion of storage in the deep groundwater system.” The report also stated (Page 45) that given the conceptual parameters, “the hydraulic conductivity of the fault could not be increased in any portion of the fault other than between the lake and the mine -- an unusual constraint -- without causing significant, unmeasured drawdown in the Blackhawk Formation.” This suggests the majority of water, according to the model, could not be supplied from Electric Lake. A second significant and fundamental finding of the model is the ground water gradient of the Star Point sandstone. The model indicates the ground water gradient is from south-southwest to north-northeast with a rate of 0.03 to 0.009 ft/ft. The recharge area is south of the Huntington and Cleveland reservoirs and the discharge area is around Scofield reservoir. However, the ‘weighted value or qualifiers’ of this statement is subjective based on 1) assumptions made in the conceptual model, 2) a limited understanding of groundwater recharge and discharge in the area, and 3) a lack of model verification.

Information supplied by Appendix K (submitted in June 2004, that was absent in Appendix J include the following:

- Figure 4 illustrates the drawdown differences in the shallow wells and deep wells
- Figures 5-9 illustrate the major layers of the model and the respective nodes in those layers
- Figures 10-12 provide major cross sections

- Figure 13 is a graph illustrating the distribution of the wells used, by formation and compares modeled to measured values
- Figure 14 graphs modeled to measured inflows; unfortunately minimal data was available for verification of modeled values
- Figure 15 graphs modeled to measured performance in the wells used in the model; two (2) of the three (3) graphs provided no data for verification.
- Figures 16-17 illustrate modeled inflow to the mine under different flooding scenarios
- Figure 18 predicts the longer impacts to major streams in the area.
- Tables 1-3 provide detailed water budgets quantifying overall model inflow and outflow from the sources and sinks and impacts to Electric Lake based on three (3) different mine flooding scenarios.

Figure 4 is significant because although there has been over 400-feet of drawdown in the Star Point wells, no or little affect has been observed in wells completed in the Blackhawk formation. Figure 13 illustrates whether there are any modeled drawdown biases toward formation. As an example, if all the Blackhawk formation wells plotted well below the *Perfect Correlation Line*, the model would be biased toward the Blackhawk Formation. Figures 14, 15, 16 and 17 are critical for providing validation of the model in the future as more data becomes available.

Appendix K submitted and the supplemental information supplied in November 2004 attempt to identify some potential impacts to both the recharge and discharge locations of the Star Point Sandstone. At some point after all pumping of ground water ceases, potential impacts include an estimated 0.2 cfs increase of flow to Mud Creek and an estimated 0.2 cfs decrease of flow to Huntington Creek below Electric Lake. Upper Huntington Creek and the Fish Creek remain essentially unchanged. If the current flooding of the mine remains with the pool elevation at approximately 8290 feet, current impacts to Electric Lake are estimated at 0.2 cfs and would increase to 0.6 cfs through 2013 – the current projection for mining to end. The details of the budgets are available in Tables 1-3 in Appendix K and Table 1 in the November 2004 memo.

Verification of the model as a predictive tool can only be done with additional simulations of the model. To run additional simulations of the model requires more data and often requires potentially time-consuming re-calibration of the model parameters and additional measured data for validation. Canyon Fuel Company commits to running additional simulations in 2006, and potentially every three (3) years thereafter if warranted.

The November 2004 memo addendum to Appendix K provided a numeric model simulation of post-mining conditions once all mining and pumping has ceased. The pool elevations are strongly influenced by the interconnection or increased hydraulic conductivity between the gob and Mine 1, 2, and 3 workings. The pool level or elevation of water within the mine workings is anticipated to stabilize at an elevation of 8,475 feet, or 102 feet below the Eccles Creek portal. Using the model developed in Appendix J, and with only minor

modifications, the model predicts: 1) Upper Huntington Creek, Electric Lake, and the Fish Creek basin will return to pre-mining conditions; 2) Huntington Creek below Electric Lake discharge will decrease by 0.2 cfs (~90 gpm); and 3) the Mud Creek basin discharge will increase approximately 0.2 cfs.

Given the conceptual parameters of the model, the building of the numeric model adequately illustrated it is a reasonable scenario that the water can be derived from the deep groundwater system. However given the limited availability of data, use of the model as a predictive tool is questionable. It is not 'unreasonable' that another model could be constructed using different conceptual constraints that produced different results. Use of the model as reliable predictive tool would be questionable due to the numerous assumptions necessary because of limited data. Additional modeling is not warranted because acquisition of additional, meaningful data is not possible. The model serves to bolster the Mine's PHC asserting that the water encountered in the mine is being sourced by the Star Point Sandstone.

#### **Probable Hydrologic Consequences Determination**

The Permittee met the requirements of R645-301-728 and sub-sections in the MRP. The Permittee expects the impacts to Woods and Winter Quarters Canyons to be similar to those in Burnout Canyon.

Section 2.5 - Hydrologic Impacts of Mining Activities, is the section of the MRP that essentially summarizes the Permittee's Probable Hydrologic Consequences Determination. Sub-sections include 2.5.1 – Potentially Affected Water Rights, 2.5.2 – Mining Impact on Water Quantity, and 2.5.3 – Alternative Water Supply, respectively. Prior to section 2.5.1, two introductory paragraphs list the relevant appendices used for the Permittee's PHC determination. This adequately addresses a previous Division concern to outline what additional appendices were used in the Permittees PHC determination.

Due to the complex nature of the hydrogeologic mining conditions encountered in the southern portion of the permit area since 1999, numerous detailed studies have been conducted and are summarized in the relevant subsections. The details backing the conclusions stated in this section and supplemental discussions can be found in the PHC evaluations. All pertinent studies, evaluations, and reports are listed in the front of this section and are referenced in the text. Primarily, mining conditions encountered in the southern portion of the Mine has instigated this submittal of mining in the North Lease area. The hydrogeologic conditions anticipated in the North Lease area are a continuation of conditions observed in Mine #3 and outlined in Sections 2.2, 2.3, and 2.4 of the MRP. No adverse impacts to the hydrologic regime are anticipated from advanced mining into the North Lease area. Although Mine #3 lies directly on top of the Storrs Tongue of the Star Point Sandstone, only minor inflows have been observed; a stark contrast from conditions observed in the southern portion of the permit area.

In Section 2.5.1 – Potentially Affected Water Rights, the Permittee provides a discussion of the water being encountered beneath the Huntington drainage, and how data and analysis indicate there is no significant connection between the surface waters and waters encountered in the mine.

Studies indicate that the Star Point Sandstone does not transmit water easily, does not have a significant discharge point located immediately down gradient of the mine, and age-dating of the water suggests that it takes thousands of years to move through the aquifer despite the high transmissivity of the fractures within the sandstone. The majority of inflow enters the mine through the floor along north-south trending fault and fracture zones within the Star Point Formation. The water is stored in the Star Point Sandstone under considerable potentiometric head, which indicates it is a confined aquifer. Being under considerable head also suggests the recharge area is not in the immediate vicinity (Star Point Sandstone mapped to the east of the permit area). Also, data from upgradient wells is limited; the two wells owned by Canyon Fuel Co., located in Eccles Canyon are pumped for mine use. In addition, all the water rights in the Huntington drainage are within the Blackhawk Formation, which is hydraulically disconnected from the Star Point Sandstone by impermeable siltstones and shales. All of which indicates although the water encountered in the mine is located beneath the Huntington drainage, water rights located within the Huntington drainage are not being affected. The Mine analysis of the water quality (both of surface and in-mine flows), mine geology, drilling, and groundwater well data indicate the large inflows to the mine originate from deep within the Star Point Sandstone and are transported to the mine through faults and fractured sandstone from well below the mine. Skyline continues to monitor spring and stream flows in the Winter Quarters, Eccles, Mud Creek and Huntington drainages to identify impacts. The information provided adequately addresses the Division concern of inter-basin water transfer. Should conditions change, adequate monitoring of the inflows into the mine, and surface monitoring of springs and streams will document any mitigation that should take place.

In Section 2.5.2 – Mining Impacts on Water Quantity, the Permittee has provided a discussion on the studies conducted in Burnout Canyon which suggest no significant interruption or change in flow are anticipated in the perennial streams located in the North Lease caused by undermining and related subsidence. When subsidence does occur, the subsidence cracks tend to seal rapidly, preventing the deep percolation and subsequent loss of water. This is due to the impermeable nature of the Blackhawk Formation with its inter-bedded, fine-grained sandstones, siltstones and shales. Skyline mine intends to petition the Forest Service to allow the undermining of Winter Quarters Canyon based on the positive results of the Burnout Canyon study. Additional variables that reduce the possibility of adverse impacts caused by subsidence is the thickness of overburden over the majority of the area, and that only the Lower O'Connor A seam is the only coal unit to be mined.

Mining impacts on Water Quantity caused by increased discharge to Eccles Creek from mining in the North Lease are not anticipated. Many distinct differences in geology from the southern portion of the permit area are outlined in Section 2.2 of the MRP, a major factor being

the in-situ stress of the rocks in the North Lease area have been tested and determined to be in compression in an east-west direction. Similar measurements taken in Mine #2 indicate the rocks are in extension in an east-west direction. Also, previous mining in the area (Mine #3) had no problems with water coming out of the Storrs Sandstone, the apparent source of in-flows in the southern portion of the mine.

To address the effects on water quantity discharged into Eccles Creek / Mud Creek a study was initiated in November 2001 and a work plan was revised in July 2002. The objective of the study is to characterize the physical characteristics of the stream channels, through both bank stability and vegetation, and through ongoing monitoring determine whether undesirable impacts are occurring along the stream due to excessive discharge from the mine. This is outlined briefly in Section 2.3.7 – Groundwater Monitoring Program of the MRP (pg. 2-35a) and in detail in Volume 2.12 – Land Use (Attachment 3) of the MRP. Should any adverse impacts occur related to discharge, the monitoring program, as outlined should be able to identify and quantify any damages.

The Permittee has expanded comments on the ‘positive effect on the aquatic flow system’ the increased discharge has had on Eccles and Mud Creeks by including the following statement. “The increased flows to Scofield Reservoir most likely benefited the fish population in the lake by maintaining a sufficient level of dissolved oxygen to avoid a general fish kill that frequently occurs in the lake during periods of drought, such as has been occurring in the area since 2000.” Although not completely substantiated, this statement is intuitively correct since the large volumes of water being discharged have TDS concentrations only slightly higher than background levels.

Within the July 2002 Addendum to the PHC, the following modifications were made in response to Division concerns cited in the October 25, 2002, technical analysis.

- A table of contents has been included at the beginning of the July 2002 Addendum to the PHC, and tabs have been added to segregate the various sections.
- Pages PHC A-11 through A-13 provide a brief discussion indicating the springs, seeps, and streams monitored within the Huntington drainage basin indicate the shallow ground water aquifers are controlled by the fluctuations in yearly precipitation or drought cycles, as supported by the graphs available in Appendix A.

In conjunction with the increased in-mine flow, age-dating analysis, of the encountered waters has been conducted by the Permittee. This has proven to be a critical analysis in the characterization of the water. Sampling has been infrequent for certain locations due to the inability to collect the samples caused by safety concerns. However, multiple analyses that have been conducted include: water chemistry; temperature; stable isotope (Deuterium, Oxygen 18); and unstable isotope (Tritium and Carbon 14). All of which consistently indicate that the surface waters of the Huntington basin are significantly different and consistently younger than the waters encountered as inflow into the mine. In addition, at sites where feasible, analyses are being conducted on a regular frequency. A summary discussion of this information is provided

in the July 2002 Addendum to the PHC on pages PHC A-14 through PHC A-17, and the complete discussion is found in Appendix A (Petersen Report) and Appendix C (HCI report) of the July 2002 Addendum to the PHC. This information adequately addresses earlier mentioned Division concerns.

Pages PHC A-13 and PHC A-14 discuss the basic geomorphology of Eccles and Mud Creeks and the ongoing bank stability/vegetation study. A primary function of the study/monitoring is to assess whether the increased flow (44 times the normal daily flow) is having any long-term, adverse impacts to the streams.

A more in-depth discussion of the bank stability/vegetation study has been provided in Section 2.4.2 – Surface Water Hydrology, Flow Characteristics, and Section 2.12 – Land Use of the MRP. It is also described in detail in Appendix D of the July 2002 Addendum to the PHC and Attachment #3 of Section 2.12. This adequately addresses earlier noted Division concerns.

The October 2002 Addendum to the PHC – Appendix G is an ‘Internal Correspondence’ that clearly provides a recent history (March 1999 – March 2002) outlining the significant mine in-flows, their respective location, elevations, and present in-flows and pressures. It goes on to describe the timing of when mining will be completed in the southern portion of the mine and the schedule and location for sealing certain portions of the mine. Once the southern portions of the mine are no longer mined, those sections will be allowed to flood. The flooding of mine workings will allow a pressure-head to build up against the current inflows. The pressure-head will continue to build against the inflows by filling the mine workings, up-gradient to the elevation of the ‘West Mains’; a maximum elevation of approximately 8290 feet. Calculations estimate the current inflows of approximately 9200 gpm will be reduced to anywhere from approximately 2900 gpm to possibly no discharge into Eccles Creek by December 2004. This rate of discharge is based on no pumping conducted from Well JC-1, which would further reduce discharge to Eccles Creek. This information, combined with the minimal inflows anticipated from the North Lease area, suggests that any potential impacts to Eccles Creek and Mud Creek will be short-lived. This information adequately addresses earlier Division concerns of how the currently high discharges will be handled in the future.

The Skyline Mine PHC determination has been modified primarily to the degree that it has incorporated/modified date-sensitive statements relative to the submittal of the HCI modeling information - Appendix J, K, and November 2004 supplemental memo. The modeling information is considered supporting evidence to the Mine’s position that the majority of water being encountered in-mine is being sourced from the regional Star Point Sandstone aquifer, outlines potential impacts to the surrounding area caused by long-term drawdown of the aquifer, and outlines probable consequences once mining is complete and mine workings are completely flooded. In Appendix K, Table 2 - Simulated Ground-Water outlines current and projected impacts to the surrounding area based on the current mining conditions; Figure 18 outlines impacts to streams through the next 50 years, and the November 2004 addendum outlines post-mining consequences. The model is not considered by the Division to be conclusive evidence,

only supportive evidence suggesting the majority of water encountered in-mine could be sourced from the Star Point Sandstone and long-term affects to the surrounding area have been minimized.

Significant recent events that will potentially affect the inflows being encountered in the Mine are completion of mining in the southern portion of Mine #2 and the resulting flooding of the mine workings up to the 6-Left area. The flooding of the mine workings reached an elevation of 8280 feet (msl) in September 2004, resulting in approximately 240-feet of hydrostatic head on the major inflows being encountered in the mine (10 Left elevation 8040-feet; HCI Table 3). The current mine plan intends on keeping the workings flooded to this level for an extended period of time. This steady-state condition will enable the mine to more accurately monitor changes in overall mine-inflow, and potentially evaluate whether there is a correlation to surrounding surface water. Conditions will continue to be monitored and assessed to determine whether impacts to surrounding areas are minimized.

#### **Groundwater Monitoring Plan**

The Permittee met the requirements of R645-301-731.211 and 212 by including a ground-water monitoring plan based upon the PHC determination and the analysis of all baseline hydrologic, geologic, and other information in the permit application (Section 2.3.7 of the MRP). The plan provides for the monitoring of parameters that relate to the suitability of the ground water for current and approved postmining land uses, and to the objectives for protection of the hydrologic balance. The Permittee outlines the quantity and quality parameters they will monitor, the sampling frequency, and site locations on Tables 2.3.7-1, 2.3.7-2, and 2.3.7-2A. The plan describes how the data will be used to determine the impacts of the operation upon the hydrologic balance. In addition to other parameters, the Permittee will sample for total dissolved solids, specific conductance, pH, total iron, total manganese, and water flows at all springs. At most of the wells, the Permittee just monitors levels. The Permittee submits ground water monitoring data to the Division every 3 months for each monitoring location, through the electronic data input (EDI) portion of the Division's Electronic Water Database. At this time, the Division does not require additional monitoring to that listed in Table 2.3.7-1 through 2.3.7-2A.

Section 2.3.6 – Groundwater Quality, discusses several wells that were developed and completed in the Star Point Sandstone sandstone. Table PHC A-2, Well Data Summary Table, outlines: the wells in the groundwater monitoring plan; the formation in which the wells are screened; the screen elevation; and the historic water level within the well. This table provides valuable information in understanding the groundwater. A brief discussion of Well W2-1 (98-2-1) has been provided which briefly outlines current conditions within the southern portion of the permit area. Since the well is located along a major fault and fracture zone, the water level within the well has been drawn down through pumping 197-ft.(as of August 2, 2002) from historic levels. This same response however, is not seen in groundwater wells not directly

connected with a fault system. For a complete discussion of the groundwater potentiometric surface, the reader is referred to the July 2002 Addendum to the PHC.

### **Surface-Water Monitoring Plan**

The Permittee met the requirements of R645-301-731.221, 222, and 223 by including a surface-water monitoring plan based upon the PHC determination required under R645-301-728 and the analysis of all baseline hydrologic, geologic and other information in the permit application (Section 2.4.4 of the MRP). The plan provides for the monitoring of parameters that relate to the suitability of the surface water for current and approved postmining land uses, and to the objectives for protection of the hydrologic balance, as well as the effluent limitations found in R645-301-751. The plan identifies the surface water quantity and quality parameters to be monitored, sampling frequency and site locations on Tables 2.3.7-1 through 2.3.7-2A. It describes how these data will be used to determine the impacts of the operation upon the hydrologic balance. In addition to other parameters, the Permittee will sample for total dissolved solids, specific conductance, total suspended solids, pH, total iron, total manganese and flow at all surface monitoring locations. For point-source discharges, the Permittee will monitor in accordance with their Utah Pollutant Discharge Elimination System (UPDES) permits. The Permittee submits surface water monitoring data to the Division every 3 months for each monitoring location, through the electronic data input (EDI) portion of the Division's Electronic Water Database. Monitoring submittals include analytical results from each sample taken during the approved reporting period.

### **Findings:**

The information provided adequately addresses the minimum requirements of the Environmental Resource Information – Hydrologic Resource Information section of the regulations.

## **MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION**

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

### **Analysis:**

#### **Affected Area Boundary Maps**

The Division usually considers the affected area to be the same as the permit area. The affected area may include areas that the Permittee has not yet acquired or permitted but plans to do so in the future. Drawing No. 1.6-3, Skyline Mines Permit Area, shows the location of the permit boundaries.

### **Archeological Site Maps**

The Permittee provides a summary of historic resource surveys within the permit area (Vol. 1, Sec. 2.1). Confidential Binder Vol. A-4 2<sup>nd</sup> Volume includes survey reports submitted for specific mining projects and an Archeology map.

### **Coal Resource and Geologic Information Maps**

Plate 2.2.1-1 – Surface Geology has been updated to include the North Lease area. It has also been expanded to include the O'Connor fault and an extension of the Connelville fault through the former Winter Quarters Mine area. In addition, drawing 2.1.1-2 – General Geologic Map of Permit Area, has been submitted for a further understanding of the regional surface geology. Drawing 2.1.1-2 expands geologic coverage east-west to include the Pleasant Valley fault and the Gooseberry fault; and north-south to include the Fish Creek graben area and the Electric Lake dam. The Star Point formation has also been mapped to help identify the anticipated discharge/recharge areas of the water being encountered in the southern portion of the current permit area. Quaternary-aged sediments have also been included in the lower reaches of the streams to help in the Alluvial Valley Floor (AVF) determination. On a regional scale when looking at fault alignments, the orientation in the southern portion of the permit area is south-southwest to north-northeast, while the orientation of the faults in the northern portion of the permit area is generally west-northwest to east-southeast. The central portion of the permit area is also truncated by a series of igneous intrusions (dikes). The geologic maps support the mine information indicating different geologic conditions exist.

In addition, Drawings 2.3.4-1A through –1C have been provided to give a graphic representation of the geology in cross-section. Drawing 2.3.4-1A provides a north-south cross section through the approximate center of the permit area; 2.3.4-1B runs east-west through the southern portion of the North Lease area; and 2.3.4-1C runs east-west through the southern portion of the current permit area, respectively. These drawings help illustrate the doming effect in the approximate middle of the property, the southwest to northwest dipping of the beds, and the thinning and pinching out of coal beds to the north. The additional information adequately addresses the Division's needs to identify the geology of the surrounding area.

Drawings 2.3.4-1A through 1-C were updated in November 2002 to provide graphic representation in cross section of the North Lease area. Additional geologic information is available in the Kravits report (November 3, 2003) and generalized cross sections in Appendix K (Hydrologic Model report) Figures 9-12.

### **Cultural Resource Maps**

None.

### **Existing Structures and Facilities Maps**

The Division usually considers the affected area to be the same the permit area. The affected area may include areas that the Permittee has not yet acquired or permitted but plans to do so in the future. Drawing No. 1.6-3, Skyline Mines Permit Area, shows the location of the permit boundaries.

### **Existing Surface Configuration Maps**

Drawing No. 1.6-3, Skyline Mines Permit Area, shows the existing surface configurations. The map has topographic lines that appear to come from a USGS topographic map. Because there are no scheduled surface facilities in North Lease Extension, the Division will not require the Permittee to provide a more detailed map.

### **Mine Workings Maps**

The Mine Workings Map has been updated to included proposed monitoring in the North Lease area. Modifications to the mining methods have been taken into account in areas surrounding perennial streams.

Drawing No. 2.2.7-7 shows the location of abandoned mine workings in and around the permit area. The horizontal distance between the proposed workings and the abandoned mine is 50 feet.

### **Monitoring and Sampling Location Maps**

The Permittee has met the requirements of R645-301-731.730, and 722.300 by including a map showing the locations and elevations of each station used to gather baseline data on water quality and quantity, and each station to be used for water monitoring during coal mining and reclamation operations (See Plate 2.3.6-1). The Permittee prepared and certified the map according to R645-301-512.

In addition, as part of the Subsidence Monitoring Plan, a total of forty-two flow-monitoring sites have been assigned to monitor flow changes in areas possibly affected by subsidence. These sites are outlined on Drawing 2.3.6-2 – North Lease Subsidence Hydrologic Monitoring Points.

### **Permit Area Boundary Maps**

Drawing No. 1.6-3, Skyline Mines Permit Area, shows the proposed permit area. The map is at a scale of 1 to 24,000.

### **Subsurface Water Resource Maps**

Drawing 2.3.4-2 shows the potentiometric surface in the permit area based on information provided by the existing monitoring wells in the permit area. The map helps illustrate the lack of connectivity of groundwater between the North Lease area and the southern portion of the existing mine. It should be noted however, that the potentiometric surface in the North Lease area is 'inferred', based solely on information from two wells. Due to the historically 'discontinuous' nature of the groundwater, it is possible that a continuous potentiometric surface may not exist between these two wells.

### **Surface and Subsurface Manmade Features Maps**

Plates 2.3.5.1-1 and 2.3.5.2-1 have been updated to include the North Lease area. No additional updates are necessary.

### **Surface and Subsurface Ownership Maps**

None.

### **Surface Water Resource Maps**

Plate 2.3.6-1 identifies the surface hydrology. Plate 1, Winter Quarters 2003 and 2004 Survey Site Plan, distinguishes between sections of the streams that are perennial and intermittent (solid and dashed lines, respectively). Winter Quarters and Woods Canyon were field verified to identify perennial reaches and beaver ponds impounding in excess of 0.25 acre-foot of water.

### **Vegetation Reference Area Maps**

No surface disturbance is planned within the North Lease. No reference area is required.

### **Wildlife Maps**

Wildlife maps are provided for in Appendix A-2 of the North Lease application and volume A-2 of the MRP. The applicant has committed to conduct a current raptor survey in the early summer 2003, prior to longwall mining.

### **Findings:**

The information provided meets the minimum requirements of the Environmental Resource Information – Maps, Plans, and Cross Sections of Resource Information section of the regulations.

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### **MINING OPERATIONS AND FACILITIES**

Regulatory Reference: 30 CFR 784.2, 784.11; R645-301-231, -301-526, -301-528.

#### **Analysis:**

The Permittee met the minimum requirements for this section of the TA by showing that the USFS modified the lease to allow full extraction mining under Woods Creek and Winter Quarters Creek. The Permittee update the MRP by removing the restriction on full extraction mining under Woods Creek and Winter Quarters Creek.

No surface facilities will be constructed in association with the North Lease Extension. There will be no additional support facilities or utility installations as part of the North Lease Extension.

No new mine openings are scheduled for the North Lease Extension.

There will be no change to the existing Air Quality permit.

There will be no anticipated surface disturbance and no soils handling operations.

There are no existing structures in the North Lease area.

The North Lease Extension will not require the Permittee to use any additional public roads or to relocate existing public roads.

The North Lease Extension will not require the Permittee to use any additional public roads or to relocate existing public roads.

No new roads or other surface transportation facilities will be constructed in association with the North Lease Extension.

No surface blasting will be associated with the North Lease Extension. An original USFS lease stipulation was that no full extraction mining (longwall) would occur under Woods Creek and Winter Quarters Creek. The USFS has since modified the lease to allow full extraction mining under Woods Creek and Winter Quarters Creek. CFC intended that the North Lease subsidence permit modification submittal to address all the UCMR pertaining to full extraction mining in the North Lease area.

**Findings:**

The information provided adequately addresses the minimum requirements of the Operation Plan – Mining Operations and Facilities section of the regulations.

**EXISTING STRUCTURES**

Regulatory Reference: 30 CFR 784.12; R645-301-526.

**Analysis:**

The Permittee met the minimum requirements for this section of the TA. The Permittee does use or propose to use any structure or facility used in connection with or to facilitate coal mining and reclamation operations for which construction began prior to January 21, 1981.

**Findings:**

The information provided adequately addresses the minimum requirements of the Operation Plan – Existing Structures section of the regulations.

**PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES**

Regulatory Reference: 30 CFR 784.17; R645-301-411.

**Analysis:**

The MRP meets the requirements of R645-301-411.144 because the Permittee identifies parks or historic resources that mining operations may adversely affect.

**Findings:**

The information provided adequately addresses the minimum requirements of the Operation Plan – Protection of Parks and Historic Places section of the regulations.

**RELOCATION OR USE OF PUBLIC ROADS**

Regulatory Reference: 30 CFR 784.18; R645-301-521, -301-526.

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### Analysis:

CFC will not relocate or use any additional public roads in connection with the North Lease. There is an old trail in the bottom of Winter Quarters Canyon. That structure should not be affected by subsidence.

### Findings:

The information provided adequately addresses the minimum requirements of the Operation Plan – Relocation or Use of Public Roads section of the regulations.

## COAL RECOVERY

Regulatory Reference: 30 CFR 817.59; R645-301-522.

### Analysis:

The Permittee meet the requirements of this section of the regulations. The R645-301 Rules require that the Permittee conduct underground mining activities so as to maximize the utilization and conservation of the coal, while utilizing the best technology currently available to maintain environmental integrity, so that re-affecting the land in the future through surface coal mining operations is minimized.

The Division relies upon several factors to determine if the Permittee will maximize coal recovery. A major source of information is the Resource Recovery Protection Plan (R2P2) prepared by the BLM. The BLM has determined that the current R2P2 is adequate.

Eight million tons of Federal coal currently lie within the approved mining plan area. Addition of the North Lease will bring another twelve million tons of Federal coal into the mine permit area. Maximum production is five million tons/yr. Production has averaged four million tons/yr.

The Permittee plans to mine only the Lower O'Connor "A" seam in the North Lease Extension area. The general requirements for economic coal according to the Permittee are:

- Coal thickness is greater than 5 feet.
- Interburden thickness is greater than 40 feet.

However, due to equipment limitations the Permittee will only be able to mine coal with a minimum thickness of 7.5 feet.

The Permittee plans to conduct all mining (excluding development work) with longwall equipment. Some areas in the North Lease Extension are not suitable for longwall mining and will not be mined.

The only part of the North Lease Extension that the Permittee plans to mine in the next five years is the southeast section. The area to the west has low coal from parting and therefore cannot be mined with the available equipment. A dike and two major faults block access to the north. The Permittee plans to drill four to six exploration holes in 2003 to determine if mining conditions to the north are feasible.

The Division reviewed the November 2002 draft version of the Resource Recovery Protection Plan (R2P2). The Bureau of Land Management's review and decision on the R2P2 is still pending.

The Division often relies on information in the resource recovery protection plan (R2P2). The Division usually finds that the R2P2 contains enough information to make a determination about economic coal recovery.

#### **Findings:**

The information provided adequately addresses the minimum requirements of the Operation Plan – Coal Recovery section of the regulations.

### **SUBSIDENCE CONTROL PLAN**

Regulatory Reference: 30 CFR 784.20, 817.121, 817.122; R645-301-521, -301-525, -301-724.

#### **Analysis:**

The Permittee met the requirements of this section of the R645-301 Rules. Those rules require the Permittee to conduct a survey, which shall show whether structures or renewable resource lands exist within the proposed permit area and adjacent area and whether subsidence, if it occurred, could cause material damage or diminution of reasonably foreseeable use of such structures or renewable resource lands.

The renewable resource subsidence surveys are part of Section 4.17.1 of the MRP. The Permittee found renewable resource within the permit boundary.

#### **Renewable Resources Survey**

The Permittee met the minimum requirements for the subsidence control plan by providing the following information:

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- A description of the method of coal removal, such as longwall mining, including the size, sequence, and timing for the development of underground workings. The Permittee met those requirements by showing on Map 3.3-2, Lower O'Conner "A"/Flat Canyon Five Year Projected Mine Plan that they will use longwall in the North Lease. The information is adequate for the Division to use in its analysis.
- A map of underground workings showing the location and extent of areas where planned-subsidence mining methods will be used and including all areas where measures will be taken to prevent or minimize subsidence and subsidence related damage and where appropriate, to correct subsidence-related material damage. Map 4.17.3-1A, North Lease Presubsidence Survey Map, shows the areas where subsidence is anticipated, the amount of subsidence (potential subsidence contours) and those areas where the Permittee believes that subsidence cracks could occur. The information is adequate for the Division to use in its analysis.
- A description of the physical conditions, such as depth of cover, seam thickness, and lithology, which affect the likelihood or extent of subsidence and subsidence-related damage. The Permittee showed the depth of cover and coal isopachs Map 2.2.7-2, Lower O'Conner "A"/Flat Canyon Overburden Map. The depth of cover ranges from 500 feet to 2,000 feet. The seam thickness is shown on Map 2.2.7-1, Lower O'Conner "A"/Flat Canyon Isopach. The geology report is in Volume A-3 of the MRP. The information is adequate for the Division to use in its analysis.
- A description of monitoring, if any, needed to determine the commencement and degree of subsidence so that, when appropriate, other measures can be taken to prevent, reduce, or correct material damage. CFC did not change the monitoring program, which consists of a commitment to conduct annual aerial surveys. In addition, CFC committed to conduct infrared aerial photography each year on the North Lease area. The Division now requires the Permittee to commit to conduct on the ground reconnaissance at least six months after a panel has been mined out, but no more than twelve months afterwards.
- Except for those areas where planned subsidence is projected to be used, a detailed description of the subsidence control measures that will be taken to prevent or minimize subsidence and subsidence-related damage, including, but not limited to: backstowing or backfilling of voids; leaving support pillars of coal; leaving areas in which no coal is removed, including a description of the overlying area to be protected by leaving the coal in place; and, taking measures on the surface to prevent material damage or lessening of the value or reasonably foreseeable use of the surface. The Permittee will use longwall mining methods for the North Lease. All mined area with the exception of mains are scheduled to be subsided. The information is adequate for the Division to use when analyzing when and where subsidence could occur.

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- A description of the anticipated effects of planned subsidence, if any. In Section 4.17.1 of the MRP, the Permittee specifically mentions the anticipated subsidence effects in the North Lease area. The Permittee does not anticipate any subsidence related impacts on the pack trail in the bottom of Winter Quarter Canyon.
- A description of the measures to be taken to mitigate or remedy any subsidence-related material damage to, or diminution in value or reasonably foreseeable use of the land, or structures or facilities to the extent required under State law. In Section 4.17.4, Mitigation of Subsidence Effects, of the MRP, the Permittee states, "that mitigation will be contingent upon the findings of the subsidence monitoring program. Surface subsidence experienced to date, as shown in the 1987 and 1988 annual reports, has been less than 50% of the mining height even after 2 years has passed. As data are collected, methods of mitigation will be formulated."
- Other information specified by the Division as necessary to demonstrate that the operation will be conducted in accordance with the performance standards for subsidence control. The Division does not need any other information at this time.

### **Subsidence Control Plan**

The mining of the North Lease includes undermining of perennial streams. As a portion of the Subsidence Monitoring Plan, drawing 2.3.6-2 has been provided which identifies the projected North Lease workings, areas of the permit area with less than 700-ft of cover, potential subsidence contours, and the Monthly North Lease Flow Monitoring Points. These flow monitoring locations (seven (7) total sites) will be monitored beginning at least 6-months prior to the area being mined, and continued to be monitored for at least 6-months after the area has been mined. Frequency of monitoring will be on a monthly basis; weather permitting. The additional information adequately identifies the areas of potential subsidence, and adequately monitors potential adverse impacts due to subsidence.

Components of the subsidence control plan are as follows:

- Map No. 3.3-2 and map No. 3.1.8-2 show the timing and sequence of mining operations. The Permittee has stated that except for development work all mining will be done with longwall equipment. The use of longwall equipment means that most subsidence should take place within weeks of mining and the ground should stabilize after six months.
- The Permittee must include map(s) that show the location and extent of the areas in which planned subsidence mining methods will be used and that identifies all areas where measures will be taken to prevent subsidence or subsidence related damage. No areas exist in the projected subsidence zone for the North Lease that need special protection.

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- The physical conditions, such as depth of cover, seam thickness and lithology overlaying strata that affects the likelihood or extent of subsidence and subsidence related damage is contained in the geology section. That information is in the geology section of the PAP and is considered adequate.
- A description of the monitoring that is needed to determine the commencement and degree of subsidence. The Permittee did not address this issue in the PAP, with the exception of showing the location of subsidence monitoring points. Those points are shown on drawing No. 4.17.5-1. However, in the MRP the Permittee does describe a subsidence-monitoring program (MRP, Section 4.17.5). The monitoring program in the MRP is considered adequate.
- The subsidence-monitoring program uses aerial photography to determine the amount of subsidence and area affected. The Manti-LaSal National Forest Service developed the program. Most coal mines in Utah use aerial photography. Due to the rough terrain, monitoring survey points with terrestrial surveying is impractical.
- Terrestrial surveys are most useful for locating cracks and other subsidence features. The Permittee has committed to doing annual on-the-ground visual inspections of the ground surface of subsided areas.
- The Permittee has not identified any areas that need protection from subsidence damage.
- The Permittee described the measures to be taken in accordance with R645-301-731.530 and R645-310-525.500 to replace adversely affected, State-appropriated water supplies or to mitigate or remedy and subsidence-related material damage to the land and protected structures as follows:

In Section 2.5.3 of the PAP the Permittee states the following about replacement of State-appropriated water supplies.

*“The restoration of water flows to impacted sources will be accomplished using the Best Technology Currently Available (BTCA). These activities may include, but not necessarily be limited to: transferring water rights to the injured party in flow equal to the determined loss; piping or trucking water to the location of the loss; sealing surface fractures to prevent further losses (i.e., stream floors on bed rock or in shallow alluvium); and, construction of a ground water well and the installation of pumps to restore flows; and monetary reimbursement for proven material damages. If the above efforts are not successful, the Skyline will explore the transferring water rights to the injured party in flow equal to the determined loss and/or monetary reimbursement for proven material damages.”*

Part of any mitigation plan is to restore the land to the pre-mining land use. The land use is often associated with the availability of water. Therefore, any interruption of water supplies could affect the land use. The preferred method of mitigation is to restore the water supply. That can be done in a number of different ways including restoration of a spring or seep, sealing cracks and fissures or possibly drilling a well. Other alternatives include piping or trucking in water.

In some cases, there is no economical or technically feasible way to restore water at the source. The only options for mitigation are to either transfer water right shares or to make monetary reimbursement. When all other options have been exhausted the Division will allow transfer of water rights and monetary reimbursement.

- In the MRP, the Permittee makes a general commitment to repair damage to surface lands and to non-commercial buildings and dwellings and related structures. A general commitment is acceptable to the Division because of the difficulty in predicting what type of mitigation would be needed.
- In accordance with R645-301-545.542, the Division has reviewed the information in the annual subsidence reports and the geology in the North Lease and found that a 22 angle-of-draw to be adequate for the North Lease. There are no buildings or structures in the North Lease permit area.

The subsidence control plan must contain the following information:

- *A description of the method of coal removal, such as longwall mining, including the size, sequence, and timing for the development of underground workings.* CFC did not state those requirements in the amendment. Map 3.3-2, Lower O'Conner "A"/Flat Canyon Five Year Projected Mine Plan, shows longwall panels in the North Lease. However, in Section 4.17.1 of the MRP, CFC states that only development mining will occur in the North Lease. CFC does not mention switching from development mining to longwall mining in the amendment.

In a phone conversation between Wayne Western of the Division and Chris Hansen of CFC on August 24, 2004, Chris mentioned that CFC submitted the amendment as part of the process to get permission to use longwall mining methods in the North Lease area.

CFC must clarify their intentions by stating in the amendment that CFC seeks approval to conduct longwall mining in the North Lease area. This deficiency was identified in the Mining Operations and Facilities section of the technical analysis.

- *A map of underground workings showing the location and extent of areas where planned subsidence mining methods will be used and including all areas where measures will be taken to prevent or minimize subsidence and subsidence related damage and where appropriate, to correct subsidence-related material damage.* Map 4.17.3-1A, North

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Lease Presubsidence Survey Map, shows the areas where subsidence is anticipated, the amount of subsidence (potential subsidence contours) and those areas where CFC believes that subsidence cracks could occur. All of the areas where CFC shows the potential for surface subsidence cracks to occur are on ridges, not in valleys. In a personal conversation between Wayne Western of the Division and Dale Harber of the USFS, Mr. Harber stated that the USFS is concerned that mining under perennial streams, especially perennial streams with less than 600 feet of cover could be damaged by subsidence cracks. The USFS and the Division will use the information on Map 4.17.3-1A in the analysis to determine if mining will cause damage to Woods Creek and Winter Quarters Creek.

- *A description of the physical conditions, such as depth of cover, seam thickness, and lithology, which affect the likelihood or extent of subsidence and subsidence-related damage.* CFC shows the depth of cover and coal isopachs Map 2.2.7-2, Lower O'Conner "A"/Flat Canyon Overburden Map. The depth of cover ranges from 500 feet to 2,000 feet. The seam thickness is shown on Map 2.2.7-1, Lower O'Conner "A"/Flat Canyon Isopach. The geology report is in Volume A-3 of the MRP. The information is adequate for the Division to use in its analysis.
- *A description of monitoring, if any, needed to determine the commencement and degree of subsidence so that, when appropriate, other measures can be taken to prevent, reduce, or correct material damage.* CFC did not change the monitoring program, which consists of a commitment to conduct annual aerial surveys. In addition, CFC committed to conduct infrared aerial photography each year on the North Lease area.
- *Except for those areas where planned subsidence is projected to be used, a detailed description of the subsidence control measures that will be taken to prevent or minimize subsidence and subsidence-related damage, including, but not limited to: backstowing or backfilling of voids; leaving support pillars of coal; leaving areas in which no coal is removed, including a description of the overlying area to be protected by leaving the coal in place; and, taking measures on the surface to prevent material damage or lessening of the value or reasonably foreseeable use of the surface.* CFC proposes to use longwall mining methods for all areas of the North Lease. All mined area with the exception of mains are scheduled to be subsided. The information is adequate for the Division to use when analyzing when and where subsidence could occur.
- *A description of the anticipated effects of planned subsidence, if any.* In Section 4.17.1 of the MRP, CFC specifically mentions the anticipated subsidence effects in the North Lease area. CFC does not anticipate any subsidence related impacts on the pack trail in the bottom of Winter Quarter Canyon. CFC states that no subsidence will occur in the area until permission is granted by the USFS and the Division.
- *A description of the measures to be taken to mitigate or remedy any subsidence-related material damage to, or diminution in value or reasonably foreseeable use of the land, or*

## OPERATION PLAN

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*structures or facilities to the extent required under State law.* In Section 4.17.4, Mitigation of Subsidence Effects, of the MRP, CFC states, "that mitigation will be contingent upon the findings of the subsidence monitoring program. Surface subsidence experienced to date, as shown in the 1987 and 1988 annual reports, has been less than 50% of the mining height even after 2 years have passed. As data are collected, methods of mitigation will be formulated."

CFC stated that if any water rights are impacted, they would be replaced as discussed in Section 2.5.2 of the MRP.

Additional information on how CFC will mitigate loss of state appropriated water rights is in Section 2.5.3, Alternative Water Supply, of the MRP. In that section, CFC mentions that mitigation methods include sealing cracks in streambeds and providing water from other sources.

*Other information specified by the Division as necessary to demonstrate that the operation will be conducted in accordance with the performance standards for subsidence control.* The Division does not need any other information at this time.

### **Performance Standards For Subsidence Control**

In addition to the performance standards required by Utah Regulation, the Permittee will be required to meet the stipulations placed on the lease by the Forest Service. Of particular importance to subsidence control is Forest Service Lease Stipulation #9 that reads,

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

### **Notification**

The Permittee has mailed notification to the water conservancy district and to the surface land owner (U.S. Forest Service) concerning the identification of specific areas in which mining will take place, dates that specific areas will be undermined, and the location or locations where the operator's subsidence control plan may be examined. The Permittee has committed in Section 4.17.7 to provide the U.S. Forest Service with annual updates of subsidence information.

### **Findings:**

The information provided adequately addresses the minimum requirements of the Operation Plan – Subsidence Control Plan section of the regulations

**OPERATION PLAN**

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**FISH AND WILDLIFE INFORMATION**

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

**Analysis:**

The MRP meets the requirements of R645-301-333, R645-301-342, and R645-301-358 because the Permittee will use the best technology available to minimize impacting wildlife and its critical habitat. There is also sufficient information relating to protection/enhancement plans or there is adequate information to develop additional protection/enhancement plans, under the direction of the Division and other agencies.

**Protection and Enhancement Plan**

The DWR recently implemented a protection/mitigation agreement with the USFWS for the sage grouse. However, there will probably be no additional changes to the MRP concerning the grouse because there is no surface disturbance for facilities for the North Lease.

The plan for the North Lease area includes undermining perennial streams. Potential disturbance may result from subsidence that could affect stream channel habitat. The Permittee provides information supporting the unlikelihood of surface disturbance to the stream channels. Regardless, the Permittee will conduct baseline and monitoring surveys of vegetation, macroinvertebrate, and fish along Winter Quarters and Woods stream channels. The Permittee agrees to provide plans to avoid, protect, enhance, or mitigate under the direction of the Division.

The plan for the North Lease area includes also undermining some cliff habitat. Potential disturbance may result from subsidence that could affect this habitat. The Permittee provides information supporting the unlikelihood of surface disturbance to the cliffs. Regardless, the Permittee will conduct baseline and monitoring over-flight surveys of raptors and nests associated with the cliff habitat.

**Endangered and Threatened Species**

*Colorado River Fish*

The MRP includes derivations and values of consumption and addition of water to the Colorado River at the time of the North lease extension review (2002-2005). The Permittee estimated the total water balance as an annual net gain of 5,966 acre-feet (Vol.1A, Sec. 2.5). The Division, in consultation with the USFWS, considered that mining operations were "not likely to adversely affect" the endangered fishes of the Colorado River Basin because there was no indication of depleting water from the Basin.

The Permittee must update all equations and justifications with supporting documentation leading to the overall sum of water depletions or additions when projects would significantly change the current estimated value.

### **Bald and Golden Eagles**

Bald eagles are not common in the area during the winter but could occasionally fly through or roost in the proposed addition to the permit area. Mining would have negligible effects on these birds. The Forest Service stated that Bald Eagles are frequently seen around Scofield reservoir in October and November, but leave after the reservoir freezes.

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

The perennial streams, springs and riparian areas within the North Lease area are probable habitats of high value for fish and wildlife. The 1995 EA reports that the riparian habitat appears to be in excellent condition on the forest (in the North Lease area), but below the forest boundary to the east it has been heavily impacted by livestock grazing.

The MRP provides updated-monitoring and vegetation information along the stream channels. The Permittee considers that subsidence will not impact seeps and springs and bases their conclusion on the study conducted in Burnout Canyon.

Streams, springs, and seeps may serve as refuge for isolated populations of benthic organisms, such as mollusks. Historical records for one rare mollusk (*Physella virgata*) exist for Carbon County. The 2002/2003-macroinvertebrate survey results only list one mollusk *Spaherium*. Future surveys may show positive results for other mollusks including the rare *Physella*.

### **Findings:**

The information provided adequately addresses the minimum requirements of the Operation Plan - Fish and Wildlife section of the regulations.

## **VEGETATION**

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

### **Analysis:**

The MRP meets the requirements of R645-301-330, R645-301-331, and R645-301-332 because the Permittee provided measures to disturb the smallest area possible, plans to apply interim reclamation practices when applicable, and descriptions of mitigation procedures for subsidence-related impacts.

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**OPERATION PLAN**

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The MRP indicates that there is no anticipated surface effects to the North Lease permit area (Sec. 2.7.6). Regardless, the Forest Service Lease Stipulation # 7 requires monitoring of effects of mining.

The Permittee will implement an aerial photogrammetric monitoring program to help “determine the effects of underground coal mining on surface renewable resources (Sec. 4.17.5). The plan indicates that the monitoring program secures adequate baseline data prior to any subsidence to quantify the existing surface renewable resources....” The Division, however, determined that the Permittee will also conduct vegetation baseline and monitoring ground surveys along Winter Quarters and Woods stream channels.

The MRP indicates that aerial photographs were taken in August 2002 of the North Lease Tract to provide a baseline information. The Permittee plans to take annual aerial photographs, have a qualified person evaluate the data, and include a summary of the results in the Annual Report for the Skyline Mine. The MRP also describes color infrared aerial photography (CIR) on the same scale as the photogrammetric monitoring (Sec. 4.17.5). If results identify that mining operations are diminishing habitat, the MRP must describe protection measures (refer to R645-301-333.300).

**Findings:**

The information adequately addresses the minimum requirements of the Operation Plan – Vegetation section of the regulations.

**SPOIL AND WASTE MATERIALS**

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

**Analysis:**

There will be no changes to the following material handling systems: disposal of noncoal mine waste, coal mine waste, refuse piles, impounding structures, burning and burned waste utilization, return of coal processing waste to abandoned underground workings or excess spoil.

**Refuse Piles**

Page 3-57 of Section 3.2.8 of the application indicates that the Scofield waste rock site has been filled to 70% of its 300,000 tons capacity. The Permittee anticipates 40,000 tons of waste rock being generated during development mining in years 2002 and 2003, leaving only 40,000 tons of capacity at the waste rock site. After development, the Permittee anticipates

generating 10,000 tons of waste annually. Thus, the Scofield waste rock site has four years of remaining capacity after development mining.

Longwall mining of the Lower O'Conner A seam will entail an evaluation of the Permittee's life-of-mine disposal requirements.

**Findings:**

Information provided adequately addresses the minimum requirements of the Operation Plan – Spoils and Waste Materials section of the regulations. for the purposes of Spoil and Waste Material Operation Plan during development mining.

**HYDROLOGIC INFORMATION**

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

**Analysis:**

**General**

The Permittee presents much of the required hydrologic information in Sections 2.3 (groundwater), 2.4 (surface water), 2.5 (hydrologic impacts of mining activities), Exhibit "A" (PHC), and the 2-volume addendum to the PHC.

The Permittee has met the requirements of R645-301-731 by presenting a plan that includes maps and descriptions, indicating how they will meet the relevant hydrology requirements. Their plan is specific to the local hydrologic conditions, and contains the steps the Permittee will take during coal mining and reclamation operations, through bond release, to:

- Minimize disturbance to the hydrologic balance within the permit and adjacent areas.
- Prevent material damage outside the permit area.
- Support approved post mining land use in accordance with the terms and conditions of the approved permit and performance standards of R645-301-750.
- Comply with the Clean Water Act (33 U.S.C. 1251 et seq.)
- Meet applicable federal and Utah water quality laws and regulations.

The plan also includes the measures the Permittee will take to:

- Avoid acid or toxic drainage.

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OPERATION PLAN

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- Prevent, to the extent possible (using the best technology currently available) additional contributions of suspended solids to stream flows.
- Provide water treatment facilities when needed.
- Control drainage.

The plan specifically addresses any potential adverse hydrologic consequences identified in the PHC, and includes preventative and remedial measures.

The Division has required additional monitoring measures to assure that material damage to the hydrologic balance outside the permit area is prevented, those are now part of the plan.

The following sections of this technical memo discuss the specific ways in which the Permittee has met the regulations, as they pertain to the amendment.

#### **Groundwater Monitoring**

The Permittee has met the requirements of R645-301-731.211 and 212 by including a ground-water monitoring plan based upon the PHC determination and the analysis of all baseline hydrologic, geologic, and other information in the permit application (Section 2.3.7 of the MRP). The plan provides for the monitoring of parameters that relate to the suitability of the ground water for current and approved postmining land uses, and to the objectives for protection of the hydrologic balance. The Permittee outlines the quantity and quality parameters they will monitor, the sampling frequency, and site locations on Tables 2.3.7-1, 2.3.7-2, and 2.3.7-2A. The plan describes how the data will be used to determine the impacts of the operation upon the hydrologic balance. In addition to other parameters, the Permittee will sample for total dissolved solids, specific conductance, pH, total iron, total manganese, and water flows at all springs. At most of the wells, the Permittee just monitors levels. The Permittee submits ground water monitoring data to the Division every 3 months for each monitoring location, through the electronic data input (EDI) portion of the Division's Electronic Water Database. At this time, the Division does not require additional monitoring to that listed in Table 2.3.7-1 through 2.3.7-2A.

In accordance with R645-301-731.214, the Permittee will continue to monitor groundwater throughout the life of the mine, and during reclamation until bond release.

Consistent with the procedures of R645-303-220 through R645-303-228, the Division allowed modifications to the original MRP monitoring requirements, as the Permittee requested, since the Permittee has demonstrated, using the monitoring data obtained under R645-301-731.214 that:

- The coal mining and reclamation operation has minimized disturbance to the prevailing hydrologic balance in the permit and adjacent areas;
- Prevented material damage to the hydrologic balance outside the permit area (at least as far as changes in water *quality* are concerned, the Permittee will continue to

monitor water *quantity* at each of these sites since the Permittee and the Division are continuously analyzing the Electric Lake Situation); and

- Water quantity and quality are suitable to support approved postmining land uses.

Under R645-301-731, the Division will require additional monitoring measures to assure that material damage to the hydrologic balance outside the permit area is prevented. Those measures are to monitor the 13 springs (S13-2, S14-4, S15-3, S22-5, S22-11, S23-4, S24-12, S26-13, S34-12, S35-8, S36-12, 2-413, and 3-290) for the currently required laboratory parameters at high and low flow (where accessible) once every five years (2010, 2015, etc.), and whenever abrupt changes in flow occur.

Concerning continuing drawdown of the Star Point Sandstone aquifer for an extended period, the Division requested that any appreciable springs located in the Star Point Sandstone with elevations above approximately 8,300 feet (msl), that are not included in the current hydrologic monitoring program to be added. In response, Canyon Fuel has added Sulfur Spring (S24-1) to the water monitoring program. It is located downstream of Electric Lake and east of both the Connelville and O'Connor faults, but is located within the Star Point Sandstone and at the correct elevation. In addition, to help identify the waters entering Electric Lake, springs 8-253 (Flat Canyon), 2-413 (James Canyon), and S15-3 (Upper Huntington Creek) have been officially added to the Water Monitoring program to include tritium analysis for a period of three (3) years. Spring S15-3 was already on the water-monitoring schedule, but tritium was added.

### **Surface Water Monitoring**

The Permittee has met the requirements of R645-301-731.221, 222, and 223 by including a surface-water monitoring plan based upon the PHC determination required under R645-301-728 and the analysis of all baseline hydrologic, geologic and other information in the permit application (Section 2.4.4 of the MRP). The plan provides for the monitoring of parameters that relate to the suitability of the surface water for current and approved postmining land uses, and to the objectives for protection of the hydrologic balance, as well as the effluent limitations found in R645-301-751. The plan identifies the surface water quantity and quality parameters to be monitored, sampling frequency and site locations on Tables 2.3.7-1 through 2.3.7-2A. It describes how these data will be used to determine the impacts of the operation upon the hydrologic balance. In addition to other parameters, the Permittee will sample for total dissolved solids, specific conductance, total suspended solids, pH, total iron, total manganese and flow at all surface monitoring locations. For point-source discharges, the Permittee will monitor in accordance with their Utah Pollutant Discharge Elimination System (UPDES) permits. The Permittee submits surface water monitoring data to the Division every 3 months for each monitoring location, through the electronic data input (EDI) portion of the Division's Electronic Water Database. Monitoring submittals include analytical results from each sample taken during the approved reporting period.

In accordance with R645-301-731.224, the Permittee will continue to monitor surface water throughout the life of the mine, and during reclamation until bond release.

## OPERATION PLAN

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Consistent with R645-303-220 through R645-303-228, the Division is allowing the modifications to the monitoring requirements, as requested in this application, since the Permittee has demonstrated, using the monitoring data obtained under R645-301-731.224 that:

- The Permittee has minimized disturbance to the hydrologic balance in the permit and adjacent areas;
- Prevented material damage to the hydrologic balance outside the permit area (at least as far as changes in water *quality* are concerned, the Permittee will continue to monitor water *quantity* at each of these sites since the Permittee and the Division are continuously analyzing the Electric Lake Situation);
- Water quantity and quality are suitable to support approved postmining land uses.

Under R645-301-731, the Division will require additional monitoring measures to assure that material damage to the hydrologic balance outside the permit area is prevented. Those measures are to monitor the 8 stream sites (CS-1, CS-7, CS-8, CS-10, CS-16, CS-17, CS-18, and VC-10) for the currently required laboratory parameters at high and low flow (where accessible) once every five years (2010, 2015, etc.), and whenever abrupt changes in flow occur.

### **Water-Quality Standards And Effluent Limitations**

In Section 2.5.2 – Mining Impacts on Water Quantity (page 2-51a – 2-51b), a discussion outlines that the unanticipated discharges currently being generated greatly exceed the UPDES permit that was written when the mine was opened. Flows were expected to be less than 1,000 gpm and the limits on total dissolved solids (TDS) were created based on that volume. The initial flow increases encountered from 1999 through 2001 had problems with the toxicity caused by nickel concentrations and high TDS. With the significant inflow to the mine from the 10 Left area and changes in how water is handled underground the TDS and dissolved nickel declined over time. However, the Permittee had to increase mine discharge again in September 2004 to keep up with inflows, and the total dissolved solids (TDS) began to exceed the UPDES permit limit of 7.1 tons per day (tpd). However, the discharge continued to comply with the 1310 mg/L limit for TDS.

Canyon Fuel worked closely with DWQ to remedy the situation, and after much study and effort, DWQ modified the Skyline Mine UPDES permit in May of 2003 to remove the 7.1 ton per day limit for TDS, unless the 30-day average were to exceed 500 mg/l.

The Utah Division of Water Quality (DWQ) issued the current permit on Nov. 23, 2004; it allows for a daily maximum of total dissolved solids discharged (TDS) of 1310 mg/l and a 30-day average of 500 mg/l. There is no tons per day (tpd) daily maximum, unless the 30-day average exceeds 500 mg/l; then a 7.1-tpd limit is imposed. The permit also states:

*Upon determination by the Executive Secretary that the Permittee is not able to meet the 500 mg/L 30-day average or the 7.1 tons per day loading limit, the Permittee is required to*

*participate in and/or fund a salinity offset project to include TDS offset credits, within six (6) months of the effective date of this permit.*

*In September of 2004, Skyline's mine discharge began averaging 850-950 mg/l TDS, and due to volume of water pumped (approx 3500 gpm) they also routinely exceed the tons per day limit. Because the conditions at the mine will require such pumping for quite some time, Canyon Fuel Company prepared a salinity offset plan and submitted it as required to DWQ. The Division of Water Quality approved the plan on January 5, 2005, but it is retroactive to September 2004.* Findings:

The information provided adequately addresses the minimum requirements of the Operation Plan – Hydrologic Information section of the regulations.

## **MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS**

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

### **Analysis:**

#### **Affected Area Maps**

The Division usually considers the affected area to be the same as the permit area. The affected area may include areas that the Permittee has not yet acquired or permitted but plans to do so in the future. Drawing No. 1.6-3, Skyline Mines Permit Area, shows the location of the permit boundaries.

#### **Mining Facilities Maps**

No new surface mining facilities will be constructed.

#### **Mine Workings Maps**

The Permittee met the requirements for mine working maps by providing Map 3.3-2, Lower O'Conner "A"/Flat Canyon Five Year Projected Mine Plan. The map shows the location of the mine workings associated with the North Lease.

Drawing No. 2.2.7-7 shows the location of abandoned mine workings in and around the permit area. The horizontal distance between the proposed workings and the abandoned mine is 50 feet. The map also shows the existing and proposed workings.

Drawing No. 3.3-2, Lower O'Conner "A"/Flat Canyon Five Year Projected Mine Plan, show the location of the current and proposed mine workings. Douglas E. Johnson, a registered professional engineer, certified that map.

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**OPERATION PLAN**

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**Monitoring and Sampling Location Maps**

Plate 2.3.6-1 shows all regular water sampling sites. Drawing 2.3.6-2, North Lease Subsidence Hydrologic Monitoring Points, shows the forty-two sites to the Permittee will monitor flow at six months prior to- and six months after mining.

**Certification Requirements**

All maps that require certification have been certified.

**Findings:**

The information provided meets the minimum requirements of the Operation Plan – Maps, Plans, and Cross Sections of Mining Operations section of the regulations.



**RECLAMATION PLAN**

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**RECLAMATION PLAN**

**GENERAL REQUIREMENTS**

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

**Analysis:**

No surface disturbance is proposed within the North Lease Permit Area. Therefore there is no information in the submittal for approximate original contour, reclamation of a disturbed area, backfilling and grading, mine openings and road system reclamation, stabilization of surface areas or post-mining land use.

Small areas associated with drill hole disturbance will be reclaimed. Reclamation of the drill holes is outlined under the exploration permit.

Since no new surface facilities or disturbance will occur because of the North Lease Extension, a bond adjustment is not required at this time.

**Findings:**

The information provided adequately addresses the minimum requirements of the Reclamation Plan – General Requirements section of the regulations.

**HYDROLOGIC INFORMATION**

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

**Analysis:**

**Hydrologic Reclamation Plan**

In Section 2.4.4 of the MRP the Permittee commits to continued sampling 'throughout the post-mining period until the reclamation effort is determined successful by the regulatory authority'. This adequately covers the Hydrologic Reclamation Plan.

**Findings:**

The information provided adequately addresses the minimum requirements of the Reclamation Plan – Hydrologic Information section of the regulations.

**MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS**

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

**Analysis:**

**Affected Area Boundary Maps**

The Division usually considers the affected area to be the same as the permit area. The affected area may include areas that the Permittee has not yet acquired or permitted but plans to do so in the future. Drawing No. 1.6-3, Skyline Mines Permit Area, shows the location of the permit boundaries.

**Bonded Area Map**

The bonded area usually is the same as the disturbed area. Since there will be no additional surface disturbance there is no need to change the bonded area maps at this time.

**Reclamation Backfilling And Grading Maps**

There will be no changes to the backfilling and grading plans because of the North Lease Extension.

**Reclamation Facilities Maps**

No new reclamation facilities will be associated with the North Lease Extension.

**Final Surface Configuration Maps**

The final surface configuration will not change because of the North Lease Extension.

**RECLAMATION PLAN**

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**Reclamation Surface And Subsurface Manmade Features Maps**

No new surface or subsurface manmade features are associated with the North Lease Extension.

**Findings:**

The information provided adequately addresses the minimum requirements of the Reclamation Plan – Maps, Plan, and Cross Sections of Reclamation Operations section of the regulations.

**BONDING AND INSURANCE REQUIREMENTS**

Regulatory Reference: 30 CFR Sec. 800; R645-301-800, et seq.

**Analysis:**

Since no new surface facilities or disturbance will occur because of the North Lease Extension, a bond adjustment is not required at this time.

**Findings:**

The information provided adequately addresses the minimum requirements of the Reclamation Plan - Bonding and Insurance Requirements section of the regulations.

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C/007/0005  
October 31, 2005

**RECLAMATION PLAN**

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## CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT (CHIA)

Regulatory Reference: 30 CFR Sec. 784.14; R645-301-730.

### Analysis:

The Permittee has provided sufficient information concerning the North Lease addition to the Skyline Mine permit area for the Division to make a determination of the impacts to the cumulative hydrologic regime. The Division has determined the mining of the North Lease will have minimal if any impacts on the Cumulative Hydrologic Impact Area based on the following provided information:

- The proposed mining is a continuation of Mine #3 where no significant in-mine water was encountered; making no significant contribution to mine discharge.
- Based on Burnout Canyon subsidence studies, where two seams were mined, minimal impacts to the perennial nature of surface hydrology were noted due to subsidence. Only one (1) seam of mining is proposed in the North Lease area.
- The provided geologic information indicates the mine is located on a 'dome-like' feature; Mine #3 dips northwest while Mines #1 and #2 dip west southwest, and the hydrologic regime in Mine #3 is different and not in communication with the hydrologic regime of Mine #2 or Mine #1.
- In-mine mechanical tests conducted on the rocks in Mine #3 are in a state of compression (similar tests in Mine #2 indicate the rocks are in extension), which will further limit the hydraulic conductivity of the geologic units holding any potential water.
- Groundwater wells and exploration drill holes in the North Lease area indicated minimal water production potential.
- Adequate surface-water, groundwater, stream bank stability, and subsidence monitoring plans have been outlined to identify adverse impacts, should any begin to occur.

Based on the information currently submitted, and information submitted to the Division since the last Cumulative Hydrologic Impact Assessment (CHIA) revision, the Division CHIA is in the process of being updated. The modifications are primarily date-sensitive and do not affect the overall current assessment. The information provided, primarily the HCI numeric ground water modeling reports – Appendix J, K, and November 2004 are considered supporting evidence to indicate the mining operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

**Findings:**

The information provided adequately addresses the minimum requirements of the CHIA section of the regulations. The Division finds that mining of the North Lease has been designed to minimize impacts within the permit area and to prevent material damage outside the permit area.

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IN REPLY REFER TO:

# United States Department of the Interior

OFFICE OF SURFACE MINING  
Reclamation and Enforcement  
P.O. Box 46667  
Denver, Colorado 80201-6667

March 1, 2006

UT-0003

Mr. Dan Meadors  
General Manager  
Canyon Fuel Company, LLC  
HC 35 Box 380  
Helper, Utah 84526

Dear Mr. Meadors:

On February 24, 2006, the Department of the Interior approved a mining plan modification for Federal lease UTU67939 at Canyon Fuel Company LLC's Skyline Mine. This mining plan action relates to Federal lands associated with the Utah Department of Natural Resources, Division of Oil, Gas, and Mining's State Decision Document, Canyon Fuel Company, LLC, North Lease - UTU-67939, Full Extraction Mining, Skyline Mine, C/007/0005 approved on December 2, 2005.

I have enclosed a copy of the mining plan approval document and associated map for this new mining plan. Please read the terms and conditions of the mining plan approval document carefully. Mining and reclamation operations must be conducted in accordance with both the Utah state permit and the approved mining plan.

The February 24, 2006, approval allows you to begin full extraction by longwall mining methods in the Lower O'Connor "A" coal seam, in the of the North Lease Tract, Federal coal lease UTU-67939, within the area covered by Utah State permit ACT/007/0005.

If you have any questions, please contact me at (303) 844-1400, extension 1500.

Sincerely,

Carl R. Johnston, Project Manager

Enclosure

cc: BLM - Utah State Office  
BLM - Price Field Office  
U.S. Forest Service - Manti-La Sal National Forest  
Utah Department of Natural Resources  
OSM - Denver Field Division

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