ANNUAL REPORT - 1998
CENTENNIAL MINE - ACT/007/019

ANNUAL REPORT - 1998
CENTENNIAL MINE - ACT/007/019

ANDALEX RESOURCES, INC.

P.O. BOX 902
PRICE, UTAH 84501
PHONE (435) 637-5385
FAX (435) 637-8860

July 9, 1999

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

(fax)
Copy letter to Steve D.
ACT/015/019 #6

Attn: Pamela Grubaugh-Littig
re: Annual Reports

Dear Ms. Pam Littig

It has come to my attention that the mine map which was submitted to you as part of ANDALEX's annual report for the Centennial mines was not certified by a registered P.E. Therefore I have enclosed an additional copy of the map which has been certified to replace the one previously sent.

Please call me with any questions.

Sincerely,

Michael W. Glasson
Senior Geologist

1998 ANNUAL REPORT			Page 1

GENERAL INFORMATION

1. Permit Number	ACT 007/019
2. Mine Name	Centennial
3. Permittee Name	ANDALEX Resources, Inc.
4. Operator Name (if other than Permittee)	Same
5. Permit Expiration Date	January, 2002
6. Company Representative, Title	Michael W. Glasson, Senior Geologist
7. Phone Number	(435) 637-5385
8. Fax Number	(435) 637-8860
9. Mailing Address	PO Box 902 Price, Utah 84501
10.Resident Agent, Title	Michael W. Glasson, Senior Geologist
Mailing Address	PO Box 902 Price, Utah 84501

IDENTIFICATION OF OTHER PERMITS

Identify other permits which are required in conjunction with mining and reclamation activities.

Permit Type	ID Number	Description	Expires on
1. MSHA Mine ID(S)	42-02028	Aberdeen Mine	NA
	42-01474	Pinnacle Mine	NA
2. MSHA Impoundment(s)	None		
3. NPDES/UPDES Permit(s) (water)	UTG-040008	Discharge to Deadman Canyon Wash 001-004	April 30, 2003
4. PSD (Air) Permit(s)	DAQE-998-96	Air Quality Approval Order	NA

5.			
6.			

CERTIFIED REPORTS

List the certified inspection reports as required by the rules and under the approved plan which must be periodically submitted to the Division. Specify whether the information is included as APPENDIX A to this Annual Report or currently ON FILE with the Division.

Certified Reports:	Reports Required?		INCLUDED or ON FILE w/DOGM?			Comments
	YES	NO	YES	NO	ON FILE	
1. Excess Spoil Piles		XX		XX		No Piles
2. Refuse Piles		XX		XX		No Piles
3. Impoundments		XX		XX		No Impoundments
4.						
5.						

REPORTING OF OTHER TECHNICAL DATA

List other technical data and information as required under the approved plan which must be periodically submitted to the Division. Specify whether the information is included as APPENDIX B to this Annual Report or currently ON FILE with the Division.

Technical Data:	Reports Required?		INCLUDED or ON FILE w/DOGM?			Comments
	YES	NO	YES	NO	ON FILE	
1. Climatological Data		XX		XX		
2. Subsidence Monitoring Data	XX		XX			
3. Vegetation Monitoring Data		XX		XX		
4. Raptor Data	XX		XX			
5. Soils Monitoring Data		XX		XX		
6. Water Monitoring Data						
First Quarter Report	XX		XX			
Second Quarter Report	XX		XX			
Third Quarter Report	XX		XX			
Fourth Quarter Report	XX		XX			
7. Geological/Geophysical Data		XX		XX		
8. Engineering Data		XX		XX		
9. Other Data						

LEGAL, FINANCIAL, COMPLIANCE AND RELATED INFORMATION

Changes in administration or corporate structure can often bring about necessary changes to information found in the mining and reclamation plan. The Division is requesting that each permittee review and update the legal, financial, compliance and related information in the plan as part of the Annual Report. Provide the Department of Commerce, Annual Report of Officers, or other equivalent information as necessary to ensure that the information provided in the plan is current. Provide any other changes as necessary regarding land ownership, lease acquisitions, legal results from appeals of violations, or other changes as necessary to update information required in the mining and reclamation plan. Include any certified financial statements, audits or worksheets which may be required to meet bonding requirements. Specify whether the information is currently ON FILE with the Division or included as APPENDIX C to this Annual Report.

Legal/Financial Data:	Report Required?		INCLUDED or ON FILE w/DOGM?			Comments
	YES	NO	YES	NO	ON FILE	
1. Department of Commerce, Annual Report of Officers						
2. Other						

MINE MAPS

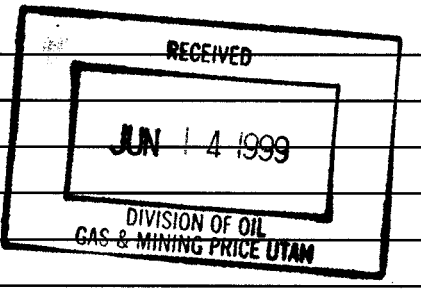
Copies of mine maps, current and up-to-date through at least December 31, 1998, are to be provided to the Division as APPENDIX D to this Annual Report in accordance with the requirements of R645-301-525.270. These map copies shall be made in accordance with 30 CFR 75.1200, as required by MSHA. Upon request, mine maps shall be kept confidential by the Division.

Map Number(s)	Map Title / Description	Confidential?
Plate 29	Aberdeen Mine	Yes

OTHER INFORMATION

Please provide any comments or further information to be included as part of the Annual Report. Any other attachments are to be provided as APPENDIX E to this Annual Report.

Additional attachments to this report? X☐ No ☐ Yes



APPENDIX A

Certified Reports

Excess Spoil Piles
Refuse Piles
Impoundments

as required under R645-301-514

CONTENTS

Annual Pond Inspections

ANDALEX RESOURCES, INC.

1998 ANNUAL POND INSPECTION REPORT

POND: SED. BASIN "B" LOCATION: CENTENNIAL

IMPOUNDMENTS

(1) Stability	Slopes Stable.
(2) Structural Weakness/Erosion	None Noted.
(3) Potential Safety Hazards	None Noted.
(4) Depth of Impounded Water	N/A - Dry. (Snow)
(5) Existing Storage Capacity	0.546 Ac. Ft.
(6) Monitoring Procedures	Sediment Level. Cleanout @ 50% Accum. (Between 1 & 2)

SEDIMENT PONDS ONLY

(7) Sediment Accumulation (Elev.)	7077.60- #2
(8) Sediment Cleanout Level (Elev.)	7081.0 - #2
(9) Principle Spillway (Elev.)	7077.0 - #1
(10) Emergency Spillway (Elev.)	7078.0 - #1
(11) Existing Sediment Capacity (To Cleanout)	0.270 Ac. Ft.

GENERAL

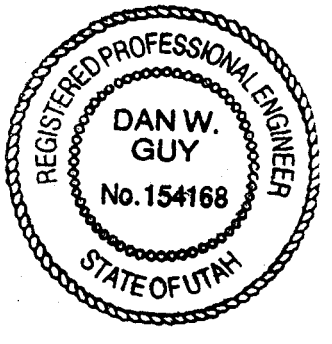
(12) Comments/Recommendations	Cell B4 - Cleaned 1997 Cell B3 - Cleaned 1997 Cell B2 - Cleaned 1997 Cell B1 - 0% Sed.

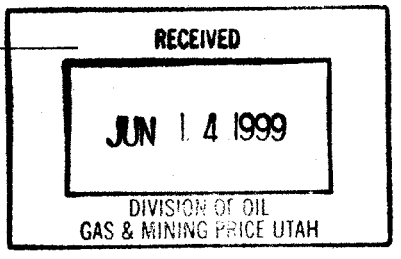
STATEMENT

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized in the State of Utah to inspect and certify the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meets or exceeds the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

Dan W. Guy
(Signature)

11-09-98
(Date)





ANDALEX RESOURCES, INC.

1998 ANNUAL POND INSPECTION REPORT

POND: SED. POND "C" LOCATION: CENTENNIAL

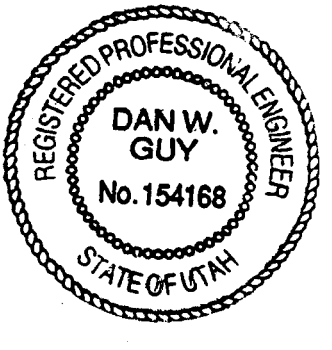
IMPOUNDMENTS	
(1) Stability	Slopes Stable.
(2) Structural Weakness/Erosion	None Noted.
(3) Potential Safety Hazards	None Noted.
(4) Depth of Impounded Water	N/A - Dry.
(5) Existing Storage Capacity	1.77 Ac. Ft.
(6) Monitoring Procedures	U.P.D.E.S. Quarterly Inspection.
SEDIMENT PONDS ONLY	
(7) Sediment Accumulation (Elev.)	7045.2
(8) Sediment Cleanout Level (Elev.)	7046.2
(9) Principle Spillway (Elev.)	7051.9
(10) Emergency Spillway (Elev.)	7053.7
(11) Existing Sediment Capacity (To Cleanout)	0.078 Ac. Ft.
GENERAL	
(12) Comments/Recommendations	Interior Partially Vegetated. No Discharge. Inlets O.K.

STATEMENT

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized in the State of Utah to inspect and certify the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meets or exceeds the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

Dan W. Guy
(Signature)

11-09-98
(Date)



ANDALEX RESOURCES, INC.

1998 ANNUAL POND INSPECTION REPORT

POND: SED. POND "E" LOCATION: CENTENNIAL

IMPOUNDMENTS

(1) Stability	Slopes Stable.
(2) Structural Weakness/Erosion	None Noted.
(3) Potential Safety Hazards	None Noted.
(4) Depth of Impounded Water	6" Water.
(5) Existing Storage Capacity	1.895 Ac. Ft.
(6) Monitoring Procedures	U.P.D.E.S. Quarterly Inspection.

SEDIMENT PONDS ONLY

(7) Sediment Accumulation (Elev.)	6946.0
(8) Sediment Cleanout Level (Elev.)	6946.5
(9) Principle Spillway (Elev.)	6957.6
(10) Emergency Spillway (Elev.)	6958.6
(11) Existing Sediment Capacity (To Cleanout)	0.045 Ac. Ft.

GENERAL

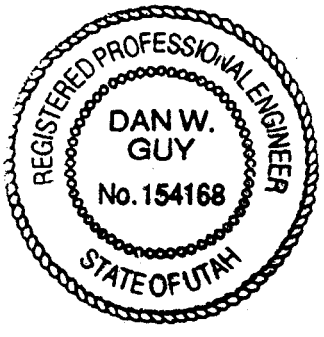
(12) Comments/Recommendations	Vegetation on Slopes. No Discharge. Inlets O.K. Outlets O.K.

STATEMENT

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized in the State of Utah to inspect and certify the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meets or exceeds the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

Dan W. Guy
(Signature)

11-09-98
(Date)



APPENDIX B

Reporting of Technical Data

including monitoring data, reports, maps, and other information
as required under the approved plan
or as required by the Division

in accordance with the requirements of R645-301-130 and R645-301-140.

CONTENTS

Water Monitoring
Subsidence Monitoring

12-1 (???)

ANDALEX
RESOURCES, INC.

P.O. BOX 902
PRICE, UTAH 84501
PHONE (435) 637-5385
FAX (435) 637-8860

MEMORANDUM

TO: DOGM, General Inspection File

FROM: Michael W. Glasson

DATE: June 1, 1998

SUBJECT: 1998 1st Quarter Water Monitoring, Minesite

Water Monitoring- 1st Quarter, 1998

sur	7-1	No Flow	03/31/98
sur	8-1	No Flow	03/31/98
	17-1	No Flow	03/31/98
	17-2	No Flow	03/31/98
SPG	S18-1	No Flow	03/31/98
sur	18-2	No Flow	03/31/98
sur	18-3	No Flow	03/31/98
sur	18-4	No Flow	03/31/98
SPG	S25-1	No Access	03/31/98
sur	25-2	No Flow	03/31/98
	Well #1	Sampled	03/31/98

cc: Jim Smith, DOGM
File

ANDALEX
RESOURCES, INC.

P.O. BOX 902
PRICE, UTAH 84501
PHONE (435) 637-5385
FAX (435) 637-8860

MEMORANDUM

TO: DOGM, General Inspection File

FROM: Michael W. Glasson

DATE: September 30, 1998

SUBJECT: 1998 2nd Quarter Water Monitoring, Minesite

Water Monitoring- 2nd Quarter, 1998

7-1	No Flow	06/17/98
8-1	No Flow	06/17/98
17-1	No Flow	06/17/98
17-2	No Flow	06/17/98
S18-1	No Flow	06/17/98
18-2	No Flow	06/17/98
18-3	No Flow	06/17/98
18-4	No Flow	06/17/98
S25-1	Negligible Flow	06/17/98
25-2	No Flow	06/17/98
Well #1	Sampled	06/17/98

cc: Jim Smith, DOGM
File

ANDALEX
RESOURCES, INC.

P.O. BOX 902
PRICE, UTAH 84501
PHONE (435) 637-5385
FAX (435) 637-8860

MEMORANDUM

TO: DOGM, General Inspection File

FROM: Michael W. Glasson

DATE: December 10, 1998

SUBJECT: 1998 3rd Quarter Water Monitoring, Minesite

Water Monitoring- 3rd Quarter, 1998

7-1	No Flow	09/19/98
8-1	No Flow	09/19/98
17-1	No Flow	09/19/98
17-2	No Flow	09/19/98
S18-1	No Flow	09/19/98
18-2	No Flow	09/19/98
18-3	No Flow	09/19/98
18-4	No Flow	09/19/98
S25-1	Negligible Flow	09/19/98
25-2	No Flow	09/19/98
Well #1	Sampled	09/24/98

cc: Jim Smith, DOGM
File

ANDALEX
RESOURCES, INC.

P.O. BOX 902
PRICE, UTAH 84501
PHONE (435) 637-5385
FAX (435) 637-8860

MEMORANDUM

TO: DOGM, General Inspection File

FROM: Michael W. Glasson

DATE: February 26, 1999

SUBJECT: 1998 4th Quarter Water Monitoring, Minesite

Water Monitoring- 4th Quarter, 1998

7-1	No Flow	12/29/98
8-1	No Flow	12/29/98
17-1	No Flow	12/29/98
17-2	No Flow	12/29/98
S18-1	No Flow	12/29/98
18-2	No Flow	12/29/98
18-3	No Flow	12/29/98
18-4	No Flow	12/29/98
S25-1	No Access	12/29/98
25-2	No Access	12/29/98
Well #1	Sampled	12/29/98

cc: Jim Smith, DOGM
File

Bruce T. S. Ware
REGISTERED LAND SURVEYOR
RT. 1, BOX 146 H-2 HELPER, UTAH 84526
Phone 637-2620 December 10, 1998

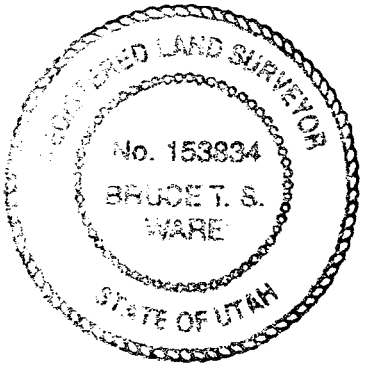
Andalex Resources Inc.
Attn: Mike Glasson
P. O. Box 902
Price, UT 84501

Dear Mr. Glasson,

As you requested I surveyed your Companie's Subsidence Monitoring Points on November 21, 1998. I have calculated the survey and find that there has been no movement horizontally or vertically since they were established. A visual inspection was made when walking between Subsidence points and no subsidence was seen. Seven new points were established for the longwall subsidence for next year.

Sincerely

Bruce T S Ware



Bruce T. S. Ware
REGISTERED LAND SURVEYOR
RT. 1, BOX 146 H-2 HELPER, UTAH 84526
Phone 637-2620 December 10, 1998

Andalex Resources Inc.
Attn: Mike Glasson
P. O. Box 902
Price, UT 84501

Dear Mr. Glasson,

The following is a list of the Subsidence Points I surveyed,

Station	Northing	Easting	Elevation
Rebar on Ridge	505,141.92	2,217,261.07	8,241.62 Control
Yellow Rebar	507,073.57	2,223,128.18	8,534.90 Control
S-10	507,824.28	2,217,196.61	8,594.59 Control
1A	504,057.30	2,216,581.05	8,147.11
1	502,940.35	2,216,278.99	8,178.26
4	503,237.80	2,221,322.47	8,285.25
11	498,937.95	2,218,688.70	7,671.20
9	506,252.70	2,221,663.42	8,544.09
5	504,194.50	2,224,747.31	8,001.91
7	502,013.02	2,225,964.69	8,102.92
13	500,747.10	2,228,007.65	7,854.71
S20	510,331.03	2,217,642.94	8,573.96
S24	513,030.96	2,217,476.03	8,425.50
S31	506,353.14	2,217,377.10	8,386.60
S30	506,015.22	2,215,357.97	8,117.72
S21	510,581.51	2,214,957.03	8,489.59
S23	514,248.42	2,215,475.07	8,363.47
S25	515,214.09	2,209,764.93	8,424.72
S26	514,518.44	2,212,435.50	8,365.79
S27	512,807.91	2,213,702.09	8,366.59
S28	511,498.36	2,209,969.87	8,669.25
S16(Graves)	508,650.51	2,210,725.76	8,809.50
S17(L3)	508,190.52	2,213,802.49	8,624.51

Sincerely

Bruce T S Ware

APPENDIX C

Legal, Financial, Compliance and Related Information

Annual Report of Officers
as submitted to the Utah Department of Commerce

and other changes in ownership and control information
as required under R645-301-110.

CONTENTS

Annual Report of Officers

STATE OF UTAH
DEPARTMENT OF COMMERCE
DIVISION OF CORPORATIONS AND COMMERCIAL CODE
PHONE: (801) 530-4849

PROFIT CORPORATION ANNUAL REPORT

The following information is on file in this office. All profit corporations must file their annual reports and corrections within the month of their anniversary date. Failure to do so will result in Delinquency, Revocation or Involuntary Dissolution of the corporate charter.

THIS BOX MUST BE COMPLETED

CORPORATE NAME, REGISTERED AGENT, REGISTERED OFFICE, CITY, STATE & ZIP — MAKE ALL CORRECTIONS IN THIS COLUMN

CORPORATION # 080962

F 03/01/79

1. ANDALEX RESOURCES, INC.
2. C T CORPORATION SYSTEM
3. 50 W BROADWAY 8TH FLOOR
4. SALT LAKE CITY UT 84101-2006

(Print New Agent Name) — NEW AGENT MUST SIGN ABOVE

NEW REGISTERED STREET ADDRESS REQUIRED

(New City) — REGISTERED AGENT MUST BE IN UTAH — UTAH — (Zip)

WHEN CHANGING THE REGISTERED AGENT THE NEW AGENT MUST SIGN.

5. INCORPORATED IN THE STATE AND UNDER THE LAWS OF: DELAWARE

6. ADDRESS OF THE PRINCIPAL OFFICE IN THE HOME STATE.
45 W 10000 S STE 401
SANDY UT 84070
(Street Address) (State or Country) (City) (Zip)

7. BUSINESS PURPOSE: BITUMINUS COAL(UNDERGROUND)

DOMESTIC, PROFIT CORPORATIONS ARE REQUIRED TO LIST A CORPORATE OFFICER.

OFFICERS

			Corrections
8.	PRESIDENT	DOUGLAS H SMITH	8.
	ADDRESS	45 W 10000 S STE 401	
	CITY, STATE & ZIP	SANDY UT 84070	
9.	VICE PRESIDENT	SAMUE'. C .UIGLEY	9. Samuel C. Quigley
	ADDRESS	45 W ·· ·JOO S STE 401	45 W. 10000 So. Suite 401
	CITY, STATE & ZIP	SAND' U 84070	Sandy, Ut. 84070
10.	SECRETARY & Vice President		10. John Bradshaw
	ADDRESS	45 W 10000 S STE 401	45 W. 10000 So Suite 401
	CITY, STATE & ZIP	SANDY UT 84070	Sandy, Ut. 84070
11.	TREASURER		11.
	ADDRESS		
	CITY, STATE & ZIP		

[illegible]

DIRECTORS

			Corrections
12.	DIRECTOR	DOUGLAS H SMITH	12.
	ADDRESS	45 W 10000 S STE 401	
	CITY, STATE & ZIP	SANDY UT 84070	
13.	DIRECTOR	PETER B GREEN	13.
	ADDRESS	45 W 10000 S STE 401	
	CITY, STATE & ZIP	SANDY UT 84070	
14.	DIRECTOR	RONALD C BEEDIE	14.
	ADDRESS	45 W 10000 S STE 401	
	CITY, STATE & ZIP	SANDY UT 84070	

Under penalties of perjury and as an authorized officer, I declare that this annual report and, if applicable, the statement change of registered office and/or agent, has been examined by me and is, to the best of my knowledge and belief, true, correct, and complete.

15. BY [signature]

16. President (Title or Position)

17. March 8 1999 (Date)

IF THERE ARE NO CHANGES FROM THE PREVIOUS YEAR, AND YOU HAVE ALL CORPORATE REQUIREMENTS FILLED PERTAINING TO OFFICER AND DIRECTOR INFORMATION YOU MAY DETACH THE COUPON BELOW, AND RETURN IT IN THE ENCLOSED ENVELOPE WITH YOUR PAYMENT. YOU MAY KEEP THE ABOVE REPORT FOR YOUR RECORDS.

APPENDIX D

Mine Maps

as required under R645-301-525.270.

CONTENTS

Aberdeen Mine Map

APPENDIX E

Other Information

in accordance with the requirements of R645-301 and R645-302.

CONTENTS

Raptor Survey

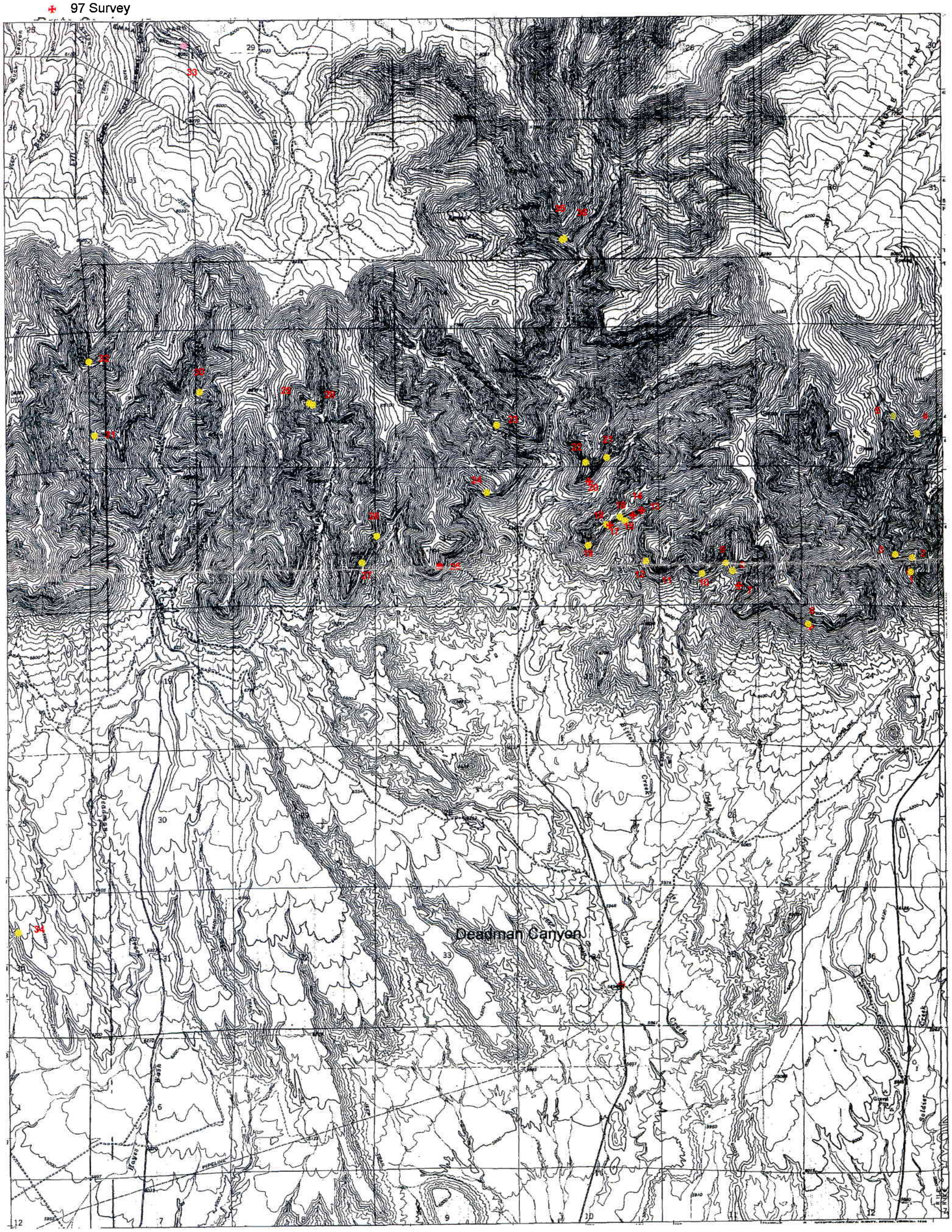
Deadman Canyon

Nest N	Map N	Quad Name	Last Yea Surveyed	First Year Surveyed	Species	Status	Elevation	Type	Yo	Ag	Eg	UTM Coordinates Northing	Easting
1.000		Deadman Cy	1998	1997	Golden Eagl	Old/Dilapid	7100	Cliff	0		0		
2.000		Deadman Cy	1998	1998	Golden Eagl	Tended	7100	Cliff	0		0		
3.000		Deadman Cy	1998	1998	Golden Eagl	Inactive	7100	Cliff	0		0		
4.000		Deadman Cy	1998	1998	Golden Eagl	Inactive	7500	Cliff	0		0		
5.000		Deadman Cy	1998	1998	Golden Eagl	Tended	7500	Cliff	0		0		
6.000		Deadman Cy	1998	1997	Golden Eagl	Active	7300	Cliff	1		0		
7.000		Deadman Cy	1997	1997	Golden Eagl	Tend		Cliff	0		0		
8.000		Deadman Cy	1998	1998	Golden Eagl	Tend	7200	Cliff	0		0		
9.000		Deadman Cy	1998	1998	Golden Eagl	Inactive	7200	Cliff	0		0		
10.000		Deadman Cy	1998	1998	Golden Eagl	Inactive	7200	Cliff	0		0		
11.000		Deadman Cy	1998	1998	Peregrine Fa	Active	7350	Cliff	0		0		
12.000		Deadman Cy	1998	1998	Golden Eagl	Inactive	7200	Cliff	0		0		
13.000		Deadman Cy	1997	1997	Golden Eagl	Old/Dilapid	7100	Cliff	0		0		
14.000		Deadman Cy	1997	1997	Golden Eagl	Old/Dilapid	7100	Cliff	0		0		
15.000		Deadman Cy	1998	1998	Golden Eagl	Inactive	7300	Cliff	0		0		
16.000		Deadman Cy	1998	1998	Owl	Tended	7300	Cliff	0		0		
17.000		Deadman Cy	1998	1998	Golden Eagl	Active	7300	Cliff	1		0		
18.000		Deadman Cy	1998	1998	Golden Eagl	Inactive	7300	Cliff	0		0		
19.000		Deadman Cy	1998	1998	Golden Eagl	Tended	7200	Cliff	0		0		
20.000		Deadman Cy	1997	1997	Golden Eagl	Tended	7000	Cliff	0	0			
21.000		Deadman Cy	1998	1998	Golden Eagl	Tended	7000	Cliff	0		0		
22.000		Deadman Cy	1998	1998	Golden Eagl	Old/Dilapid	7100	Cliff	0		0		
23.000		Deadman Cy	1998	1998	Golden Eagl	Inactive	6900	Cliff	0		0		
24.000		Deadman Cy	1998	1998	Golden Eagl	Inactive	7200	Cliff	0		0		
25.000		Deadman Cy	1998	1998	Redtail Hawk	Tended	7400	Cliff	0		0		
26.000		Deadman Cy	1998	1998	Golden Eagl	Tended	7200	Cliff	0		0		
27.000		Deadman Cy	1998	1998	Golden Eagl	Active	7300	Cliff	1		0		
28.000		Deadman Cy	1998	1998	Golden Eagl	Old/Dilapid	7500	Cliff	0		0		
29.000		Deadman Cy	1998	1998	Golden Eagl	Inactive	7500	Cliff	0		0		
30.000		Deadman Cy	1998	1998	Golden Eagl	Inactive	7600	Cliff	0		0		
31.000		Deadman Cy	1998	1998	Golden Eagl	Active	7800	Cliff	1		0		
32.000		Deadman Cy	1998	1998	Unidentified	Active	8000	Cliff	0		0		
33.000		Deadman Cy	1998	1998	Coopers Ha	Active	8000	Cliff	0		0		
34.000		Deadman Cy	1998	1998	Golden Eagl	Inactive	6400	Cliff	0		0		
35.000		Deadman Cy	1998	1998	Golden Eagl	Tended	7100	Cliff	0		0		

36.000	Deadman Cy	1998	1998	Golden Eagl	Tended	7100	Cliff	0	0

Deadman Canyon

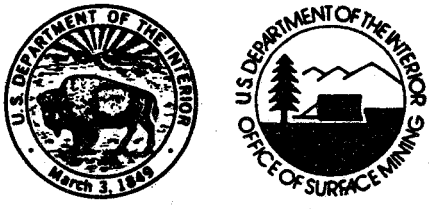
Raptor Species
- Falcon
- Ferruginous Hawk
- Golden Eagle
- Peregrine Falcon
- Prairie Falcon
- Raven
- Redtail Hawk
- Unidentified
- Unidentified Buteo
- 97 Survey



Centennial Project Mines, Tower Resources, Inc.
Carbon County, Utah February 1986
U-52341, U-010581, SL-063058, SL-027304

MINING PLAN DECISION DOCUMENT

Centennial Project Mines
Tower Resources, Inc.
Carbon County, Utah



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

Federal Coal Leases U-52341, U-010581,
SL-063058, SL-027304

February 1986

724 orig Mine file
cc letter only
L. Braxton

United States Department of the Interior

OFFICE OF SURFACE MINING
Reclamation and Enforcement
BROOKS TOWERS
1020 15TH STREET
DENVER, COLORADO 80202

20 MAY 1986

RECEIVED
MAY 27 1986
DIVISION OF
OIL, GAS & MINING

CERTIFIED MAIL: RETURN RECEIPT REQUESTED

Dr. Dan Stockburger, General Manager
Tower Resources, Inc.
P.O. Box 1027
Price, Utah 84501

Dear Mr. Stockburger:

Enclosed is the Centennial Project mines permit with conditions. This permit became effective May 20, 1986. The Office of Surface Mining Reclamation and Enforcement (OSMRE) has accepted the bond in the amount of $381,839.00 payable to both the State of Utah and the United States of America.

Please read the permit to be sure you understand the requirements and conditions. Pursuant to 30 CFR 775.11, Tower Resources, Inc. will have 30 days from the date of notice of the permit decision to appeal my decision on the application.

Enclosed is a copy of the newspaper notice we are sending to the Price Sun-Advocate, Carbon County, Utah, to be published as soon as possible. When published, this notice will constitute official notification of our action. Any person with an interest which is or may be adversely affected may request a hearing on the reasons for the final decision within 30 days from the date that notice is published.

The Assistant Secretary for Land and Minerals Management approved the mining plan on May 13, 1986. The enclosed permit has been determined to be consistent with this plan.

If you have any questions, please feel free to call either Meg Estep or Rick Holbrook at (303) 844-2451.

Sincerely,

Allen D. Klein
Administrator
Western Technical Center

Enclosure

cc: Mr. Jackson Moffitt
Bureau of Land Management, (MMS)

Mr. Gene Nodine
Bureau of Land Management

Dr. Dianne Nielson
Utah Division of Oil, Gas and Mining

Mr. Robert Hagen
Albuquerque Field Office
Office of Surface Mining Reclamation and Enforcement

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TOWER RESOURCES, INC.
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United States Department of the Interior

OFFICE OF SURFACE MINING
Reclamation and Enforcement
WASHINGTON, D.C. 20240

MAY 12 1986

MEMORANDUM

TO: Assistant Secretary for Land and Minerals Management

FROM: Director, Office of Surface Mining Reclamation and Enforcement Richard D. Miller acting

SUBJECT: Recommendation for Approval of the Centennial Project Mines Mining Plan, as Modified, Tower Resources, Inc., Centennial Mines, Carbon County, Utah, Federal Lease Numbers: U-52341, U-010581, SL-063058, SL-027304

I recommend your approval of the Centennial Project mines mining plan, as modified, pursuant to the Mineral Leasing Act of 1920 (MLA). The Office of Surface Mining Reclamation and Enforcement (OSMRE) has reviewed the permit application package (PAP), and the Administrator of the Western Technical Center has informed me that he is prepared to approve a permit revision for the Centennial Project mines pursuant to your approval of the mining plan, as modified. My recommendation to approve Tower Resources, Inc.'s mining plan, as modified, is based on: (1) the applicant's complete PAP, including the operation and reclamation plan required by the Surface Mining Control and Reclamation Act (SMCRA), (2) OSMRE's proposed permit condition, (3) public participation, (4) review of the operation and reclamation plan portions of the PAP by OSMRE, (5) review of the PAP by the Utah Division of Oil, Gas and Mining, as required by the approved Utah State Program, (6) compliance with the National Environmental Policy Act, (7) documentation assuring compliance with applicable requirements of Federal laws other than SMCRA, and other regulations and executive orders, and (8) comments and recommendations or concurrences of other Federal agencies, including the findings and recommendations of the Bureau of Land Management with respect to the resource recovery and protection plan and other requirements of the lease and the MLA.

The Centennial Project mines mining plan was approved under the regulatory program on November 12, 1981. Approval of this mining plan, as modified, will supersede the previous mining plan approval.

The Secretary may approve a mining plan, as modified, for Federal lands under 30 U.S.C. 207(c) and 1273(c). I find that the proposed operations will be in compliance with all applicable laws and regulations, and I recommend approval of the Centennial Project mines mining plan, as modified, and updated through April 25, 1985.

Approval:

I approve this mining plan, as modified:

Assistant Secretary for Land and Minerals Management

MAY 13 1986
Date

bcc: ASLMM(2)(White carbon letterhead), OSMRE Subject(Yellow [surname]),
OSMRE Reading(Pink), DPEA Reading (Blue), RIM(Green), Director(White tissue)
Dep. Director AD/TSR Chief, DPEA, Chief BWA,HQ Coordinator,(extra)

United States Department of the Interior

OFFICE OF SURFACE MINING
Reclamation and Enforcement
WASHINGTON, D.C. 20240

MEMORANDUM

TO: Assistant Secretary for Land and Minerals Management

FROM: Director, Office of Surface Mining Reclamation and Enforcement

SUBJECT: Recommendation for Approval of the Centennial Project Mines Mining Plan, as Modified, Tower Resources, Inc., Centennial Mines, Carbon County, Utah, Federal Lease Numbers: U-52341, U-010581, SL-063058, SL-027304

I recommend your approval of the Centennial Project mines mining plan, as modified, pursuant to the Mineral Leasing Act of 1920 (MLA). The Office of Surface Mining Reclamation and Enforcement (OSMRE) has reviewed the permit application package (PAP), and the Administrator of the Western Technical Center has informed me that he is prepared to approve a permit revision for the Centennial Project mines pursuant to your approval of the mining plan, as modified. My recommendation to approve Tower Resources, Inc.'s mining plan, as modified, is based on: (1) the applicant's complete PAP, including the operation and reclamation plan required by the Surface Mining Control and Reclamation Act (SMCRA), (2) OSMRE's proposed permit condition, (3) public participation, (4) review of the operation and reclamation plan portions of the PAP by OSMRE, (5) review of the PAP by the Utah Division of Oil, Gas and Mining, as required by the approved Utah State Program, (6) compliance with the National Environmental Policy Act, (7) documentation assuring compliance with applicable requirements of Federal laws other than SMCRA, and other regulations and executive orders, and (8) comments and recommendations or concurrences of other Federal agencies, including the findings and recommendations of the Bureau of Land Management with respect to the resource recovery and protection plan and other requirements of the lease and the MLA.

The Centennial Project mines mining plan was approved under the regulatory program on November 12, 1981. Approval of this mining plan, as modified, will supersede the previous mining plan approval.

The Secretary may approve a mining plan, as modified, for Federal lands under 30 U.S.C. 207(c) and 1273(c). I find that the proposed operations will be in compliance with all applicable laws and regulations, and I recommend approval of the Centennial Project mines mining plan, as modified, and updated through April 25, 1985.

Approval:

I approve this mining plan, as modified:

_____ _____

Assistant Secretary for Land and Minerals Management — Date

United States Department of the Interior

OFFICE OF SURFACE MINING
Reclamation and Enforcement
BROOKS TOWERS
1020 15TH STREET
DENVER, COLORADO 80202

24 FEB 1986

MEMORANDUM

TO: Director, Office of Surface Mining Reclamation and Enforcement

FROM: Allen D. Klein, Administrator, Western Technical Center

SUBJECT: Proposed Permit Approval and Recommendation for Mining Plan Approval for Tower Resources, Inc.'s Centennial Project Mines, Carbon County, Utah, Federal Leases: U-52341, U-010581, SL-063058, SL-027304

I. Recommendation

I am prepared to approve with a condition the permit revision and recommend approval with conditions of the mining plan, as modified, for Tower Resources, Inc.'s Centennial Project mines. My proposed decision and my recommendation are based on the complete addendum to the permit application package (PAP), updated to April 25, 1985, environmental assessments of the PAP, a technical analysis, and the administrative record.

I am prepared to issue a revised permit for the extension of the existing underground mine which was permitted under the Utah permanent program. The permit revision has been processed under the full standards for new permits under the Utah permanent program. The applicant has proposed to extend the underground mining operation approved under the original mining plan with no extension of any surface facilities or disturbances during the five-year permit term. The Federal permit included with this memorandum will be in conformance with the Federal lands program (30 CFR Chapter VII, Subchapter D), the Utah State program, and the Surface Mining Control and Reclamation Act of 1977 (SMCRA).

The Utah Division of Oil, Gas and Mining (DOGM) and the Office of Surface Mining Reclamation and Enforcement (OSMRE), identified elements of the applicant's proposal which require conditions to comply with State and Federal law. The conditions are incorporated into the proposed State permit ACT/007/019A, as revised, and the proposed Federal permit UT-0022. Utah DOGM will issue the revised State permit concurrently with the revised Federal permit. I concur with Utah DOGM that a bond in the amount of $381,839.00 is adequate.

The Technical Environmental Analysis of the PAP, originally approved under the Utah State program, addressed a 2,240-acre area which included portions of Federal leases Nos. U-010581, SL-027304, and SL-063058. The State permit was issued for the 2,240-acre area. However, the Federal permit issued to Tower Resources, Inc. on November 12, 1981, was for a 440-acre area encompassing portions of Nos. U-010581 and SL-027304, the area proposed to be mined during the initial five-year term of the permit. The proposed revised permit will extend the Federal permit area to be coincident with the State permit area. The mine permit boundary will be modified to encompass the emergency Federal lease area (U-52341), and portions of Federal Leases Nos. U-010581, SL-063058, and SL-027304, and the 200-acre Zion's Fee Lease, for a total Federal and State permit area of 2,360 acres.

The mining plan, as modified, recommended for approval is for the extension of the existing underground mining plan approved under the Utah permanent program. Approval of the mining plan, as modified, will authorize the mining of an additional 700,000 tons of Federal coal in the Federal lease U-523410 which covers 120 acres, as well as the mining of 20 million tons of coal in Federal leases Nos. U-010581, SL-027304, and SL-063058 as described in the original PAP. The total proposed mining plan area covers 2,160 acres as shown on the maps included with this memorandum.

Federal lease Nos. U-010581, SL-063058, and SL-027304 were modified in October 1981 to include an additional 435.96 acres. However, Tower Resources, Inc. has not submitted a permit application which addresses these areas, so they have not been included in the proposed mining plan approval area and permit area.

The PAP, including the operation and reclamation plan, was reviewed by the OSMRE for compliance with SMCRA, the Federal Lands Program, and all other requirements of applicable Federal laws. The resource recovery and protection plan was reviewed by the Bureau of Land Management for compliance with the Mineral Leasing Act of 1920, as amended, and 43 CFR Part 3480.

I recommend that you advise the Assistant Secretary for Land and Minerals Management, under 30 CFR Part 746, that the Tower Resources, Inc., Centennial Project mines mining plan, as modified, is ready for approval.

I have determined that this action will not have a significant impact on the quality of the human environment.

II. Background

The Centennial Project mines are located in Carbon County, Utah, approximately 10 miles north-northeast of Price. The Centennial Project consists of two existing mines, the Pinnacle and Apex, and a third mine proposed for the Aberdeen coal seam. The underground Pinnacle mine began operating on October 3, 1980, on the Zion's fee lease in the Gilson Coal seam. The underground Apex mine which works the second mineable coal seam in the permit area, the Lower Sunnyside, began operating in June 1982. A third mineable coal seam, the Aberdeen, is located within the permit area, but the proposed third underground mine has yet to be developed. Tower Resources, Inc.'s original mining plan included 2,240 acres of which 2,040 were leased Federal coal. The mining plan was approved on November 12, 1981. A Federal permit for a 440-acre area of Federal coal to be mined during the 5-year permit term was issued on November 19, 1981. Utah DOGM approved the mining and reclamation plan and issued the State permit under the Utah permanent program in January, 1982.

A 120-acre emergency lease was issued December 1, 1983. The Centennial Project proposed permit area, including the emergency lease, comprises approximately 2,360 acres of which 2,160 acres are leased Federal coal. Mineable reserves within the proposed mining plan area are estimated to be 21 million tons and the life-of-mine to be 30 years.

The mining operations will continue to utilize primarily room-and-pillar methods with secondary pillaring. Coal production is expected to increase to 1.2 million tons per year when the third underground mine is developed. The mining operation will not affect any environmentally-sensitive areas.

During review of the proposed mining plan modification the following issues were identified:

(1) In 1983, Tower Resources, Inc, encountered ground water in an area of burned coal during mining operations adjacent to the emergency lease. The burned area acts as a reservoir with a limited capacity that has been estimated to be approximately seven million gallons. Very little water had been encountered in the currently operating mine prior to this, so that mine water discharge was unnecessary. However, interception of the water in the burned area necessitated the discharge of this water to the outside. The company obtained an emergency NPDES permit for the discharge of this water from the Utah Division of Environmental Health (DEH). No discharges are currently occurring. Utah DOGM has added a condition to the permit that requires Tower Resources, Inc., within 30 days of permit approval, to submit a plan for approval to Utah DOGM and to the

to the Utah DEH for holding and treating all mine water discharges, and that they obtain an NPDES permit from the DEH, so that the applicant will meet the permanent program performance standards in the event that discharges from the mine are resumed.

(2) The U. S. Fish and Wildlife Service raised the concern that loss of surface water could negatively impact wildlife. (See letter dated June 17, 1985.) Utah DOGM has added a condition to the permit requiring the applicant to commit to replace or mitigate the effects of loss of surface waters due to mining activity in the emergency lease and to submit a plan for approval outlining how this will be done, within 30 days of permit approval.

(3) No structures, streams or springs are present on the emergency lease area. However, large extension fractures and caving along escarpments have resulted from subsidence at other mines in the area where secondary pillaring was conducted. Therefore, Utah DOGM has added the condition to the permit that, within 30 days of permit approval, the applicant shall submit an isopach map of the overburden above the Gilson coal seam for the mining area, and an outline of mitigating measures be taken to insure no subsidence occurs along escarpments.

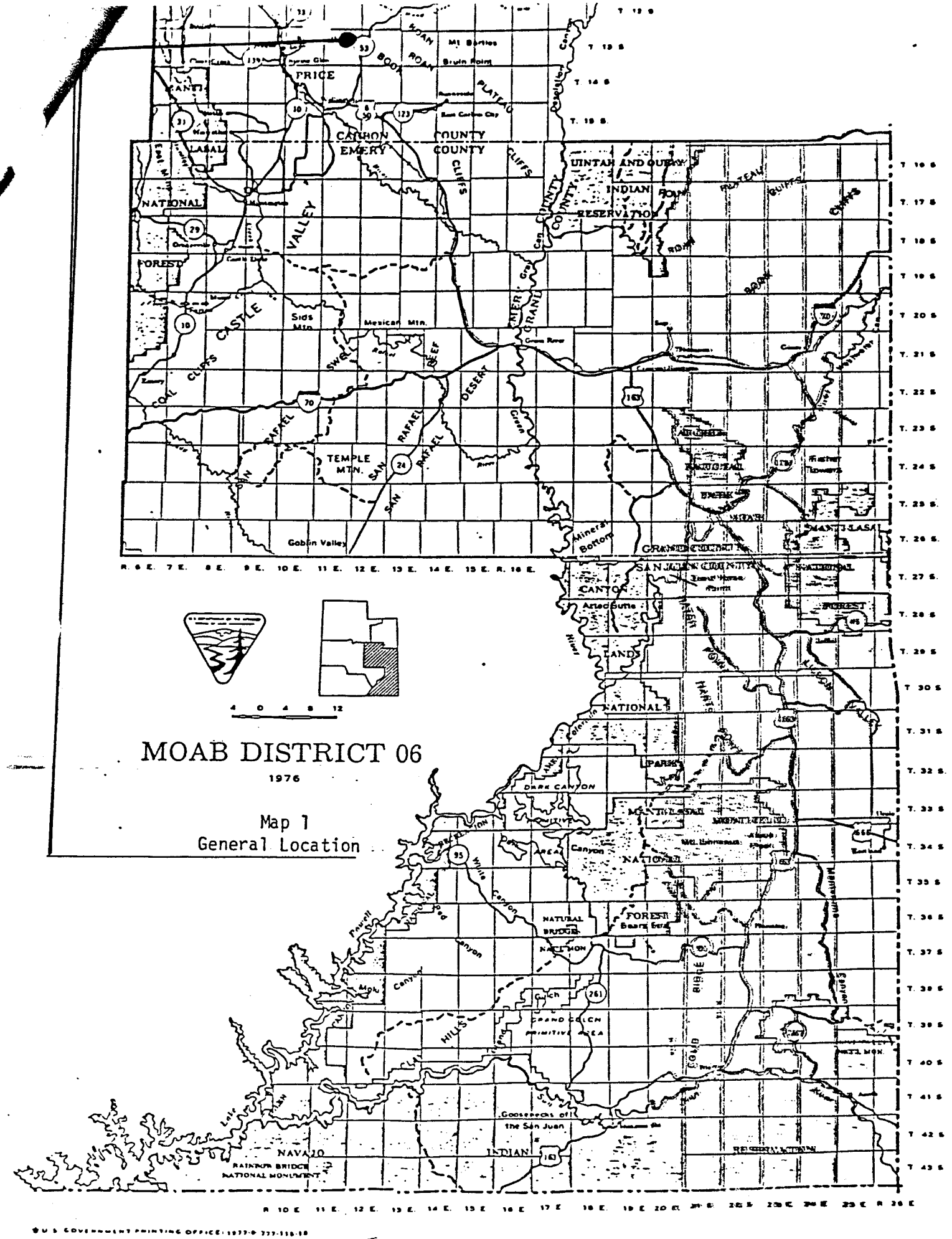
The public was notified of the availability of the mining and reclamation plan and a technical environmental analysis for the original 2,240-acre area by a notice published for 4 consecutive weeks in a local newspaper beginning on February 4, 1981. The public was notified of the availability of the PAP Addendum for review by publication of newspaper notices for 4 consecutive weeks ending June 26, 1985. No public comments on the PAP or the PAP Addendum were received.

The Centennial Project mines original PAP and the PAP Addendum for the emergency lease were reviewed by the Utah DOGM using the approved Utah State Program and the Federal Lands Program (30 CFR Chapter VII, Subchapter D). The Mineral Leasing Act portions of the PAP and PAP Addendum were also reviewed for the applicable portions of 43 CFR Part 3480. A technical analysis for the emergency lease was prepared by the Utah DOGM and was included with the documentation provided by the Utah DOGM to OSMRE. Environmental assessments of the proposed actions and alternatives were prepared by OSMRE for the original PAP and by BLM for the emergency lease in the PAP Addendum. These documents, other documents prepared by the Utah DOGM, the company's PAP and PAP Addendum, and other correspondence developed during the completeness and technical reviews are part of OSMRE's administrative record. The Utah DOGM and OSMRE jointly developed proposed conditions to the State permit to assure compliance with State and Federal regulations.

A chronology of events related to the processing of the PAP and PAP Addendum is included with this memorandum.

Written concurrence was provided by U.S.D.I. Geological Survey, Office of the District Mining Supervisor in a letter dated September 10, 1981; Bureau of Land Management, Branch of Solid Minerals in a letter dated June 4, 1985; U.S. Fish and Wildlife Service in letters dated October 1, 1981 and June 17, 1984; the State Historic Preservation Officer in letters dated June 4, 1981 and August 9, 1984; and the Bureau of Land Management, Moab District Office in letters dated September 21, 1981 and August 18, 1984.

The Federal permit for the Centennial Project mines, Permit Number UT-0022, will incorporate the conditions of the Utah DOGM State permit, as revised, as well as one special condition of approval. Special condition 1 covers unanticipated cultural resource discoveries in unsurveyed areas of the mine where subsidence may affect those resources.



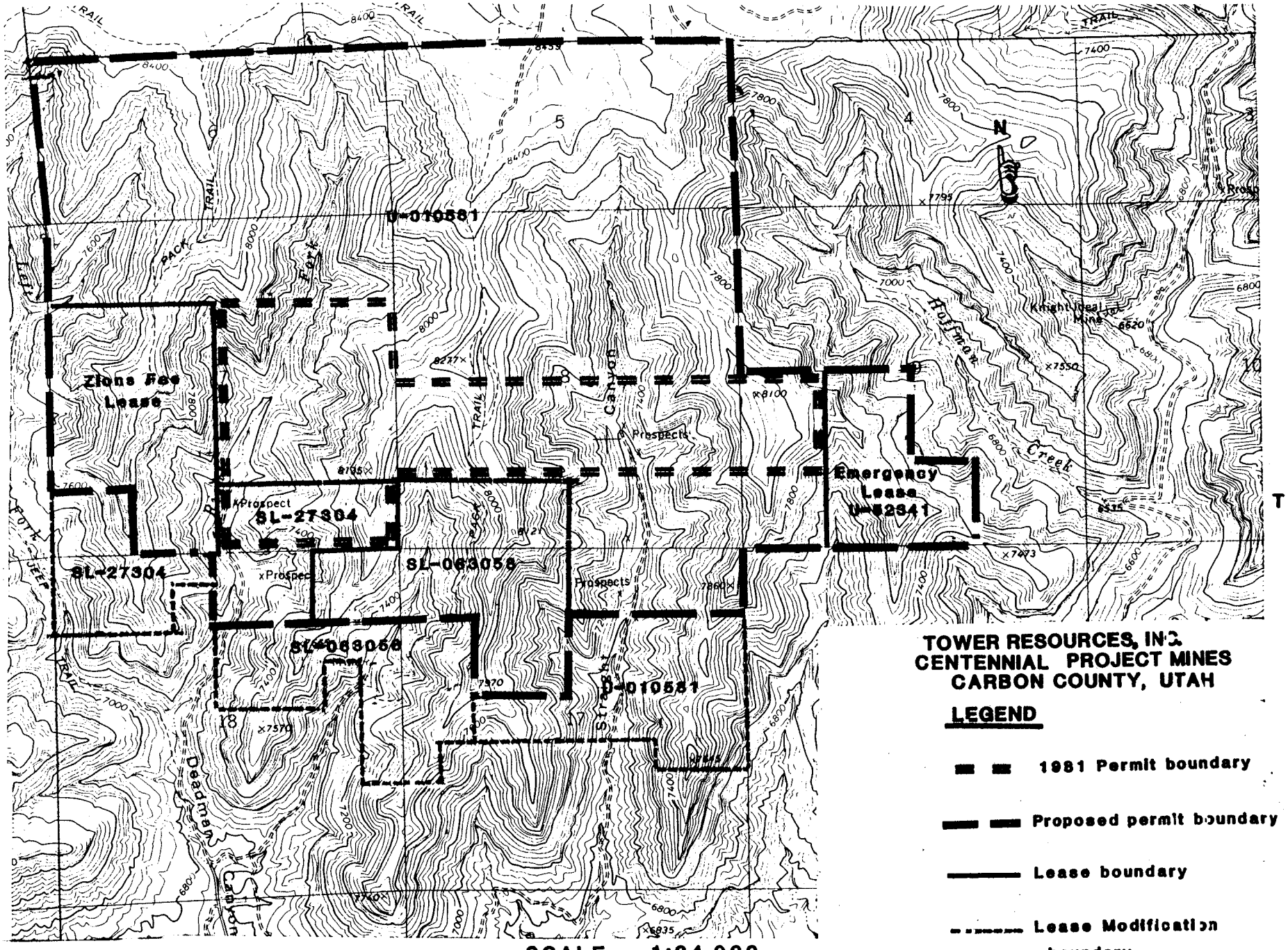
MOAB DISTRICT 06

1976

Map 1
General Location

U.S. GOVERNMENT PRINTING OFFICE: 1977-0 777-115-10

R1



SCALE 1:24,000

TOWER RESOURCES, INC.
CENTENNIAL PROJECT MINES
CARBON COUNTY, UTAH

LEGEND

- 1981 Permit boundary
- Proposed permit boundary
- Lease boundary
- Lease Modification boundary

United States Department of the Interior
FISH AND WILDLIFE SERVICE
AREA OFFICE COLORADO—UTAH
1311 FEDERAL BUILDING
125 SOUTH STATE STREET
SALT LAKE CITY, UTAH 84138

IN REPLY REFER TO:

1 October 1981

MEMORANDUM

TO: Regional Director
Office of Surface Mining
Denver, Colorado

FROM: Acting Area Manager, Area 5
Fish and Wildlife Service
Salt Lake City, Utah

SUBJECT: Mining and Reclamation Plan For
Centennial Project, Carbon County, Utah

This agency's views concerning the subject mining and reclamation plan are contained in our previous correspondence to you and in the 25 September 1981 memorandum from the Bureau of Land Management (BLM) District Manager at Moab. However, we differ with recommendation number two of BLM's memorandum in one respect.

BLM stated that Federal lands included in buffer zones established by the Fish and Wildlife Service around golden eagle nests will be closed to surface occupancy with the exception of activities related to exploration, subsidence monitoring or ventilation. We recommend instead that no mining-related activities of any kind be allowed within these buffer zones without prior written approval of this agency. We will be responsive and will immediately review any requests concerning proposed works within these buffer zones. You may refer to our 20 July 1981 memorandum for the locations of these zones.

Based on the above-mentioned criteria this agency recommends approval of the subject mining and reclamation plan.

Donald E. Lindberg

cc: BLM District Manager at Moab
BLM Utah State Director
U.S. Geological Survey
Area Mining Supervisor, SLC
Utah Division of Oil, Gas, and Mining, SLC
Utah Division of Wildlife Resources
Director
Utah Division of Wildlife Resources,
Southeast Regional Officer

UT0022

United States Department of the Interior
FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES
2060 ADMINISTRATION BUILDING
1745 WEST 1700 SOUTH
SALT LAKE CITY, UTAH 84104-5110

OSM-WTC
1985 JUN 20 AM 8:43
WESTERN TECHNICAL CENTER

IN REPLY REFER TO:
(ES)

June 17, 1985

MEMORANDUM

TO: Acting Deputy Administrator
Technical Services Center West
Office of Surface Mining
Denver, Colorado

ATTN: Mark Humphrey

FROM: Field Supervisor

SUBJECT: Tower Resources Emergency Lease U-52341

We have reviewed the Addendum and wish to elevate one potential concern. This concern may already be covered in the approved MRP; however, we do not have a copy. We would concur with the Addendum as long as it, or the MRP, has language indicating that loss of surface waters for wildlife use will be replaced or appropriately mitigated should mining result in their loss (i.e. Spring S25-1) or significantly impair their use.

Thank you for the opportunity to comment.

Robert L. McCoy

cc: DOGM, Salt Lake City, Utah ATTN: Susan Linner
DWR, Price, Utah
DWR, Salt Lake City, Utah
RO/HR, Denver, Colorado

UT0022
SL-027304
SL-063058
U-010581

United States Department of the Interior

GEOLOGICAL SURVEY
Office of the District Mining Supervisor
Conservation Division
2040 Administration Building
1745 West 1700 South
Salt Lake City, Utah 84104

April 30, 1981

Memorandum

To: Region Director, Office of Surface Mining, Denver

From: District Mining Supervisor, Salt Lake City, Utah

Subject: Conditional Approval to Extend Pinnacle Mine, Main Entry System on Fee Lands into Federal Leases SL-027304, SL-063058, and U-010581

In your letter dated March 17, 1981, to Tower Resources you referred to a letter by Tower dated March 5, 1981, wherein they requested conditional approval for current mining operations in the Gilson seam to proceed into Federal leases.

Tower representatives Sam Quigley and Mike Glasson visited our office this morning and informed us that in conversations with your office, conditional approval to enter the Federal lands depended on the concurrence of the Geological Survey.

We have visited the Pinnacle mine and can verify that continued and orderly development of the mine requires that the Main Entry system, now developing in the Gilson seam on fee lands, be extended eastward into the Federal leases within the next 60 days.

We have also reviewed the Tower Resources mine plan which you mailed to this office on January 23, 1981. We reported to you on the adequacy of the plan on March 18, 1981. One of our primary concerns with the plan was Tower's proposal not to columnize the Gilson working with the overlying Lower Sunnyside seam workings and the underlying Aberdeen seam workings. Mr. Quigley assured Mr. McKean and myself that he too was concerned with columnization since it is an accepted basic engineering principle and that he would promptly realign the Gilson seam workings and submit a new plan to provide columnization of the works in the mine so far as possible so that barriers would be superimposed over barriers, main development entries would be superimposed over main development entries, and panels would be superimposed over panels.

In order to provide orderly development of the Pinnacle mine and to permit the company to sustain current levels of production we recommend that a conditional approval be given Tower to develop the Main East entries eastward according to the plan proposed in its March 5, 1981, letter into the Federal leases. The existing surface facilities will be used and no additional surface impacts will occur. This recommendation is conditioned on Mr. Quigley's agreement to superimpose similar development in the upper seam

(Lower Sunnyside) and lower seam (Aberdeen) on a continuation of the present alignment of the Gilson seam Main East entries. A conditional approval under these conditions will not adversely affect future development in any part of the mine and in our opinion would be compatible with maximum economic recovery of all of the minable coal in the Federal leases which contain the majority of the reserves in the mining unit.

If you require additional information from this office, please notify me.

Jackson W. Moffitt

UT0022

IN REPLY REFER TO

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
UTAH STATE OFFICE
324 SOUTH STATE, SUITE 301
SALT LAKE CITY, UTAH 84111-2303

OSM-WTC SL-027304
1985 JUN -6 AM 8:49
U-921
JUN 4 1985
WESTERN TECHNICAL CENTER

Memorandum

To: Walter Swain, OSM Senior Project Manager, State of Utah, Denver

Attn: Mark Humphrey

From: Chief, Mining Law and Solid Minerals, BLM-SO, Salt Lake City, Utah

Subject: Tower Resources, Inc., Centennial Project, Carbon Conty, Utah, Addendum to Approved Mining and Reclamation Plan (MRP)

The subject addendum forwarded with your letter dated July 20, 1984, and identified as "Addendum to Tower Resources approved MRP for the addition of emergency lease No. U-52341" was reviewed and commented on by our memorandum dated August 24, 1984.

The plan as submitted stated,"This addendum... is merely for the incidental addition of a 120-acre Federal emergency lease to the Centennial Project. Reserves contained within this lease will be mined simply as an underground extension of the existing, approved, permitted and currently operating Pinnacle mine... access to and handling and extraction of all coal will be through existing Pinnacle mine (Gilson Seam) facilities. There are no other minable seams within this emergency lease." (Chap. II, page 3.) In our memorandum dated August 24, 1984, we requested additional information relative to potential minable coal in the Tower Sunnyside seam (Apex mine) within the emergency lease. A Tower Resources letter dated September 24, 1984, (copy attached) responded to our comments. In part, the letter stated, "Although the Tower Sunnyside seam occurs over this emergency lease, it is less than 4 feet in thickness and therefore not economically recoverable according to available technology. Consequently Tower has plans to conduct mining only in the Gilson seam." This statement was verified by checking coal isopach maps on file in the BLM - Price River Resource Area.

The proposed coal recovery procedures in the subject addendum comply with 43 CFR 3482.1(c) rules and regulations, and will safely obtain maximum recovery of the resource within the plan area using current technology and available mining equipment.

We concur with the underground mining part of the subject mining plan, as now amended, and recommend that it be approved.

J. H. Moffitt

UT0022

IN REPLY REFER TO

3400
(U-066)

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Moab District
P. O. Box 970
Moab, Utah 84532

MAY 04 1981

Memorandum

To: Regional Director, Office of Surface Mining, Denver, Colorado

From: District Manager, Moab

Subject: Mine Plan Review - Tower Resources

Tower Resources Mining and Reclamation Plan (including Addendum A) has been reviewed. Although numerous references were made to additional portal areas, access roads and a preparation plant, our review for completeness has been limited to the operation of the existing Pinnacle Mine. Our comments on the plan in general follow:

1. The plan states that none of the historic sites identified in the project area would impede development (Page 104). The archaeological report by Hawkins and Seward (Exhibit IV-E) recommends that a cabin in Straight Canyon (42 Cb 180) be avoided.

2. On page 101, the plan states that deer hunting is the only recreational use. Other uses would include hiking, picnicking and ORV recreation.

3. A fish and wildlife plan was not developed as such was not "deemed practicable" (page 97). The significant impact of the coal haul road on wintering deer was only mentioned in passing without an attempt to develop mitigating measures for the term of mine life. These impacts to critical deer winter range and their mitigation must be addressed in the mine plan prior to approval. Mitigation measures are to be developed by the operator through joint consultation and coordination with Utah DWR and BLM.

4. The right-of-way application for the proposed coal haul road on Plate I has been verbally disapproved by the BLM due to its location across critical deer winter range.

The following stipulations are recommended at this time for additional portal areas, access roads and associated facilities. Additional stipulations will be provided after receipt of plan addendums that specifically address planned facilities.

1. Prior to approval of mine plan addendums relating to additional surface disturbances, the operator will provide a wildlife field survey to the Authorized Officer that includes identification of nesting sites for raptors and migratory birds of high Federal interest, habitat of resident fish and wildlife species of high interest to the State and eagle concentration areas. The wildlife biologist conducting the survey and survey methods will be acceptable to the Authorized Officer. Mitigating measures to protect identified wildlife species will be developed by the operator through joint consultation and coordination with Utah DWR and BLM. Mitigating measures may include restrictions on location of surface facilities, limitations on surface disturbances and habitat manipulation to upgrade adjacent wildlife range.

2. Surface disturbances and facilities planned for the project area shall be subject to Visual Resource Management considerations. Efforts shall be made to mitigate visual impacts by imitating the form, line, color and texture of the natural landscape to the greatest extent practical as determined by the Authorized Officer.

3. Prior to surface disturbing activities, the lessee shall have had an archaeologist, acceptable to the Authorized Officer, conduct an archaeological survey of the area to be disturbed. The Authorized Officer retains the prerogative to require the relocation of proposed facilities to protect archaeological values located on leased lands, or the operator may be required to have sites salvaged by a qualified archaeologist prior to proceeding with operations. If sites are uncovered by his operations, the operator shall not proceed further until additional clearance is granted by the Authorized Officer.

In reviewing the mine plan, the unsuitability criteria were applied to the Federal leases included in the permit area and also to lands under lease modification application by Tower Resources. These lands were found suitable for mining.

cc:
Utah State Director (U-930)

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Moab District
P. O. Box 970
Moab, Utah 84532

IN REPLY
REFER TO:
3450
(U-066)

File ACT/047/018
Encl 2, 4
Copy to Sue

AUG 14 1984

Memorandum

To: Center Administrator, OSM, Denver

Attention: Dave Maxwell

From: District Manager, Moab

Subject: Addendum to Tower Resources' Approved MRP

We received the addendum to Tower Resources' approved MRP on July 23, 1984 which considers the addition of the 120-acre emergency coal lease U-52341 to their existing permit area. These additional coal reserves will be mined as an underground extension of the currently operating Pinnacle Mine. As such, additional surface disturbance will not be required. Therefore, significant surface impacts will not result from this addition to the permit area.

We hereby grant our final concurrence for the approval of this addendum to Tower Resources' approved MRP as proposed by the company insofar as protection of surface resources is concerned. Final concurrence in regards to coal recovery procedures and conflicts with future recovery of coal resources will be addressed by our State Office.

File ACT/007/019A
Folder #2
Copy to Sue

RECEIVED

AUG 9 1984

DIVISION OF OIL
GAS & MINING

SCOTT M. MATHESON
GOVERNOR

STATE OF UTAH
DEPARTMENT OF COMMUNITY AND
ECONOMIC DEVELOPMENT

Division of
State History
(UTAH STATE HISTORICAL SOCIETY)

MELVIN T. SMITH, DIRECTOR
300 RIO GRANDE
SALT LAKE CITY, UTAH 84101-1182
TELEPHONE 801/533-5755

August 6, 1984

James W. Smith, Jr.
Oil, Gas & Mining
4241 State Office Building
Salt Lake City, Utah 84114

Attn: Susan Linner

RE: Addendum-Emergency Lease, Tower Resources, ACT/007/019(a), Folder No. 2, Carbon County, Utah

In Reply Refer to Case No. H184

Dear Mr. Smith:

The Utah Preservation Office has received for consideration a copy of the Emergency Lease for Tower Resources. After review of the submitted material, our office notes that the section concerning cultural resources states that this is an extension of underground mining, and that no new surface disturbance is anticipated under this action. If this is the case, our office has no comments at this time.

Since no formal consultation request concerning eligibility, effect or mitigation as outlined by 36 CFR 800 was indicated by you, this letter represents a response for information concerning location of cultural resources. If you have any questions or concerns, please contact me at 533-7039.

Sincerely,

James L. Dykman
Cultural Resource Advisor
Office of State Historic
Preservation Officer

JLD:jrc:H184/0671V

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT

This permit, UT-0022, which incorporates Utah Permit ACT/007/019, as revised, is issued for the United States of America by the Office of Surface Mining, Reclamation and Enforcement (OSMRE) to

Tower Resources, Inc.
Centennial Project Mines
P.O. Box 1027
Price, Utah 84501

for the Centennial Project mines. Tower Resources, Inc. is the lessee of Federal coal leases No. U-52341, U-010581, SL-063058 and SL-027304.

Sec. 1 STATUTES AND REGULATIONS - This permit is issued pursuant to the Surface Mining Control and Reclamation Act of 1977, 30 U.S.C. 1201 et seq., hereafter referred to as SMCRA, and the Federal coal lease(s) issued pursuant to the Mineral Leasing Act of 1920, as amended, 30 U.S.C. 181 et seq., the Federal Coal Leasing Amendments Act of 1976, as amended 30 U.S.C. 201 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 permit is also subject to all regulations of the Secretary of the Interior including, but not limited to, 30 CFR Chapter VII and 43 CFR Part 3400, and to all regulations of the Secretary of Energy promulgated pursuant to Section 302 of the Department of Energy Organization Act of 1977, 42 U.S.C. 7152, which are now in force or, except as expressly limited herein, hereafter in force, and all such regulations are made a part hereof.

Sec. 2 The permittee is authorized to conduct underground coal mining and reclamation operations on Federal lands within the permit area situated in the State of Utah, Carbon County, and located within:

Township 13 South, Range 11 East, SLBM,
SW 1/4, SW 1/4 SE 1/4, Section 9
SE 1/4, NE 1/4, NW 1/4, N 1/2 SW 1/4, SE 1/4 SW 1/4, Section 7
All, Section 8
S 1/2, Section 5
S 1/2, Section 6
N 1/2 NE 1/4, SE 1/4 NW 1/4, N 1/2 NW 1/4, Section 17
N 1/2 NE 1/2, Section 18

as shown on the attached map, subject to the conditions of the lease and the approved mining plan, and all other applicable conditions, laws, and regulations.

Sec. 3 This permit will expire on November 18, 1986, except that this permit will terminate if the permittee has not begun the surface coal mining and reclamation operations covered herein within 3 years of the date of permit issuance.

Sec. 4 The permit rights may not be transferred, assigned, or sold without the approval of the Director, OSMRE. Transfer, assignment, or sale of permit rights must be done in accordance with 30 CFR 740.13(e) and UMC 788.18.

Sec. 5 The permittee shall allow the authorized representatives of the Secretary, and the Utah Division of Oil, Gas and Mining, including but not limited to inspectors and fee compliance officers, 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 842.13 and UMC 840.12 and 842.13,

b. Be accompanied by a private person for the purpose of conducting an inspection in accordance with 30 CFR 842.12 and UMC 842.12, when the inspection is in response to an alleged violation reported by the private person.

Sec. 6 The permittee shall conduct surface coal mining and reclamation operations only on those lands specifically designated as being within the permit area as shown on the attached map and approved for the term of the permit and which are subject to the performance bond.

Sec. 7 The permittee shall minimize any adverse impact to the environment or public health and safety resulting from noncompliance with any term or condition of this permit by including, but not being 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. 8 The permittee shall dispose of solids, sludge, filter backwash, or pollutants removed 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. 9 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 the Utah Division of Oil, Gas and Mining and OSMRE, the approved Utah State Program, and the Federal Lands Program.

Sec. 10 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. 11 Upon expiration, this permit may be renewed for areas within the boundaries of the existing permit in accordance with SMCRA, the approved Utah State Program and the Federal Lands Program.

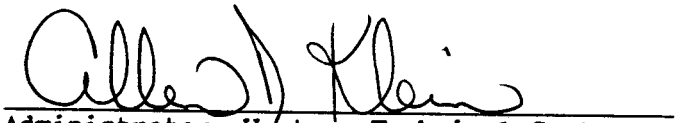
Sec. 12 If during the course of mining operations previously unidentified prehistoric or historic resources are discovered, the permittee shall ensure that the resource(s) is not disturbed and shall notify Utah DOGM and OSMRE. Utah DOGM, after coordination with OSMRE shall inform the permittee of necessary actions required.

Sec. 13 The operator shall pay all reclamation fees required by 30 CFR Chapter VII, Subchapter R for coal produced under this permit.

Sec. 14 APPEALS - The permittee shall have the right to appeal: (a) under 30 CFR 775 from an action or decision of any official of OSMRE; (b) under 43 CFR 3000.4 from an action or decision of any official of the Bureau of Land Management; (c) under 30 CFR 290 from an action, order, or decision of any official of the Minerals Management Service; or (d) under applicable regulations from any action or decision of any other official of the Department of the Interior arising in connection with this permit.

Sec. 15 SPECIAL CONDITIONS - The permittee shall comply with the terms and conditions set out in the lease, Utah State permit ACT/007/019, as revised, and this permit. In addition, the permittee shall comply with the special conditions of Utah Permit ACT/007/019, as revised, and the special Federal condition appended hereto as Attachment B. These conditions 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. In accordance with 30 CFR Part 774 (1983), these conditions may be revised or amended, in writing, by the mutual consent of the grantor and the permittee at any time to adjust to changed conditions or to correct an oversight. The grantor may, by order, require reasonable revisions of this permit to ensure compliance with SMCRA and the regulatory program.

OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT

By: 

Administrator, Western Technical Center

5/20/86

Date

ATTACHMENT B

SPECIAL CONDITION

Special Condition 1. At such time as OSMRE, in consultation with the Utah Division of Oil, Gas and Mining and the SHPO, determines that subsidence within the permit area may adversely affect known or unrecorded cultural resources, additional cultural resource studies may be required. This determination will be based on new subsidence or new cultural resource information.

CHRONOLOGY OF EVENTS

TOWER RESOURCES, INC.'S
CENTENNIAL PROJECT MINES

DATE	EVENT
November 12, 1981	Mining plan for Centennial Project mines approved.
November 19, 1981	Federal permit issued under Utah State program.
December 1, 1983	Emergency Federal lease U-52341 issued to Tower.
April 18, 1984	Tower submitted permit revision application for modification to the approved Mining and Reclamation Plan to Utah Division of Oil, Gas and Minerals (DOGM) and the Office of Surface Mining Reclamation and Enforcement (OSMRE).
November 27, 1984	OSMRE sent review comments to Utah DOGM.
February 25, 1985	Utah DOGM submitted review comments to the applicant.
April 25, 1985	Tower submitted a response to Utah DOGM and OSMRE.
May 21, 1985	Utah DOGM determined that the emergency lease permit application package was complete.
June 26, 1985	Tower published fourth consecutive weekly notice of availability of complete permit revision application.
June 28, 1985	Draft technical analysis forwarded to OSMRE by Utah DOGM.
August 20, 1985	OSMRE sent comments on draft technical analysis to Utah DOGM.
October 31, 1985	OSMRE received final technical analysis from Utah DOGM.
February 1986	OSMRE recommended approval of mining plan revision.

Office of Surface Mining Reclamation and Enforcement Findings

Centennial Project Mines

I. The Office of Surface Mining Reclamation and Enforcement (OSMRE) has reviewed the permit application package (PAP) and PAP Addendum, updated through April 25, 1985, and finds that the permit application is accurate and complete and that it complies with the Surface Mining Control and Reclamation Act of 1977 (SMCRA), the Utah State Program, the Federal Lands Program and all other requirements of applicable Federal laws. [Utah Board and Division of Oil, Gas and Mining, Coal Mining and Reclamation Permanent Program Regulations Pertaining to Surface Effects of Underground Coal Mining Activities (UMC) 786.19(a)]

II. The Utah Division of Oil, Gas and Mining (DOGM) has reviewed the PAP and PAP Addendum and has prepared technical analysis (TA) and Findings Documents. OSMRE has reviewed the permit application package, Utah DOGM's TA and findings document and environmental assessments (EA) prepared by the Bureau of Land Management which are pertinent to to Federal Lease Nos. SL-063058, SL-027304, and U-010581, and U-52841. Based on these documents, OSMRE makes the following findings:

1. The application is for an extension of a permitted underground mine which will not involve any surface disturbance. Therefore, no additional surface reclamation is required. The surface mining and reclamation activities, as required by SMCRA and the Utah State Program, can be feasibly accomplished under the approved mining and reclamation activities plan. (See EA prepared by BLM, May 5, 1981; February 12, 1982; June, 1982; and April 14, 1983; State Findings Document.)

2. The assessment of the probable cumulative impacts of all anticipated coal mining in the general area on the hydrologic balance, as described in UMC 780.21(c), has been made by Utah DOGM, and the proposed operations have been designed to prevent damage to the hydrologic balance outside the proposed permit area. The cumulative hydrologic impact assessment of all existing and anticipated coal mining operations in the cumulative impact area indicates:

   (a) The impact of the mining operations on ground-water flow will be negligible because of the perched and lenticular nature of the aquifers in the area affected by the mining. The applicant has only encountered a significant quantity of ground water one time while mining, and this was associated

with a burned area of coal. Well test data also indicated that water bearing zones in the Blackhawk Formation are perched with a limited amount of recharge.

Subsidence could result in changes in the configuration of ground-water flow, especially where subsidence fractures have resulted in the diversion of flow along new fractures or permeable lithologies. These changes could cause depletion of water in certain localized aquifers, but the increased flow rates might also improve water quality by decreasing ground-water residence time.

(b) All drainages in the mine plan area are ephemeral, flowing only in response to snowmelt and rainfall events. Therefore, infiltration and runoff volumes should not be affected by the mining operations. Sediment control facilities are already in place to minimize the effects of the surface disturbance related to the coal mining. Surface disturbance occurs only in the Right Fork of Deadman Canyon, an ephemeral drainage in the western portion of the cumulative impact area. The proposed mine plan revision will not result in any additional surface disturbance, so it should not have any affect on surface water quality or quantity.

(c) The applicant has committed to expand its existing surface and ground-water monitoring plan to include Emergency Lease U-52341 (Addendum to Tower Resources' Approved Mining and Reclamation Plan for the Addition of Emergency Lease No. U-52341, Appendix B). Furthermore, the applicant must commit to replace or mitigate loss of surface waters for fish and wildlife due to mining activity in the emergency lease, and submit a plan for approval outlining how this will be done, within 30 days of approval of the modification (Stipulation 817.97-(1)-SCL). The applicant must also commit to submit a plan for approval to Utah DOGM and the Utah Division of Environmental Health for holding and treating of all mine water discharge (Stipulation 817.50-(1)-(DC)).

The operational design proposed for the Centennial Project mine plan, as modified, is herein determined to be consistent with preventing damage to the hydrologic balance outside the permit area [UMC 786.19(c)]. (See CHIA, page 14; BLM EA's dated May 21, 1981; February 2, 1982; June 1982; and April 4, 1983.)

3. After reviewing the description of the proposed permit area, OSMRE determines this area is:

a. Not included within an area designated unsuitable for underground coal mining activities under UMC 764, or 30 CFR 769. [UMC 786.19(d)(1)] (See State Findings Document; PAP Addendum, page 22.)

b. Not within an area under study for designation as unsuitable for underground coal mining activities in an administrative proceeding begun under UMC 764, or 30 CFR 769. [UMC 786.19(d)]

c. Not unsuitable for mining in accordance with section 522(b) pursuant to section 522(a)(2) of SMCRA. [See State Findings Document, page 1.]

d. Not unsuitable for mining in accordance with section 522(b) pursuant to standards set forth in section 522(a)(3) of SMCRA. [See State Findings Document, page 1.]

e. Not on any Federal lands within the boundaries of any national forest. [UMC 786.19(d)(3)] (PAP Addendum, Plate II.)

f. Not on any lands within the boundaries of the National Park System, the National Wildlife Refuge Systems, the National System of Trails, the National Wilderness Preservation System, the Wild and Scenic Rivers System, including study rivers designated under section 5(a) of the Wild and Scenic Rivers Act, and National Recreation Areas designated by Act of Congress. [UMC 786.19(d)(3)] (See State Findings Document; PAP Addendum, page 22.)

g. Not within 100 feet of the outside right-of-way line of a public road. [UMC 786.19(d)] (See PAP Addendum, page 23.)

h. Not within 300 feet of any occupied dwelling. [UMC 786.19(d)(5)] (See State Findings Document; PAP Addendum, pages 22 - 23.)

i. Not within 300 feet of any public building, school, church, community, or institutional building, public park, or within one hundred feet of a cemetery. [UMC 786.19(d)(3)] (See State Findings Document; PAP Addendum, pages 22 - 23.)

4. OSMRE's issuance of a permit is in compliance with the National Historic Preservation Act and implementing regulations (36 CFR 800). [UMC 786.19(e)] (See State Findings Document; State Historic Preservation Officer concurrence letters, dated June 4, 1981 and August 6, 1984.)

5. The applicant has the legal right to enter and begin surface mining activities in the permit area. [UMC 786.19(f)] (See State Findings Document; PAP Addendum, pages 12 - 14.)

6. The applicant has submitted proof and OSMRE's records indicate that prior violations of applicable law and regulations have been corrected. [UMC 786.19(g)] (See letter from George Stone, Chief, OSMRE Branch of Compliance, dated February 5, 1986, Memorandum to file dated 1986.)

7. OSMRE's records confirm that all fees for the Abandoned Mine Reclamation Fund have been paid. [UMC 786.19(h)] (See letter from George Stone, Chief, OSMRE Branch of Compliance, dated February 5, 1986, Memorandum to file dated February 12, 1986.)

8. OSMRE records show that the applicant does not control and has not controlled mining operations with a demonstrated pattern of willful violations of SMCRA 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 SMCRA. [UMC 786.19(i)] (See letter from George Stone, Chief, OSMRE Branch of Compliance, dated February 5, 1986, Memorandum to filed dated February 12, 1986.)

9. Underground coal mining and reclamation operations to be performed under the permit will not be inconsistent with such operations anticipated to be performed in areas adjacent to the proposed permit area. [UMC 786.19(j)] (See State Findings Document, page 1.)

10. The applicant has submitted an adequate performance bond required under UMC Parts 800-806 and the Utah State program, prior to the issuance of the permit. [UMC 786.19(k)]

11. There are no Alluvial Valley Floors (AVF) existing within the proposed permit area. There are no AVF's which may be negatively impacted by the mining of the proposed leases [UMC 786.11(1)]. (See State Findings Document.)

12. The applicant has provided evidence and Utah DOGM and OSMRE have found there are no prime farmlands in the permit area and area for life-of-mine. [UMC 786.19(l)] (See State Findings Document, page 2.)

13. The proposed postmining land use of the permit area has been approved by Utah DOGM, BLM, and OSMRE. [UMC 786.19(m)] (See letter of concurrence from BLM dated August 14, 1984; BLM EA's dated February 12, 1981; May 21, 1981; and April 4, 1983.)

14. Utah DOGM and OSMRE have made all specific approvals required by SMCRA, the approved Utah State Program and the Federal Lands Program. [UMC 786.19(n)] (See State findings, page 3.)

15. The proposed activities will not affect the continued existence of threatened or endangered species or result in the destruction or adverse modification of their critical habitats. [UMC 786.19(o)] (See U.S. Fish and Wildlife letters, dated October 1, 1981 and November 4, 1985; PAP Addendum, page 21.)

16. The applicant has satisfied the applicable requirements of 30 CFR Part 785. [30 CFR 773.15(c)(8)] (See State Findings Document, page 3; PAP Addendum, Chapter IV.)

17. The proposed surface coal mining and reclamation operations will not adversely affect a private family burial ground. [30 CFR 773.15(c)(11)] (PAP Addendum, pages 22 - 23.)

18. All existing structures comply with UMC 700.11(e) and the applicable performance standards of 30 CFR Chapter VII, Subchapter B or UMC Subchapter K. (See State Findings Document.)

Allen D. Klein

Administrator, Western Technical Center

2/23/86

Date

FINDING OF NO SIGNIFICANT IMPACT

Tower Resources, Inc.

Centennial Project Mines

The technical analyses (TA's) prepared by the State of Utah and the environmental assessments (EA's) prepared by the Office of Surface Mining Reclamation and Enforcement (OSMRE) and the Bureau of Land Management (BLM) identify certain environmental impacts that could result from the Federal approval of the mining plan, as modified, and the permit application. The permit application and addendum, submitted to the State under its approved permanent program, proposes a total permit area of 2,360 acres, encompassing all of Federal Lease No U-52341; portions of Federal Leases SL-063058, SL-027304 and U-010581; and all of the Zion's Fee Lease.

The regional impacts of coal mining in the Price River Basin are addressed in the Bureau of Land Management's Uinta-Southeastern Utah Coal Region Environmental Impact Statement, 1983.

OSMRE has determined that impacts to the Centennial Project mines area would result from mining. However, OSMRE finds that impacts would not be significant.

Impacts identified by OSMRE and the State would be mitigated by those appropriate environmental protection measures detailed in the mining plan and proposed condition attached to the permit.

Based upon the evaluation of impacts given in the TA's and EA's, I find that no significant impacts to the quality of the human environment would result from the proposed action. Therefore, an environmental impact statement is not required.

Allen D. Klein

Administrator
Western Technical Center

2/23/86

Date

National Environmental Policy Act (NEPA) Documents

The following NEPA documents are attached:

a. Bureau of Land Management (BLM) December, 1985, Finding of No Significant Impact for Lease No. U-52341.

b. BLM Environmental Assessment for Lease No. U-52341, dated April 28, 1983.

c. BLM Site Specific Analysis for the Hoffman Creek tract (Lease No. U-52341), dated June, 1982.

d. BLM Environmental Assessment for Lease Modification of Lease Nos. SL-27304, SL-063058 and U-010581, dated May 21, 1981.

The first three documents discuss the impacts of the addition of Lease No. U-52341 to the permit area. The second document makes reference to the third and fourth documents. The fourth document discusses and describes the three leases which made up the original permit area.

DECISION RECORD AND FINDING OF NO SIGNIFICANT IMPACT

EA No: UT-060-PR-83-37 Project: Tower Resources' Emergency Coal Lease Application U-52341

I. DECISION RECORD

A. Decision: The attached environmental assessment/technical examination satisfactorily considers the environmental impacts of issuing emergency coal lease U-52341 to Tower Resources. Approval of the proposed action is recommended.

B. Rationale: Coal under the application area would be mined from existing underground mines that make up the Centennial Project. Mining would result in the estimated recovery of 700,000 tons of coal. Additional surface disturbance or increased annual production would not be required.

C. Environmental Considerations: The principal effect of mining subject area would be subsidence. However, since surface and ground water would not be affected due to their expected absence, environmental effects will be minimal. Protection of escarpments will be by stipulation as indicated below.

D. STIPULATIONS: The Stipulations following are included as part of this Decision Record. The Stipulations have been developed through this Environmental Assessment to mitigate the environmental impacts of the action permitted by this Decision Record.

II. FINDING OF NO SIGNIFICANT IMPACT

Based on the analysis of potential environmental impacts contained in this Environmental Assessment, I have determined that impacts are not expected to be significant. Therefore an Environmental Impact Statement is not required.

Area Manager _____ Date _____

STIPULATIONS

EA No: UT-060-PR-83-37 Project: Emergency Coal Lease Application (U-52431)

Applicant: Tower Resources Inc.

Alternative as per Decision Record: Proposed Action

The following stipulations have been developed through this Environmental Assessment to mitigate the environmental impacts of this action. The action referenced is the alternative indicated on the Decision Record and mentioned above, and is described fully in the Environmental Assessment.

1. The lessee shall cooperate with the mining branch of the Bureau of Land Management in designing mine plans to ensure that subsidence will not cause the creation of fissures, rock falls or land slides along escarpments of the Book Cliffs.

2. In the event that surface disturbances become necessary during the lease life, the lessee may be required to conduct a wildlife field survey and provide survey data to the Authorized Officer prior to such activities that includes identification of nesting sites for raptors and migratory birds of high Federal interest and wildlife species of high interest to the State and eagle concentration areas. The field survey shall be acceptable to the Authorized Officer. Mitigating measures to protect identified wildlife species shall be developed by the Authorized Officer upon review of exploration and mine plans.

3. The lessee will be required to establish a monitoring system capable of measuring the effects of underground mining on the surface and subsurface resources. The system shall include a surface subsidence monitoring system to measure the effects of mining on the land surface and shall be conducted by methods and a manner approved by the Mining Director and in conjunction with requirements of the Authorized Officer. The results of the monitoring shall be reported periodically to the Mining Director and Authorized Officer. The Mining Director may require the lessee to employ such measures and precautions deemed necessary to protect surface and subsurface resources.

Who is the Mining Direct.

4. If any items or features of historical, cultural, archaeological or paleontological value are discovered during lease operations, the lessee shall immediately notify the Mining Supervisor and shall not disturb such items or features until the Mining Supervisor issues instructions. If the lessee is ordered to take measures to protect any items or features discovered during lease operations, the cost of the measures shall be borne by the lessor, and such items and features shall remain under the jurisdiction of the United States.

Bonding: The standard $25,000 Statewide or $75,000 Nationwide bond is recommended for the application area.

File Code: 3400/1791

ENVIRONMENTAL ASSESSMENT COVER SHEET

[X] Draft EA [ ] Final EA EA No. UT-060-PR-83-37

[X] EA and Tech Exam (Required by 43 CFR 23)

Project: Emergency Coal Lease Application U-52341

Applicant: Tower Resources, Inc. Project Location: T. 13 S., R. 11 E., SLM, Sec. 9

Intensity of Analysis: [X] Minimal [ ] Low [ ] Medium

BLM Office: Price River Phone No.: (801) 637-4584

List of Preparers:

Name	Title	Resources Assigned
Sid Vogelpohl	Geologist	

Sid Vogelpohl GEOLOGIST 4-28-83

Team Leader Signature/Title Date

I. INTRODUCTION/PROPOSED ACTION

Tower Resources, Inc. has applied for an emergency coal lease (U-52341) adjacent to their existing block of Federal coal leases (2,478.35 acres) in the Book Cliffs coal field of Carbon County, Utah. The 120-acre application area, described below, is located about 10 air-miles north-northeast of Price, Utah as indicated on Map 1. The relationship of the application area to Tower Resources' existing coal leases and topographic features is indicated on Map 2.

T. 13 S., R. 11 E., SLM, Section 9: E½SW¼, SW¼SE¼

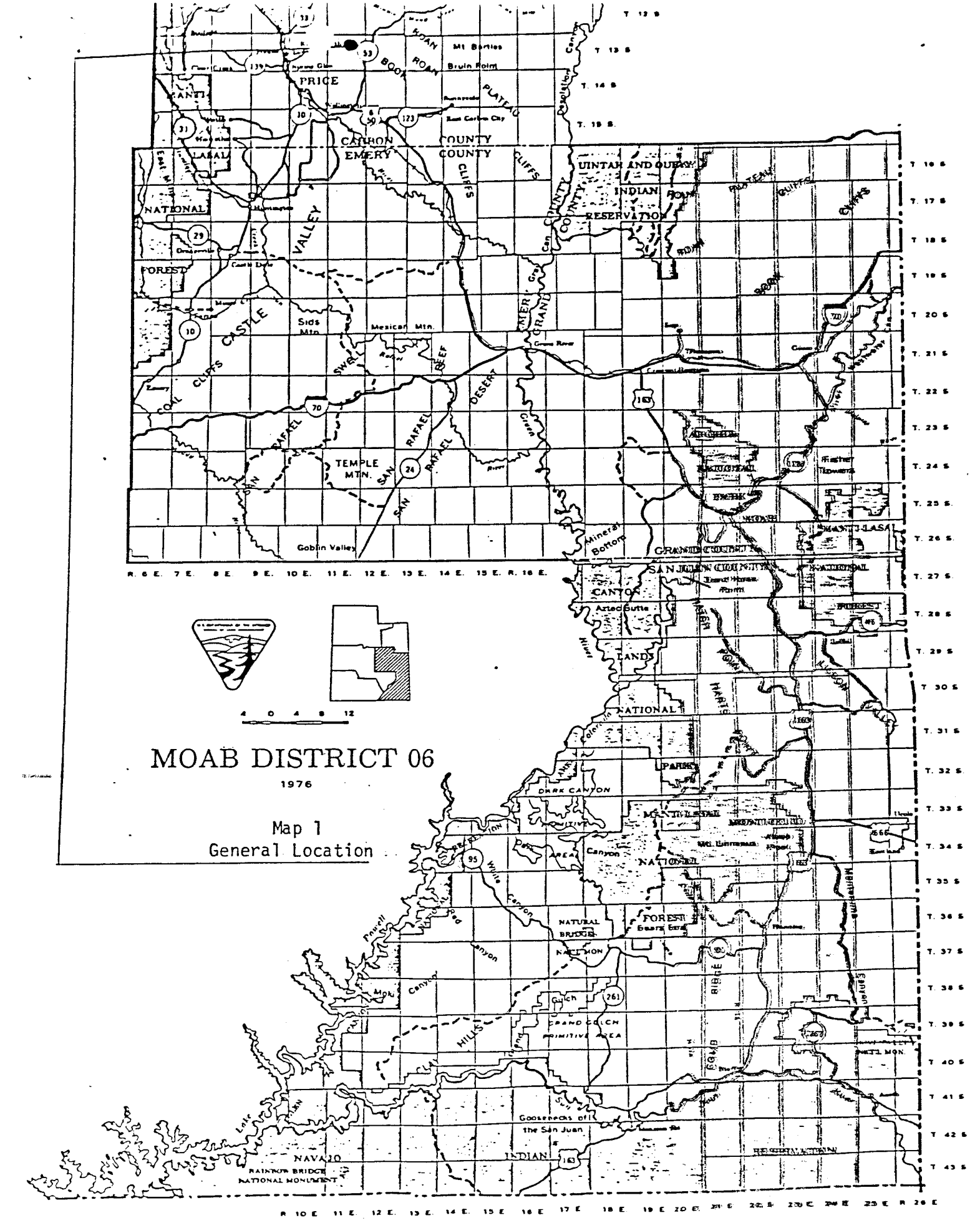
The area under emergency lease application had been identified for competitive leasing based on an expression of interest submitted by Tower Resources and has been included in a draft environmental impact statement currently available for public review. The tentative lease date is February 1984. In the site specific analysis prepared prior to the impact statement, the Hoffman Creek tract was identified as minable from property owned by Tower Resources or Sunedco Coal Company which is located to the north of the application area.

Tower Resources is currently producing coal from the Pinnacle Mine (Gilson coal seam) and the Apex Mine (Lower Sunnyside coal seam) as their Centennial Project, as the mining operation is known, proceeds. The mining project began in October 1980 with the opening of the Pinnacle Mine. Project life is estimated at 28 to 30 years. In accordance with Tower Resources' application, the Pinnacle Mine's Main east workings are "rapidly approaching" the boundary of the application area. The Mining Supervisor of the Bureau of Land Management has determined that the Main East workings will reach the boundary of the application area by May or June 1983. The Mining Supervisor has determined that, not knowing the extent of outcrop burn, irregular reserve configuration, narrow mining corridors and abandoned mine workings, the application meets the emergency lease criteria for bypass coal even though data to define the coal of the application area as "isolated" (43 CFR 3400.0-5(d)) is lacking.

II. ALTERNATIVES

A. No Action

The "No Action" alternative would be to delay processing of the emergency lease application. As mining operations progress, the coal in the application area could become more difficult and more costly to extract, depending on the remaining roof support, ventilation and ease with which men and equipment can be relocated. Maintaining the "No Action" alternative for the long term could result in the inability of coal recovery from the application area. Since the Mining Supervisor of the Bureau of Land Management has determined that an emergency situation (by-pass) does exist, early response on the application is imperative. This alternative is not considered further.



MOAB DISTRICT 06

1976

Map 1
General Location

☆ U.S. GOVERNMENT PRINTING OFFICE: 1977-0-777-115/38

Lease
U-010581
Fee
Lease SL-27304
Lease SL-063058
Proposed
Lease
5
8
12
13
16
Canyon
Prospect
Deadman
Straight
TRAIL
PACK
Hurricane

Map 2

B. Competitive Leasing

The Mining Supervisor has determined that recovery of the coal reserves in the application area by adjacent mines other than Tower Resources is doubtful. Informal contact with Sunedco Coal Company, the only other adjoining coal owner, has resulted in notification that Sunedco does not have a competitive interest in the application area. Thus, this alternative is not considered further.

III. PAST ENVIRONMENTAL ASSESSMENTS

The impacts of leasing the application area to Tower Resources has been fully addressed in past environmental assessments. Modification of the three Federal coal leases held by Tower Resources was accomplished in 1981 which was preceeded by the preparation of an environmental assessment (UT-060-PR-81-11). A site specific analysis (UT-060-PR-82-10) was completed in 1982 to consider the environmental and socioeconomic impacts of leasing the Hoffman Creek tract and the analysis was based on Tower Resouces as the successful bidder. Further environmental analysis is not necessary.

IV. BONDING

The standard $25,000 Statewide or $75,000 Nationwide bond would be sufficient for the application area.

CHECKLIST FOR ENVIRONMENTAL ASSESSMENT

EA No: UT-060-PR-83-37 Project: TOWER RESOURCES EMERGENCY COAL LEASE APPLICATION U-52341

The following mandatory items have been considered in this Environmental Assessment. Items which may be impacted have been discussed within the Environmental Assessment; the remainder will not be affected and are not discussed.

	May Be Impacted	Will Not Be Affected		Specialist Signature/ Date
1.	[ ]	[✓]	Threatened or Endangered Species	David Mills 4/20/83; Dennis J. Willis 4/20/83
2.	[ ]	[✓]	Floodplains and Wetlands	[signature] 4/20/83
3.	[ ]	[✓]	Wilderness Values	[signature] 4/25/83
4.	[ ]	[✓]	Areas of Critical Environmental Concern	Sid Vogelpohl
5.	[ ]	[✓]	Visual Resource Management	[signature] 4/25/83
6.	[ ]	[✓]	Water Resources	[signature] 4/20/83
7.	[ ]	[✓]	Air Quality	[signature] 4/20/83
8.	[ ]	[✓]	Cultural or Historic Resources	Blaine G. Miller 4/20/83
9.	[ ]	[✓]	Paleontological Resources	Sid Vogelpohl
10.	[ ]	[✓]	Prime or Unique Farmlands	[signature]
11.	[ ]	[✓]	Wild and Scenic Rivers	[signature] 4/25/83

The above project has been analyzed for conformance with BLM plans and consistency with local government plans. Significant discrepancies are discussed in the body of the Environmental Assessment.

BLM Plan and date: Price River/Range Creek Coal Area URA/MFP Amendment - 1981

Local government plans and date: Zoning Ordinance - 1982

CHECKLIST FOR EA/TECH EXAM

EA No: UT-060-PR-83-37 Project TOWER RESOURCES' EMERGENCY COAL LEASE APPLICATION U-52341

TECHNICAL EXAMINATION OF PROSPECTIVE SURFACE EXPLORATION AND MINING OPERATIONS

This checklist is to be used to determine environmental factors, alternatives, and mitigation measures relevant to the proposed action to be discussed in the EA, and to insure compliance with the items listed in 43 CFR 23. See also BLM 3509 Manual, Surface Management Requirements for Exploration, Mining and Reclamation (Mineral Leasing Act); and 2805 Manual, Federal Agencies.

A. GENERAL PROVISIONS

Under 43 CFR 23.5, a technical examination must be done for operations pertaining to the discovery, development, surface mining, and onsite processing of minerals under permit, lease, or contract (except for coal, geothermal, oil, gas, or combined hydrocarbon leases). These regulations do not apply to operations under the general mining laws, Forest Service mineral materials, or minerals under non-Federal surface.

Yes	No	
[X]	[ ]	Surface lands must be owned by the U. S. Government for consideration under 43 CFR 23. Are surface lands under the jurisdiction of BLM? If No, whom? _____
[ ]	[ ]	If No, has the other agency or bureau been informed of the proposed action? (Date _____; By _____.)

B. PROSPECTIVE EFFECTS

The following items are required by 43 CFR 23.5(a) to be considered in connection with an application for surface exploration or mining operations. If applicable to the project, these items should be discussed under the appropriate sections on affected environment and environmental consequences in the EA.

Do the following items apply to this project?

Yes	No		
		1.	Need for preservation and protection of:
[ ]	[X]		a. Recreational values
[ ]	[X]		b. Scenic values
[ ]	[X]		c. Historic values
[ ]	[X]		d. Ecologic values
		2.	Control (mitigation) of:
[ ]	[✓]		a. Erosion
[ ]	[✓]		b. Flooding
[ ]	[✓]		c. Water pollution
[ ]	[X]	3.	Isolation of toxic materials
[ ]	[X]	4.	Prevention of air pollution
[ ]	[X]	5.	Reclamation (vegetation, soils replacement, etc.)

Yes	No		
[X]	[ ]	6.	Prevention of slides
[ ]	[X]	7.	Protection of fish and wildlife, and their habitat
[ ]	[X]	8.	Prevention of hazards to public health and safety
[X]	[ ]	9.	Topography
[ ]	[X]	10.	Climate
[ ]	[X]	11.	Surrounding land uses
[ ]	[X]	12.	Proximity to densly used areas
[ ]	[X]	13.	Other significant local conditions

C. PROTECTION REQUIREMENTS

Develop mitigating measures to protect relevant nonminerals resources and ensure proper reclamation of lands or waters affected, as per 43 CFR 23.5(b) and (c). Document in the stipulations attached to the Decision Record. These stipulations should be incorporated in the permit, lease, or contract upon acceptance by the applicant.

D. RESTRICTION OF OPERATIONS

If it is likely that site conditions within the area of operations could result in significant adverse impacts, as per 43 CFR 23.5(d) develop alternatives that prohibit or restrict operations on that part of the area. Discuss conditions and impacts under the appropriate sections on affected environment and environmental consequences.

Can operations be conducted to avoid:

Yes	No		
[X]	[ ]	1.	Rock slides or landslides which would be hazardous to human life or property?
[X]	[ ]	2.	Substantial deposition of sediment and silt into streams, lakes, or reservoirs?
[X]	[ ]	3.	Lowering water quality below standards established by the State water pollution control agency or by the Secretary of the Interior?
[X]	[ ]	4.	Lowering water quality, where the current water quality exceeds that required by established standards?
[ ]	[ ]		a. If No, has it been demonstrated to the State water pollution control agency and the BLM that this is necessary to economic and social development, and will not preclude assigned use of the water?
[X]	[ ]	5.	Destruction of key wildlife habitat or important scenic, historical, or other natural or cultural features?
			a. If No, What?_____

If any of the above are answered No, can the area of operations be modified to avoid the impact?_____

E. WATER QUALITY STANDARDS

If water quality will be adversely affected under questions D.3 or 4 above, no lease, permit or contract shall be completed until the Federal Water Pollution Control Administration finds the proposed operation would not be in violation of the Federal Water Pollution Control Act, as per 43 CFR 23.5(e).

Yes	No		
[ ]	[X]	1.	Will water quality be adversely affected (as per question D3 or 4)? If No, do not complete this section.
[ ]	[ ]	2.	If Yes, has the Federal Water Pollution Control Administration been contacted?
[ ]	[ ]	3.	If Yes, have they found that the proposed action would not be in violation of the Federal Water Pollution Control Act?
[ ]	[ ]	4.	If No, can the proposed action be mitigated to comply with the Act? How? _____
[ ]	[ ]	5.	If No, can the proposed action or area of operations be modified to comply with the Act? How? _____

F. DEPARTMENT OF TRANSPORTATION

23 U.S.C. 317, referenced in 43 CFR 23.5(f), has been revoked. See BLM Manual 2809, Federal Agencies; UT IM 83-106 dated February 8, 1983; and OAD 76-15, Change 3, dated July 6, 1979.

Prepared By:

Name	Title	Resources Assigned
JESSE PURVIS	HYDROLOGIST	WATER RESOURCES
DAVID MILLS	WILDLIFE BIOLOGIST	WILDLIFE
JAMES HENNA	RECREATION PLANNER	RECREATION/HISTORIC VALUES/SCENIC VALUES

To the best of my knowledge, this Technical Exam and the accompanying EA meet the requirements of 43 CFR 23.

Ted Vogelpohl GEOLOGIST — 4-20-83

Team Leader: Signature/Title — Date

1791/3400
EA UT-060-PR-82-10
(U-066)

UINTA-SOUTHWESTERN UTAH COAL REGION

SITE SPECIFIC ANALYSIS

HOFFMAN CREEK TRACT

JUNE 1982

MOAB DISTRICT
PRICE RIVER RESOURCE AREA

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I. INTRODUCTION

A. Purpose and Need for Action

Under the Federal coal leasing program, the Department of the Interior has combined major Federal coal management responsibilities into one unified program in order to:

1. Give the nation a greater assurance of being able to meet its national energy objectives;

2. Provide a means to promote a more desirable pattern of coal development with ample environmental protection;

3. Assure that State and local governments participate in decisions about where and when Federal coal production will take place; and

4. Increase competition in the western coal industry.

BLM directives indicate the need to offer Federal coal for lease in quantities responsive to demand for coal reserves according to the schedule agreed to by the Secretary of Interior. The second round of leasing in the Uinta-Southwestern Utah coal region calls for a lease sale in December 1983. The Assistant Secretary of Interior for Land and Water has selected a preliminary feasible leasing target of up to 2.1 billion tons of coal. In order to meet this goal, a proposal to lease and develop individual coal tracts or combinations of coal tracts will be analyzed in site specific analyses and a Regional Coal EIS. This site specific analysis assesses the impacts of leasing the Hoffman Creek Tract.

B. Authorizing Actions

Leasing and development would be under the authority of the following laws: The Mineral Leasing Act of February 25, 1920, as amended; the Federal Land Policy and Management Act (FLPMA) of 1976; the Surface Mining Control and Reclamation Act (SMCRA) of 1977; the Multiple Minerals Development Act of August 13, 1954; the Department of Energy Organization Act of August 4, 1977; Amendments Act of 1976, as amended; the Act of October 30, 1978 that further amended the Mineral Leasing Act of 1920; Title 43 CFR Parts 3400 and 2800; and Title 30 Parts 211 and 700.

The Federal agencies responsible for leasing and management of Federal coal are listed in the Final Environmental Statement on the Federal Coal Management Program on pages 1-18 through 1-36 (U. S. Department of the Interior, 1979).

The State and County responsibilities are listed on pages I-9, III-8 and III-12 of Part 1 of the Final Environmental Statement on the Development of Coal Resources in Central Utah (U. S. Department of the Interior, 1979).

II. PROPOSED ACTION AND ALTERNATIVES

A. Proposed Action

The proposed action is to lease the Hoffman Creek Tract which is composed of 120 acres of Federal coal reserves in the west-central part of the Book Cliffs coal field in Carbon County (Maps 1 and 2). The tract is a logical mining unit as defined by coal lease regulations (43 CFR 3400.0-5(cc)). The proposed action is summarized in Appendix 1.

1. Description of Tract

The Hoffman Creek Tract is located approximately 9 air miles northeast of Price, Utah. The legal description of the tract is presented below. The relationship of the tract to Federal coal ownership is indicated on map 3. ~~Both the surface and~~ The mineral estate of the tract ~~are~~ is owned by the Federal government. and the surface is private

T. 13 S., R. 11 E., SLM

Section 9, E½SW¼, SW¼SE¼.

Containing 120 acres.

The tract contains coal resources 4 or more feet thick in the Lower Sunnyside and Gilson seams of the Upper Cretaceous Blackhawk Formation. Dips are to the northeast at about 6 degrees. Faulting is not known to exist in this area. Burned coal is to be expected near the outcrop but information is not available confirming the presence or extent of a burned zone. Overburden ranges from 0 to over 800 feet for the Lower Sunnyside coal bed, which averages about 4.2 feet thick beneath a portion of the tract, apparently thinning to less than 4 feet in outcrop measurements to the south. The Gilson coal bed, occurring about 200 feet beneath the Lower Sunnyside bed, averages 7.2 feet in thickness. Analyses of coal samples taken from the vicinity of the tract indicates that the coal on the tract is of high volatile B bituminous rank with the following analyses.

Coal Bed	Moisture	Fixed Carbon	Volatile Matter	Ash	Sulfur	Btu
Lower Sunnyside	4.96%	50.89%	38.64%	5.51%	0.68%	12,376
Gilson	5.33%	52.47%	36.64%	5.56%	0.58%	12,463

The demonstrated reserve base for the tract is as follows. Coal recovery is expected to be 50 percent or 980,000 tons.

Coal Bed	Average Thickness (Feet)	Acres	Demonstrated Reserve Base
Lower Sunnyside	4.2	63	480,000
Gilson	7.2	114	1,480,000
		Total	1,960,000

2. Projected Scope of Development

The Hoffman Creek Tract encompasses the higher portion of a topographic projection along the escarpment of the Book Cliffs. Outcrops of the two coal seams occur on three sides of the tract (map 2). However, due to the limited reserves, the tract most logically would be mined from coal properties to the north or west. The tract is bordered on the west by a block of Federal coal lease (2,478 acres) currently being mined by Tower Resources; the company which expressed interest in the tract. Sunedco holds a Federal lease (320 acres) that shares a common corner with subject tract. Sunedco also owns the private coal (560 acres) adjacent to the northern and eastern borders of the tract. Coal on the State section to the south of the tract has been leased to two individuals; however, the coal reserves are not sufficient for a mining operations.

It is assumed that either Sunedco or Tower Resources would be the successful lessee. The mining of the tract would not necessarily occur within 10 years of lease issuance if the tract was obtained by Tower Resources since the company currently has sufficient reserves for 30 years. The tract would be mined sooner if obtained by Sunedco since their portals would logically be located in Coal Creek or Hoffman Creek Canyons which are adjacent to the tract. In either case, required surface facilities would be off-tract and would have been constructed regardless of the availability of the Hoffman Creek Tract. Therefore, the surface facilities will not be addressed in this report. Site specific assumptions used herein for the mine development scenario follow:

a. Due to extensive outcrop on or near the tract and the rugged topography, exploration would not occur on the tract.

b. Mining would be by underground methods from adjacent coal properties to the north or west having an annual production of 1 million tons. All surface facilities related to coal production would have been constructed regardless of the availability of subject tract and, as such, environmental impacts caused by those facilities would not be brought about by development of the Hoffman Creek Tract. These impacts will not be considered herein.

c. Mining of the tract would begin 5 years after lease issuance and would continue for 6.5 years. Annual production from the tract would total 150,000 tons for total recovery of 980,000 tons. A crew of 41 persons would be required (15 tons/day/person) to produce 625 tons daily. These persons would have been previously employed at the mining operation. Their employment would be extended 1 year.

d. Coal would be transported from the off-tract portal to a preparation plant and shipping facility by truck. These facilities would have been constructed regardless of the availability of subject tract. Commuting mine personnel would add 62 vehicles per day (VPD) to County Roads 6523 and 6524 from the Price-Wellington area. Service trucks would total six VPD from the same area. Coal truck trips would be 15 per day requiring two trucks. Use of the roads by miners, coal trucks and service trucks would be extended 1 year.

e. Annually, 26-unit train trips would be required based on 67-car trains at 85 tons per car. Coal would be consumed outside the Coal Region.

f. Acreage used for housing and infrastructure to support mine personnel would be 100 acres per 1,000 population.

g. Since surface facilities would not result from the leasing of the Hoffman Creek Tract, reclamation of associated disturbances would not be affected except that reclamation would be delayed for 1 year (assuming overall annual mine production of 1.0 million tons). This delay would not be significant and is not considered further.

3. Relationship to Nearby Developments

The Hoffman Creek Tract is located within the Book Cliffs coal field from which production has occurred since the late 1800s. Currently five companies are producing from the field of which Tower Resources' Centennial Project lies immediately to the west. This project will reach full production of 1.2 million tons within several years. Soldier Creek Coal Company's mine is located 4 miles east of subject tract. Sunedco, holds coal properties in addition to those mentioned above for which a mine plan to produce 3.2 million tons annually should be approved in the near future. This Sunedco property lies 5 miles to the east.

County Roads 6523 and 6524 extend from U. S. Highway 6 to within 0.5 miles of the tract. The same road continues further up Coal Creek Canyon as a private road approaching the tract to within 0.3 miles. The road, powerlines and phone lines continue up to canyon to the Knight-Ideal mine which was closed in 1965. This road would provide access to a mine operation on the Sunedco property and also, possibly, to the Coal Creek Tract. County Road 6523 provides access to residential areas; however, 6524 receives very little use.

Mine employees for Tower Resources and Soldier Creek are principally from the Price-Wellington area. One-way commuting distances average 13 to 18 miles for both mines.

4. Relationship to Land Use Planning

A land use plan was completed in 1981 for the Price River/Range Creek Coal Area. The Hoffman Creek Tract was included in the planning effort specifically to consider the unsuitability criteria. That portion within the land use plan was found acceptable for further consideration for leasing.

The Price River/Range Creek Coal Area land use plan calls for leasing of additional Federal coal in the Coal Area. Public involvement included announcements in the Federal Register and local papers of the availability of a draft brochure summarizing the preliminary results of the planning effort and a public meeting. Draft and final brochures were mailed to parties presumed to have an interest in the plan and to those parties requesting copies. Planning results are summarized in Appendix 2.

Carbon County's zoning ordinance has classified all nonindustrial areas behind the Book Cliffs as Critical Environmental Zones. Based on consultations with the County Commissioners, the County does not desire that these lands not be further considered for leasing. The primary purpose of the zoning restrictions is to allow the County a voice in future mining operations.

5. Mitigating Measures Included as Part of the Action

If leased, the successful lessee will have to comply with all Federal, State, and local regulations, laws and policies that affect the leasing and development of coal. Some of the primary laws governing the leasing and development of Federal coal are: Mineral Leasing Act of 1920 as amended; Federal Coal Leasing Amendments Act of 1976; and Surface Mining Control Land Reclamation Act of 1977. In addition to the laws governing coal development, several laws provide the basis for resource management and protection on public lands. These are the Federal Land Policy Management Act of 1976 (90 Stat. 2743; U.S.C. 1701-1771) and Multiple Use-Sustained Yield Act of June 12, 1960 (74 Stat. 215; U.S.C. 528-531).

These laws are implemented by the Bureau of Land Management (BLM), the Minerals Management Service (MMS), and the Office of Surface ~~Management~~ Mining (OSM), under the following regulations:

Title 43 CFR Part 3400 provides procedures for leasing and subsequent management of Federal coal deposits.

Title 43 CFR Part 2800 establishes procedures for issuing rights-of-way to individuals or companies on public lands.

Title 30 CFR Part 211 governs operations for exploration, testing, development, and recovery of Federal coal pursuant to 43 CFR Part 3400. The purpose of the regulations in Part 211 is to promote orderly and efficient operations and production practices without waste or avoidable loss of coal or other minerals; to encourage maximum use of coal resources.

~~Title 30 CFR Part 700~~ requires coal mining operations to restore the lands affected to a condition of capable of supporting reasonable and likely uses. Mining and reclamation plans would not be approved unless the applicant has demonstrated that reclamation to the proposed post mining land use can be accomplished under the mining and reclamation plan.

For a more complete and detailed listing of laws affecting coal leasing and development and implementing agencies, see the Final Environmental Statement on the Federal Coal Management Program (p. 1-15 through 1-23).

6. Further Environmental Assessment Points

Prior to coal exploration under a Federal lease, the lessee or operator is required to submit an exploration plan to MMS for approval. MMS would consult with the BLM and field inspections would be conducted. The impacts of the proposed exploration would be considered in an environmental assessment and mitigating measures developed. Exploration is not expected to occur on subject tract.

Prior to commencement of any mining operations, the lessee or operator would be required to submit a permit application to OSM that includes both a resource recovery and protection plan and a reclamation plan. The resource recovery and protection plan must be submitted within 3 years of the effective date of the lease (30 CFR 211.10). Environmental assessments of permit applications are accomplished by OSM prior to permit approval. Additional environmental assessments for rights-of-way or special land use permits associated with ancillary facilities may be required of the surface managing agency before the development of Federal coal on this tract.

7. Reclamation Potential

Surface disturbing activities would not result from tract development. Reclamation would not be necessary.

8. Environmental and Socioeconomic Consequences

Impacts to the environment and socioeconomics are presented in Appendix 3.

B. Alternative - No Action

This alternative is addressed in the Impact Matrices (Appendix 3).

III. CONSULTATION AND COORDINATION

Burnett, K., 1982, Southeastern Utah Association of Local Governments, Personal Communications with Bob Milton, Economist, Moab District, BLM.

Carbon County Commissioners, 1981 and 1982, consulted in regards to land use planning and specific coal tracts.

U. S. Fish and Wildlife Service, 1981 and 1982, consulted in regards to Unsuitability Criteria (wildlife).

Utah Division of State History, 1981 and 1982, consulted in regards to Unsuitability Criterion 7.

Utah Division of Wildlife Resources, 1981 and 1982, consulted in regards to Unsuitability Criteria (wildlife).

Vance, A., 1982, Minerals Management Service, Personal Communications with Sid Vogelpohl, Moab District, BLM.

IV. PARTICIPATING STAFF (BLM)

Jeff Carroll	Wildlife Biologist	Wildlife
Lee Chamberlain	Range Conservationist	Vegetation
Dave Hansen	Soil Scientist	Soils
Ann Lambertsen	Clerk/Stenographer	Typist
Blaine Miller	Archaeologist	Archaeology
Bob Milton	Regional Economist	Socioeconomics
Jesse Purvis	Hydrologist	Hydrology
Neil Simmons	Geologist	Geology/Minerals
Bob Talley	Landscape Architect	Recreation/VRM
Sid Vogelpohl	Geologist	Team Leader

REFERENCES

Cramer, H. E., et al, 1978, Calculated Visibility Impacts of the Proposed Emery Power Plant Expansion: H. E. Cramer Company, Salt Lake City, Utah.

Holzworth, G. C., 1972, Mixing Heights, Wind Speed and Potential for Urban Air Pollution throughout the Contiguous United States, E.P.A. Research Triangle Park, North Carolina.

Radian, 1981, Regional Air Quality and Visibility for the Uinta-SW Utah Coal Region; Radian Corporation, Austin, Texas.

Robison, S., 1977, Paleontological Inventory of Existing Data for Moab District, BLM.

U. S. Department of Agriculture, 1980, Soil Survey of Range Creek Portion of Carbon Area, Carbon County, Utah: B.L.M.

U. S. Department of the Interior, 1979, Central Utah Coal E.I.S.: U. S. Geological Survey.

U. S. Department of the Interior, 1981, Uinta-Southwestern Utah E.I.S. (Coal): B.L.M.

APPENDIX 1

Coal Economics Summary

I. TRACT DESCRIPTORS

A. Legal Description

T. 13 S., R. 11 E., SLM

Section 9: E½SW¼, SW¼SE¼

B. Acreage

120 acres

C. Surface Ownership

Entirely private

II. COAL DATA

A. In-Place Resource

1.96 million short tons (two seams)

B. Recoverable Reserve

0.98 million short tons

C. Rank

Bituminous; high volatile bituminous

D. Analyses

Coal Bed	Moisture	Fixed Carbon	Volatile Matter	Ash	Sulfur	Btu
Lower Sunnyside	4.96%	50.89%	38.64%	5.51%	0.68%	12,376
Gilson	5.33%	52.47%	36.64%	5.56%	0.58%	12,463

III. MINING CONSIDERATIONS

A. Mining Method

Underground continuous-room and pillar

B. Annual Production

150,000 tons

C. Mine Life

Tract would be mined over 6.5 years as part of a much larger adjacent mine property. This mine property's life would be extended 1 year by mining the tract assuming the mine produces 1 million tons annually.

D. Exploration

None

E. Mining Considerations

1. See "C" above. All required surface facilities would be off-tract and would have been constructed regardless of availability of subject coal tract.

2. A crew of 41 persons, previously employed at the mine, for 6.5 years to mine the tract.

3. Coal would be trucked to existing preparation/shipping facilities requiring two previously employed truck drivers.

4. Annually (for 6.5 years), 26-unit train trips would be required based on 67-car trains at 85 tons per car. Coal would be consumed outside the Coal Region.

III. OTHER CONSIDERATIONS

A. Hoffman Creek Tract is not large enough for a separate mining operation. Although not leasing the tract in this lease cycle would not result in a by-pass situation, this concern would need to be addressed in future lease cycles as adjacent coal properties are developed.

B. Coal consumption outside the Coal Region.

APPENDIX 2 - PART A

Planning Results
Price River/Range Creek Coal Area
Unsuitability Criteria

Unsuitability Criteria	Applicability to Tract	Exemption/Exception	Data Reliability/Needs
#1 - Federal Lands Systems and Towns	Not Applicable	---	Excellent
#2 - Rights-of-Way on Federal Surface	Not Applicable	---	Excellent
#3 - Public Improvements	Not Applicable	---	Excellent
#4 - Wilderness Study Areas	Not Applicable	---	Excellent
#5 - Class I Scenic Area	Not Applicable	---	Excellent
#6 - Lands for Scientific Study	Not Applicable	---	Excellent
#7 - National Register of Historic Places	Not Applicable	---	Excellent
#8 - Natural Areas	Not Applicable	---	Excellent
#9 - Federal Threatened/Endangered Species	Not Applicable	---	Satisfactory
#10 - State Threatened/Endangered Species	Not Applicable	---	Excellent
#11 - Eagle Nests	Not Applicable	---	Excellent
#12 - Eagle/Roost/Concentration Area	Not Applicable	---	Excellent

Unsuitability Criteria	Applicability to Tract	Exemption/Exception	Data Reliability/Needs
#13 - Falcon Nests	Not Applicable	---	Excellent
#14 - Migratory Birds	Not Applied (see below)	---	Unsatisfactory
	Unsuitability Criterion 14: Data to clearly identify utilization of the tract by migratory bird species of high Federal interest on a regional or national level is not available (except for eagles and falcons). Necessary on-the-ground surveys will be accomplished prior to mine permit approval.		
#15 - Resident Species	Not Applicable	---	Excellent
#16 - Floodplains	Not Applicable	---	Excellent
#17 - Municipal Watersheds	Not Applicable	---	Excellent
#18 - National Resource Waters	Not Applicable	---	Excellent
#19 - Alluvial Valley Floors	Not Applicable	---	Satisfactory
#20 - State Criteria	Not Applicable	---	Excellent

APPENDIX 2 - PART B

Planning Results
Price River/Range Creek Coal Area
Multiple Use Analysis

A. Air Quality

1. Conflict

Increased particulate emissions from mining activities and increased population. Increased gaseous emissions associated with population growth.

2. Decision

Coal leases and mine permit approval will be conditioned on laws and regulations designed to protect the air resource; i.e., 30 CFR 817.95 and PL ~~94-579;~~ 95-95, as amended, Section 302(c).

B. Minerals

1. Conflict

Interests of the coal and oil/gas lessee could conflict.

2. Decision

Development of oil and gas leases and coal leases should be simultaneously allowed where the development of one does not significantly affect the development of the other. However, when only one development may occur, coal development should be favored, since oil and gas reserves have not been proven.

C. Range Management

1. Conflict

Road dust, particularly from coal haul roads, settles on vegetation for many yards on either side of the road. This makes the forage less desirable to livestock and can cause dental abscesses and dust pneumonia.

2. Decision

Roads used on a daily basis will be treated to minimize airborne dust as required by State and Federal regulations.

3. Conflict

Loss of livestock water due to diversion for other use, contamination or subsidence will adversely affect forage utilization and livestock distribution and production.

4. Decision

Lost water sources will be replaced by the mine operator by developing other natural water or providing artificial sources in accordance with 30 CFR 817.54.

D. Wildlife Habitat

1. Conflict

Mining can cause disruption or loss of perennial and intermittent springs. This can affect distribution of wildlife species dependent on free water. Small sedentary wildlife species are impacted most severely, as they may not be mobil enough to move to other water sources. Displaced individuals may be lost if adjacent habitats are filled to capacity.

2. Decision

The mine operators shall identify all perennial and intermittent springs and monitor same before mine development and during mine life. Disrupted springs will be replaced with permanent artificial waters by the operator (30 CFR 817.54).

E. Recreation

1. Conflict

Dispersed recreation values exist on or adjacent to the tract which are accessible to the public. These values include sightseeing, hunting, camping, backpacking, hiking and horseback travel. Most of these activities rely on continued public access across and to public lands.

2. Decision

Protect extensive recreation values by requiring mining plans to show that surface facilities associated with underground mining would be placed to minimize impacts on recreation values.

F. Cultural Resources

1. Conflict

Deterioration of cultural sites will continue from indirect impacts, such as, vandalism of sites.

2. Decision

Energy related projects shall not be approved prior to completion and approval of a cultural clearance; as required by Federal statutes and regulations. Documentation of site vandalism shall be accomplished and legal proceedings initiated when available information warrant same.

APPENDIX 3

Impact Matrix: Part A - The Natural Environment

Elements	Present Situation[a]	Anticipated Effect of Phases of Development[b]	Mitigation Measures Not Included in the Proposed Action	Significance of Anticipated Impact	Future Environment Without Development
AIR QUALITY 1. Total Suspended Particulates	Price (1977) Annual geometric mean of 62 ug/m^3 at Price (103 percent of NAAQS). Violation of TSP standards relate to dust blown by strong winds.	Contribution to 24-hour TSP concentrations from mine haul roads. Standards would not be exceeded adjacent to haul roads. Dust would settle quickly.	None	Chemical treatment or paving of haul roads would reduce TSP by 50 to 92 percent.	Dust from hauling coal would be reduced as resulting 1-year reduction in mine life.
2. Sulfur dioxide	Price (1975) Annual average - 13 ug/m^3 (16% NAAQS) Maximum 24-hour - 53 ug/m^3 (15% NAAQS) Maximum 3-hour - 160 ug/m^3 (12% NAAQS)	Population and transportation extension for 5 years associated with mining of tract would have a negligible impact regionally. Radian (1981) determined that leasing over 560 million tons of coal in the Emery and Wasatch coal fields would have small effect on SO_2 levels.	None	Not significant, within standards	Levels only very slightly lower. However, increases will result from increasing populations and industrial activity
3. Nitrogen Dioxide	Huntington (1971) Annual average - 17 ug/m^3 (17% NAAQS)	Population and transportation extension for 5 years associated with mining of	None	Not significant, within standards	See above

Elements	Present Situation[a]	Anticipated Effect of Phases of Development[b]	Mitigation Measures Not Included in the Proposed Action	Significance of Anticipated Impact	Future Environment Without Development
Nitrogen Dioxide (Continued)	- other locations lower	tract would have a negligible impact regionally. Radian (1981) determined that leasing over 560 million tons of coal in the Emery and Wasatch coal fields would have small effect on NO_2 levels.			
4. Hydrocarbons	Monitoring not accomplished - low concentrations expected	Coal would not be burned in the Coal Region. The automobile use extension resulting from mining of the tract would not have any effect on existing concentrations.	None	Not significant, within standards	See above
5. Ozone	Price (1975) - within standards	The population extension for 5 years resulting from mining of tract compared to existing populations is insignificant. Measurable oxidant increases would not occur.	None	Not significant, within standards	See above

Elements	Present Situation[a]	Anticipated Effect of Phases of Development[b]	Mitigation Measures Not Included in the Proposed Action	Significance of Anticipated Impact	Future Environment Without Development
6. Carbon Monoxide	Data not available - within standards and assumed to be low	Measurable increases of this urban pollutant would not occur.	None	Not significant, within standards	See above
7. P.S.D. Class	II	Not Applicable	Not Applicable	Not Applicable	Not Applicable
8. Nonattainment Areas	None in affected area	Not Applicable	Not Applicable	Not Applicable	Not Applicable
9. Air Quality Maintenance Area	None in affected area	Not Applicable	Not Applicable	Not Applicable	Not Applicable
10. Visibility	Cedar Mountain (1976) - average visual range of 96 miles with standard deviation of 14 miles, Huntington (1970) average range of 67 miles[d]	Visibility affected by dust from roads and coal handling on localized bases with no affect 1 mile downwind of source. Mined coal would be consumed outside the Coal Region.	None	Dust airborne as a result of road use and coal handling would have a local impact (within 1 mile downwind) of low to moderate significance. Dust would quickly settle.	Additional power plants, a coal gassification plant and a nuclear generating complex are being considered in the region. Increased coal production is expected. Decrease in visibility is anticipated.
11. Major Pollution Sources	Three coal powerplants - Carbon - 9 miles northwest of Price	Not Applicable	Not Applicable	Not Applicable	See above

Elements	Present Situation[a]	Anticipated Effect of Phases of Development[b]	Mitigation Measures Not Included in the Proposed Action	Significance of Anticipated Impact	Future Environment Without Development
Major Pollution (Continued)	- Huntington - 21 miles southwest of Price - Emery - 31 miles southwest of Price				
12. Air Flow Patterns	Fall, winter, early spring - 3 to 5 m.p.h. from north to northwest. Late spring/summer - 8 to 12 m.p.h. from south-southeast. Diurnal shifting of winds along Book Cliffs (down at night; up during day)	Not Applicable	Not Applicable	Not Applicable	Not Applicable
13. Precipitation	Average of 16 inches	Not Applicable	Not Applicable	Not Applicable	Not Applicable
AIR STAGNATION	Upper Colorado River Air Shed-episodes of 2 days or longer occurred an average of 21 days between October-February, 1949-1956. The visual result (smog) is rarely evident in the Book Cliffs area.[e]	Not Applicable	Not Applicable	Not Applicable	Pollution resulting from air stagnation will increase with population and industrial activity.

Elements	Present Situation[a]	Anticipated Effect of Phases of Development[b]	Mitigation Measures Not Included in the Proposed Action	Significance of Anticipated Impact	Future Environment Without Development
TOPOGRAPHY	Tract encompasses the higher portion of a topographic projection along the escarpment of the Book Cliffs. Elevations vary from 6,880 to 7,950 feet. Slopes are from vertical to sloping (see Map 2).	1. None	1. None	None	No change
		2. None	2. None	None	No change
		3. Maximum potential subsidence of 8 feet (70 percent). Steep slopes could become less stable.	3. Disallow mining too near escarpments to prevent significant rock slides or fracturing at the surface.	Historically, subsidence has not been visually noticeable. Effect negligible.	No change
		4. None	4. None	None	No change
GEOLOGY	Plateau is based on Flagstaff Formation of Tertiary period which dips to the north at 7 degrees. Other formations are the Cretaceous Blackhawk and Price River Formations. Faults are not known.	Effects are inherent to development and relate to disruption of rock strata and surficial deposits.	Effects cannot be mitigated.	Low - for scientific uses without mining because of depth of burial.	No change
PALEONTOLOGY	Blackhawk - turtle, clam, snail, dinosaur and crocodile fossils.	Unknown type and number of fossils destroyed by mining. Potential for discovery of otherwise unavailable fossils.	Significant fossil finds should be recovered for scientific value	Unknown; however, fossils, in most cases, would not be available	No change

Elements	Present Situation[a]	Anticipated Effect of Phases of Development[b]	Mitigation Measures Not Included in the Proposed Action	Significance of Anticipated Impact	Future Environment Without Development
MINERALS	Coal - see Coal Economics Matrix	Tract development would result in loss of coal (1.96 million tons) for future development.	None	1.96 million tons of coal not available for future consumption.	Land available for oil/gas exploration unhampered by coal mining.
	Oil/Gas - Potential for development. No wells on or near tract. Nearest KGS is 12 miles south.	Oil/gas development may be hampered by underground mining. Effect unknown since area has not been sufficiently drilled to determine potential.	Problems that arise will be resolved by Minerals Management Service or State Oil/Gas.	Unknown since rate of development, if any, and success cannot be determined.	
SOILS	No impact	None	None	None	No change
SURFACE WATER					
Occurrence	Limited to runoff from storms. No major drainages.	Possible diversion to subsurface as result of subsidnece. Water consumption (3 acre-feet annually for mining 6.5 years and 27 acre-feet for people extended 1 year) from mine, wells or commercial sources.	None	Low due to the scarcity of surface water and existing procedures to protect same in approval of mine plans. Water diverted underground would add to the subsurface supply or become available for mining purposes.	No change

Elements	Present Situation[a]	Anticipated Effect of Phases of Development[b]	Mitigation Measures Not Included in the Proposed Action	Significance of Anticipated Impact	Future Environment Without Development
Quantity	Annual precipitation is 16 inches. Annual water yield is 1 to 2 inches. Surface runoff only.	Effect limited to potential water loss of water to the subsurface due to subsidence resulting from mining. Consumption of 3 acre-feet of water annually for 6.5 years of mining and the extension of 27 acre-feet being used by people for 1 year from the mine, wells and commercial sources.	None	Low - Water that may be lost from the surface would add to the subsurface supply or spring flow or become available for mine use.	No change
Quality	Surface runoff only.	None	None	None	No change
Salinity of Receiving Waters (Green River)	Severe salinity problems. Soils and formations of tract not of saline character.	None	None	None	Present conditions would continue. Increased salinity can be expected.
Importance to Livestock and Wildlife	Livestock and wildlife water from surface sources. The one spring is not available for livestock use.	None	None	None	No change

Elements	Present Situation[a]	Anticipated Effect of Phases of Development[b]	Mitigation Measures Not Included in the Proposed Action	Significance of Anticipated Impact	Future Environment Without Development
Importance to Agriculture	None	None	None	None	No change
Importance to People	None	None	None	None	No change
Erosion and Sedimentation	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
GROUND WATER Occurrence	Groundwater not expected in or above coal seams due to nearness of outcrop and strata dip.	None	None	None	No change
Quantity	None	None	None	None	No change
Quality	None	None	None	None	No change
Importance for Livestock and Wildlife	None	None	None	None	No change
Importance for Agriculture	None	None	None	None	No change

Elements	Present Situation[a]	Anticipated Effect of Phases of Development[b]	Mitigation Measures Not Included in the Proposed Action	Significance of Anticipated Impact	Future Environment Without Development
Importance for People	None	None	None	None	No change
VEGETATION	No impact	None	None	None	No change
WILDLIFE	No impact	None	None	None	No change
CULTURAL RESOURCES	Cultural surveys of the tract have not been conducted. Probable site density between 0-24 per square mile and will be temporary camps or lithic scatters of little significance.[g] Along cliff faces, rock shelters and other shelters with potential burial shelters and considerably lower density will probably be located. Many sites are probably being vandalized; however, cannot be quantified. Historical sites are not recorded.	None	None	None	As population increases, impacts to cultural resources by unknown destruction and vandalism will occur. Available knowledge will increase.

Elements	Present Situation[a]	Anticipated Effect of Phases of Development[b]	Mitigation Measures Not Included in the Proposed Action	Significance of Anticipated Impact	Future Environment Without Development
VISUAL RESOURCE MANAGEMENT (VRM)	No impact	None	None	None	No change
WILDERNESS	Area of tract was considered for wilderness characteristics, but was dropped because of land ownership and intrusions.	Not Applicable	Not Applicable	Not Applicable	Not Applicable
NOISE	Other than natural noise, noise is created by travel of passenger vehicles on nearby roads, the occasional recreationist and aircraft.	Coal trucks and other vehicles would provide intermittent noise for an additional year.	None	Coal trucks and other noises are innate to a coal mining operation.	No change
SPECIAL DESIGNATION AREAS	None	Not Applicable	Not Applicable	Not Applicable	Not Applicable
LAND USES Recreation	Use not extensive; however, includes sightseeing, picnicking, and hunting. Public access to vicinity of tract is	Access could be restricted by the mine operation. Surrounding areas offer comparable values. Increased	None	Available access may be blocked.	Available access may be blocked.

Elements	Present Situation[a]	Anticipated Effect of Phases of Development[b]	Mitigation Measures Not Included in the Proposed Action	Significance of Anticipated Impact	Future Environment Without Development
Recreation (Continued)	currently easy. Visitor use is 100/ year.	population would find ample dispersed recreational opportunities in the area.			
Grazing	No impact	None	None	None	No change

[a] U. S. Department of the Interior (1981); [b] Phases of Development: 1. Exploration, 2. Construction, 3. Mining, 4. Reclamation; [c] Cramer, et al (1978); [d] U. S. Department of the Interior (1979); [e] Holzworth (1972); [f] Hauck (1979); [g] Nielson, et al (1981)

APPENDIX 3

Impact Matrix: Part B - Socioeconomics

Elements	Present Situation	Anticipated Effect of Phases of Development	Mitigation Measures Not Included in the Proposed Action	Significance of Anticipated Impact	Future Environment Without Development
POPULATION	Carbon County - 22,179 (1980) Price City - 9,086 (1980) Wellington - 1,406 (1980). Growth in County - 1970-1980 (42 percent increase) Mining is the largest employer (26 percent) and income generator (35 percent).	Employment of 43 persons extended 1 year. No significant impact.	None	None	No change
ECONOMICS	Low unemployment (5.1 percent). High miner's wages tend to deplete the job force and inflate nonminer wages.	No significant impact.	None	Low	No change
PUBLIC FINANCE	No impact	None	None	None	No change

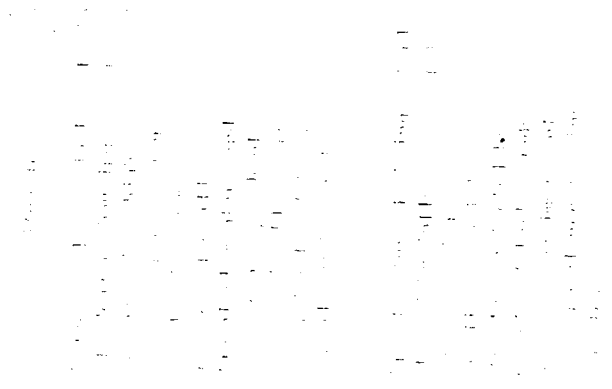
Elements	Present Situation	Anticipated Effect of Phases of Development	Mitigation Measures Not Included in the Proposed Action	Significance of Anticipated Impact	Future Environment Without Development
INFRASTRUCTURE	Major problem is lack of adequate housing compounded by high interest rates. Ten mobile classrooms are in use. Two additional elementary and one secondary school is needed. Plans are being developed for an expanded water system.	Employment of 43 persons extended for 1 year.	None	None	No change
CULTURE AND WELL-BEING	Age structure is being altered by influx of younger workers and families. Social structure affected by variety of backgrounds accompanying immigrants. Local populance is mine oriented.	Employment of 43 persons extended for 1 year.	None	None	No change

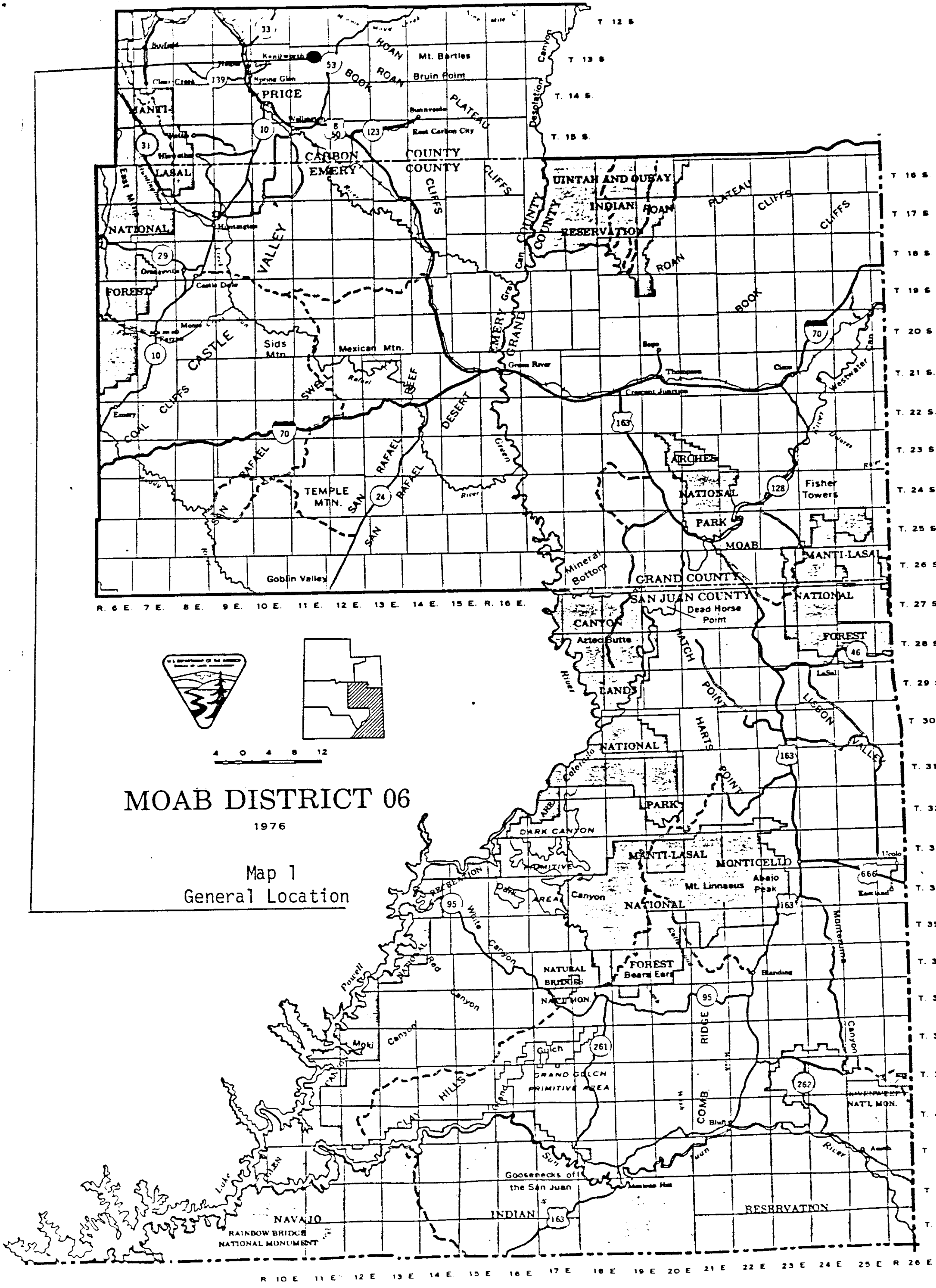
APPENDIX 4

Map 1 - General Location

Map 2 - Topographic Features

Map 3 - Coal Ownership and Status of Federal Coal





MOAB DISTRICT 06

1976

Map 1
General Location

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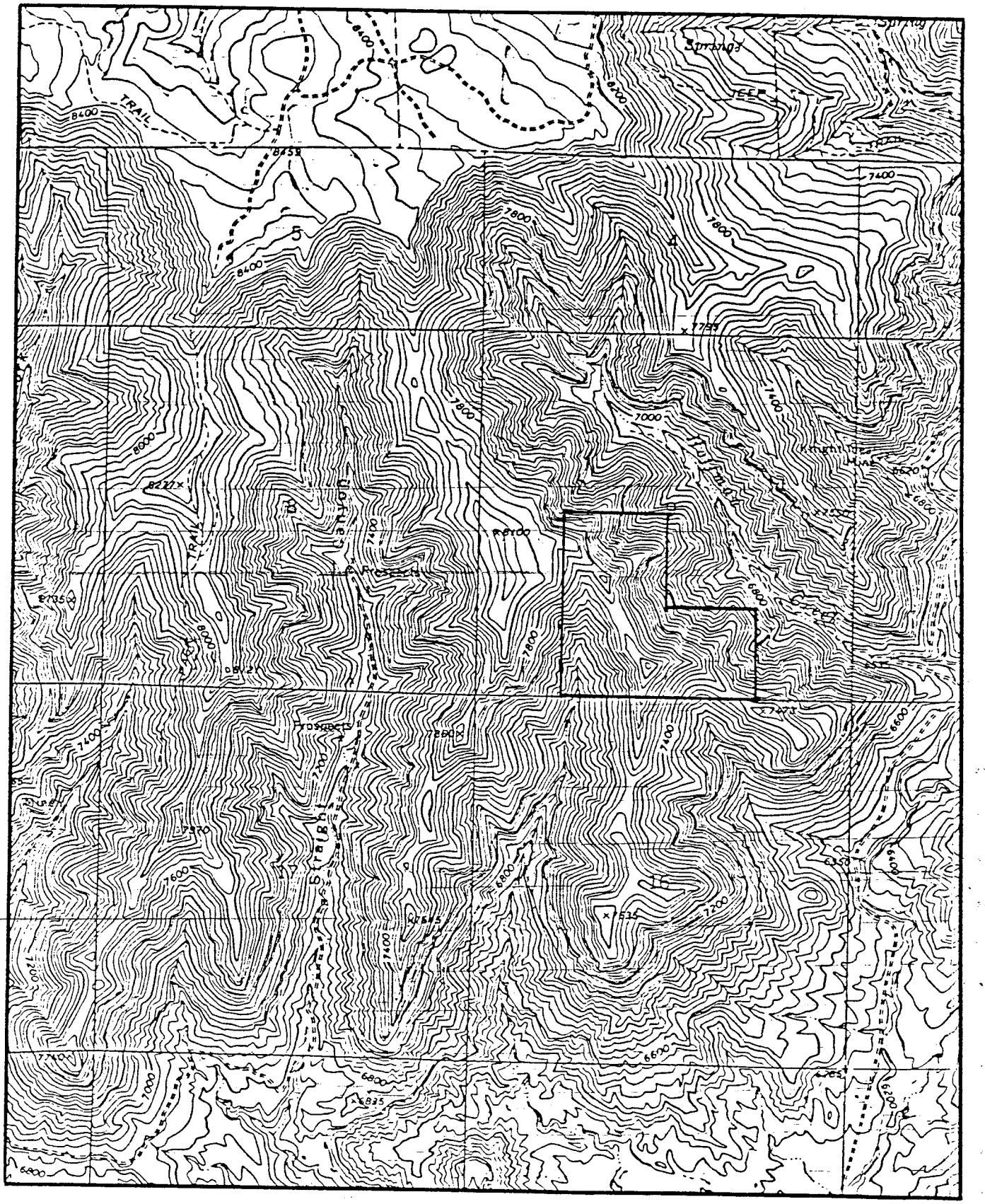
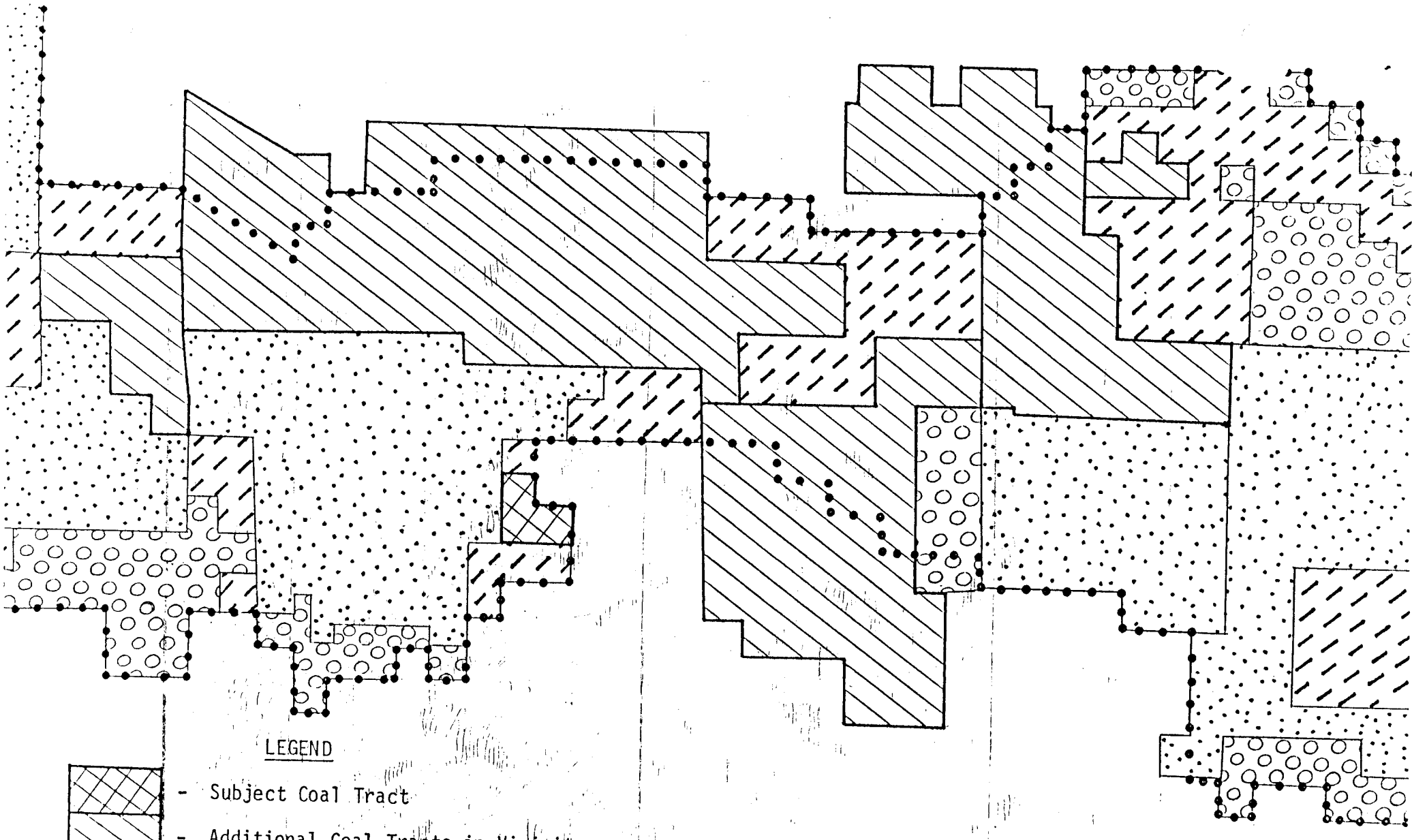


Map 2 Topographic Features



Map 3. Coal Ownership and Status of Federal Coal

ENVIRONMENTAL ASSESSMENT COVER SHEET

Project Name AMCA Coal Leasing Inc. Intensity of Analysis Medium

Office Price River Resource Area EA Register No. UT-060-PR-81-11

Action Lease Modification File Code 1791/3400

Location T. 13 S., R. 11 E. Serial No. SL-027304, SL-063058, U-010581

Required by 43 CFR 23: /X/ Yes / / No

Prepared by	Title	Resource(s) Assigned
Joe Cresto	Wildlife Biologist	Vegetation and Wildlife
Gary Gaillot	Hydrologist	Hydrology
Ann Lambertsen	Clerk-Stenographer	Typist
Mark Mackiewicz	Realty Specialist	Soils
Blaine Miller	Archeologist	Cultural Resources
Robert Milton	Regional Economist	Economics, Recreation
Sid Vogelpohl	Geologist	Geology, Minerals
Dennis Willis	Range Conservationist	Vegetation, Grazing

Compliance responsibility assigned to: _____
(Name and Title)

	Signature	Date
* Area Manager	Lee E. Boggess	5/21/81
** District Manager		

* Signature will be required on all EA's
** Will sign off on all high-level EA's

1791/3400
SL-027304
SL-063058
U-010581
(U-066)

DECISION RECORD/RATIONALE
COAL LEASE MODIFICATION APPLICATIONS
AMCA COAL LEASING, INC.
EAR NO. UT-060-PR-81-11

DECISION: The attached Environmental Assessment/Technical Examination (EA/TE) satisfactorily considers the environmental impacts of modifying Federal coal leases SL-027304, SL-063058 and U-010581, held by AMCA Coal Leasing, Inc., by the total addition of 435.91 acres. The modifications are recommended for timely approval with the attachment of those stipulations presented in the EA/TE.

RATIONALE: Coal underlying the modification area would be mined from existing or proposed underground mines that make up the Centennial Project of Tower Resources, Inc. Mining of the modification areas would result in the recovery of 3.2 million tons of coal without requiring additional surface disturbance or increased annual production. Project life would be extended by 3 years to 33 years. Coal reserves of the modification areas cannot be economically mined except as an expansion of the Centennial Project. Timely approval of the applications is recommended so that mine plans may be amended to allow for logical mine development. Mining has commenced in fee coal adjacent to the modification application for SL-027304.

ENVIRONMENTAL STATEMENT: Lease modification is a standard form of noncompetitive leasing and, in this case, would not be a major Federal action having significant impacts on the environment. Public notification of the proposed modifications was provided through publication in a local newspaper without public response. Irreversible and irretrievable commitment of resources would include coal consumed as a result of mining and coal lost because of unrecoverability. Preparation of an environmental impact statement is not recommended.

Ivan E. Bridges
Area Manager, Price River Resource Area

5/21/81
Date

District Manager, Moab

Date

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I. INTRODUCTION

A. Background

AMCA Coal Leasing, Inc., a branch of Tower Resources, Inc., has filed applications to modify three existing Federal coal leases in Carbon County, Utah. Their existing property, about 10 air miles north-northeast of Price, Utah, contains 2,242.39 acres, of which 2,042.39 acres are leased Federal coal and 200 acres are leased private coal. The lease modification applications are for a total addition of 435.91 acres. Legal descriptions of the areas under lease and modification application are given in Appendix I. The location of Tower Resources' property is indicated on Figure 1 and the spatial relationship of leases and modification applications is shown by Figure 2.

Tower Resources' began coal mining operations of their Centennial Project by opening the Pinnacle Mine in October, 1980 on the 200-acre tract of private coal. Project production is projected at 200,000 tons for the first year and 600,000 for the second year. By the fourth or fifth year, full production of 1.2 million tons is anticipated. Estimated project life is 28 to 30 years. An estimated 150 employees will be necessary at full production. Coal reserves of the project area are classified as high-volatile A and B bituminous.

Existing facilities are limited to road access and power and telephone lines to the Pinnacle Mine and other facilities in the portal area necessary for underground coal production. Run-of-mine coal is trucked about 20 miles to a train loadout. Project plans call for additional mines, new shipping facilities and, possibly, a coal preparation plant. Detailed plans for proposed facilities are not currently available.

The Pinnacle Mine is being operated under a mine plan approved by the Utah Division of Oil, Gas and Mining. A mine plan for the mining of Federal leases through the Pinnacle Mine is currently being reviewed for completeness by Federal and State agencies. Addendums to the plan is expected in the near future for two additional mines.

Of the 435.96-acre application area, 260 acres lie outside the Book Cliffs Known Recoverable Coal Resource Area (KRCRA). Of the 185.96 acres within the KRCRA, 80 acres have been designated in current land use planning efforts as having high potential for development (part of U-01058) with the remainder having low potential (part of SL-027304).

The U. S. Geological Service is modifying the KRCRA to include those portions of the lease modification area now outside the KRCRA.

B. Adjoining Land Use

The application area is within the Book Cliffs coal field. Coal production is the most important land use in regards to economic stimulus to the Carbon County area. Mining began in the field in the late 1800's with the health of the coal industry, up to the present, fluctuating in response to the

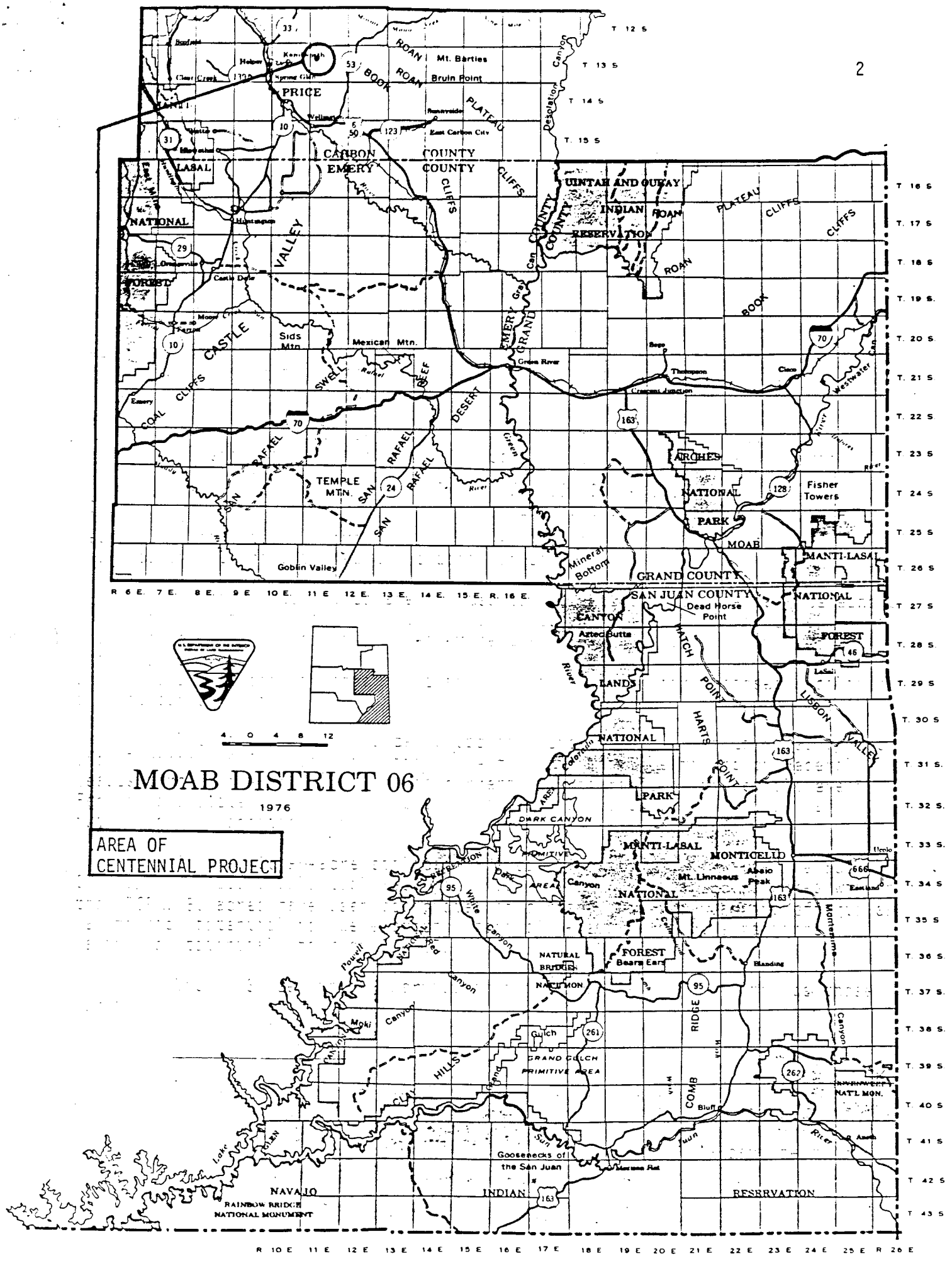

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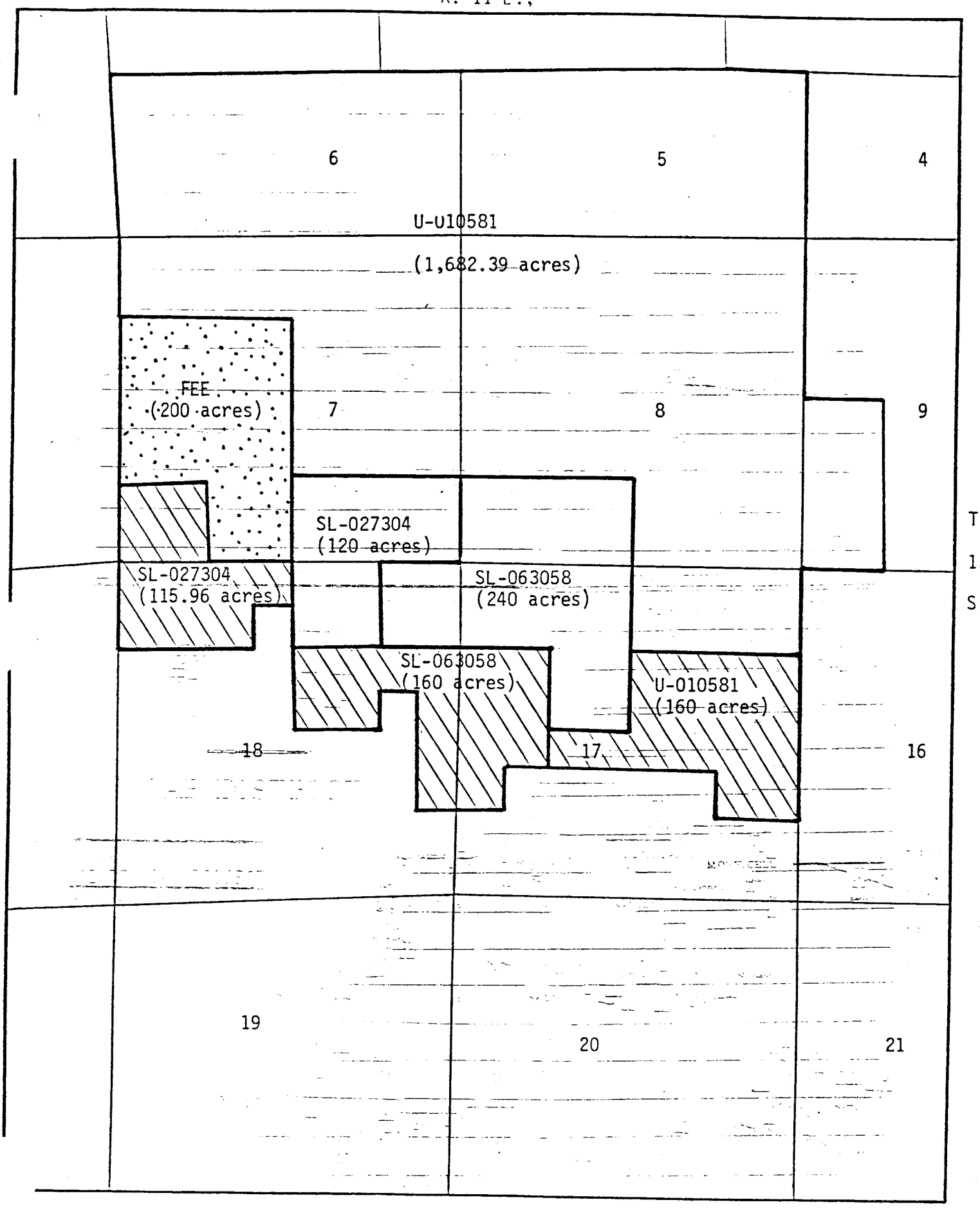
FIGURE 1


R. 11 E.,
6
5
4
U-U10581
(1,682.39 acres)
FEE
(200 acres)
7
8
9
SL-027304
(120 acres)
SL-027304
(115.96 acres)
SL-063058
(240 acres)
SL-063058
(160 acres)
U-010581
(160 acres)
18
17
16
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- MODIFICATION APPLICATIONS
- LEASES

FIGURE 2

availability of alternative fossil fuels. At the present, five coal companies are operating in the field which produced 2.6 million tons in 1979. Field production will probably exceed 10 million tons within 10 years.

Since coal is produced by underground methods, the land generally remains available for grazing, wildlife habitat and recreation. Only widely scattered ranch houses are located in the general area. Residences are not located on or near the project area. The closest population center is the old mining town of Kenilworth, about 4 miles westward of the application area.

The surface and mineral estates of the application area are owned by the Federal Government and managed by the Bureau of Land Management (BLM).

C. Planning and Zoning Data

The application area is located within the Price River Planning Unit of the Price River Resource Area in the Moab District. A Unit Resource Analysis (URA) was prepared in 1968; however, planning was not completed. A current planning effort has been completed through the URA, with completion of the Management Framework Plan (MFP) not expected before 1982 because of the preparation of a range environmental impact statement. The MFP is expected to call for multiple use management. Information currently available on the resources of the application area has been incorporated in this EA/TE through a team effort. An MFP summary is currently planned that would include the application area. Competitive leasing in the Book Cliffs KRCRA would occur in 1983.

The unsuitability criteria were applied to the lease modification area (BLM, April 20, 1981) at the same time that they were applied to AMCA's existing leases during mine plan review. The only area found to be unsuitable upon strict application of the criteria was the presence of a telephone line and powerline that serves the Pinnacle Mine. Criteria 14 (migratory birds) was not applied due to a lack of data. With an MFP summary now scheduled, the application area will also be considered for unsuitability therein.

The application area has been zoned by Carbon County for mining and grazing.

II. PROPOSED ACTION AND ALTERNATIVE

A. Proposed Action

AMCA Coal Leasing has filed applications for lease modifications. The application area is located between Tower Resources' existing property and the Book Cliffs escarpment with coal present within four principal topographic peninsulas extending outside Tower Resources' present boundaries (Figure 3). Although three seams are minable on the existing leases, only two seams are of minable thickness on the application area. The coal seams are weathered and burned at the outcrop. Surface access to the limited and disconnected reserves, by themselves, is not economically feasible.

Based on calculations by Tower Resources', 4.8 million tons of reserves are present on the application area of which 3.2 are recoverable (Table 1). The addition of 3.2 million tons of recoverable coal is not expected to increase annual production over project life, but would extend project life by about 3 years (Tower Resources, Inc., February 1981).

Existing and proposed surface facilities for the Centennial Project would not change with the lease modifications. None of the proposed surface facilities will be placed on the lease modification areas (Tower Resources, Inc., 1980). Exploration activities are not anticipated on the modification areas due to the presence of extensive outcrops and other existing data points.

Tower Resources' mine plan calls for room-and-pillar methods using continuous miners. During initial mine development utilization of longwall mining equipment will be considered based on the adaptability of the coal to such mining. Total recovery of coal by room-and-pillar methods following final pillar extraction is projected at 65 to 70 percent of minable coal.

Mining operations are now in progress in fee coal along the border of the SL-027304 application area with main entry development complete (see Plate VI in applications) with approximately 3 to 4 months of Gilson seam mining remaining. Entries could be driven into the Gilson seam of this application area as soon as the modification is issued by the BLM and Tower Resources' mine plan is approved by the Office of Surface Mining. This particular application is of more urgency than the other two applications since mining has already begun in an adjacent area. Opening of the Crandall Mine in the Aberdeen seam, with portals on the private coal and adjacent to modification application SL-027304, could begin as early as late 1982 (Plate VII of the applications). The Hileman Mine in the Lower Sunnyside seam could open as early as late 1981; however, this mine would not extend onto the application areas due to thin coal.

An EIS which considered operations and environmental impacts of the Centennial Project on Tower Resources' existing property was completed in 1979 (USGS, 1979). This Environmental Assessment/Technical Examination will consider those operations and impacts which would stem from leasing the additional acreage and will develop recommended measures to mitigate those impacts.

TABLE 1

Proposed Lease Modifications

Lease Number	Additional Acres	Additional Coal Reserves (tons)	Additional Recoverable Coal (tons)
SL-027304	115.96	1,798,000	1,213,650
SL-063058	160.00	1,800,000	1,215,000
U-010581	160.00	4,798,000	810,000
	435.96	4,798,000	3,238,650

B. Alternatives

1. No Action

The "No Action" alternative would be to delay processing of the lease modification requests. As mining operations progress, the coal in the application area could become more difficult and costly to extract, depending on the remaining roof support, ventilation and ease with which men and equipment can be relocated. Maintaining the "No Action" alternative for the life of the project would cause 3.2 million tons of coal in the lease modification areas to become uneconomic to mine.

2. Competitive Leasing

The application area is not accessible for mining except from outcrops on the application area or from Tower Resources' existing property. The size and disconnected nature of the coal reserves, due to canyons, would not allow economical commercial coal operations based solely on the application area.

III. AFFECTED ENVIRONMENT, IMPACTS AND MITIGATION

A. Nonliving

1. Climate, Air Quality and Noise

The climate in the general area is varied and strongly influenced by topography. Temperatures at higher elevations of the lease modification area are normally 3 to 5 degrees cooler than at Price, 10 miles south-southwest and 1,200 feet lower, where temperatures average 25 degrees in January and 70 to 75 degrees in July and August. Extreme recorded temperatures at Price are -31 and 108 degrees. Average precipitation on the lease area is 12 to 15 inches. Most precipitation is received in the form of snow falling mainly in January through March and rain in late summer and fall. Winds in spring and summer are generally from the south to southwest at 8 to 12 miles per hour. Fall, winter and early spring winds are generally from the north-northwest at 3 to 5 miles per hour. The frost-free period is about 140 days.

Air quality has not been monitored on the lease, but for rural locations in this section ~~of the state the annual average particulate count is 20 micrograms per cubic meter (Aero Vironment, Inc., 1977).~~ Wind blown dust may cause the suspended particle 24-hour standard to be exceeded. Based on the ~~estimated suspended particles, the average visual range is 67 miles.~~

Current mine operations contribute to local air pollution and noise through the activities of the surface facilities and the traffic caused by hauling men, equipment and coal.

~~The lease modifications would extend the project life 3 years.~~ The proposed action would, therefore, extend those air quality and noise impacts anticipated from the Centennial Project an additional 3 years.

2. Topography and Geology

The subject area lies along the escarpment of the Book Cliffs (Figure 3). The Book Cliffs is a major physiographic feature in the region. These cliffs rise from a base at approximately 6,800 feet in elevation to over 8,500 feet. The area is mountainous with steep cliffs and deeply incised drainages. Elevations on the application area range from about 6,900 to 7,800 feet.

The Book Cliffs is a homoclinal feature dipping up to 7 degrees from the San Rafael Swell to the south into the Uinta Basin to the north. Composed of Cretaceous strata of the Mesaverde Group, lithologies include those of fluvial, deltaic and marine environments. Erosion of resistant sandstones in the Blackhawk formations and overlying Castlegate Sandsone and Price River Formation has created the rugged topography of the cliffs. Colluvium covered pediment remnants extend from the base of the cliffs. Faults are not known to occur in the project area.

The Blackhawk formation, which contains the minable coals of the area, consists of about 1,100 feet of marine sandstone tongues projecting eastward into the underlying Mancos shale with each tongue overlain by lagoonal sandstones, shale, coal and floodplain deposits of sand and shale.

Surface subsidence can be expected above mined areas with greater effects where multiple seams are mined. Factors influencing subsidence include mining methods, thickness of coal removed, nature and thickness of overburden and proximity to outcrop. As mine passageways subside, stress is transferred to solid coal boundaries or pillars with caving occurring until the stress is dissipated. As mining progresses and pillars are pulled, it is assumed that the roof will cave in behind the crew. The overlying rock may bridge off and result in no disturbance to the surface. Potentially, subsidence could range to as much as 70 percent of total mined height. Considering a total mined thickness of 13 feet, surface subsidence could be as great as 9 feet. Differential subsidence over barrier pillars or adjacent to cliffs could be visible as fractures or buckles in resistent rock or rock falls or slides along cliffs. Subsidence over mined areas in similar terrain has generally not been visually noticeable.

A surface subsidence monitoring system, approved by the Authorized Officer, should be established to measure the effects of underground mining on the lease modification area. Monitoring results could be used as a basis for required changes in Tower Resources' mine plan.

AMCA Coal Leasing, Inc., in conjunction with the U. S. Geological Service, should be held responsible for the adoption of mining methods along escarpments which prevent subsidence that may result in significant landslides or rockfalls.

3. Minerals

Three minable coal seams are present in the area of the Centennial Project; namely, Lower Sunnyside, Gilson and Aberdeen. However, only the Aberdeen and Gilson are minable in the application area. These seams are separated by 200 feet of strata which includes an extremely competent massive sandstone (Figure 4). In the application, the Aberdeen is from less than 4 to 12 feet thick and the Gilson seam ranges from 2 to 7.5 feet. Thicknesses less than 4 feet are not considered minable. Coal analyses from the project area are shown in Table 2. Coal reserves of the two minable seams was presented in Table 1.

TABLE 2

Average Analyses of Coal from Drill Holes and Abandoned Mines on the Property

Coal Bed	No. Samples	BTU	Percent H_2O	Volatile Material	Fixed Carbon	Ash	Sulfur
Gilson	6	12,463	5.33	36.64	52.74	5.56	0.58
Aberdeen	11	12,708	5.08	38.16	51.56	5.20	0.67

Source: USGS, 1979

Two organized gas fields and an oil field are located 20 or more miles to the northeast which are producing from stratigraphic traps in the Wasatch and Green River Formations; neither of which extend onto subject lease area. CO_2 is produced from a structural trap in the Dakota Formation about 10 miles to the south. Stratigraphic traps may be found on the lease area, but no holes have yet been drilled thereon. Other energy and mineral resources would not be impacted because they do not occur inside the lease modification areas.

Coal mining of the lease modification area would remove over 3 million tons of coal and cause another 1.5 million tons of coal to become inaccessible for future extraction.

Oil and gas exploration would not be allowed over active mine workings and, following mine abandonment, drilling with mud would not be possible where subsidence has occurred due to circulation problems. Air drilling would probably be possible. Potential loss of oil or gas cannot be estimated. Conflicts between coal mining and oil/gas well drilling could develop.

4. Hydrology

The lease area is drained by parts of the Left and Right Forks of Deadman Canyon and Straight Canyon, all of which are tributary to the Price River. Streams on the lease area are ephemeral. Upstream uses of this water are by livestock, wildlife and streamside vegetation. Surface runoff probably

GEOLOGIC COLUMN OF CENTENNIAL AREA

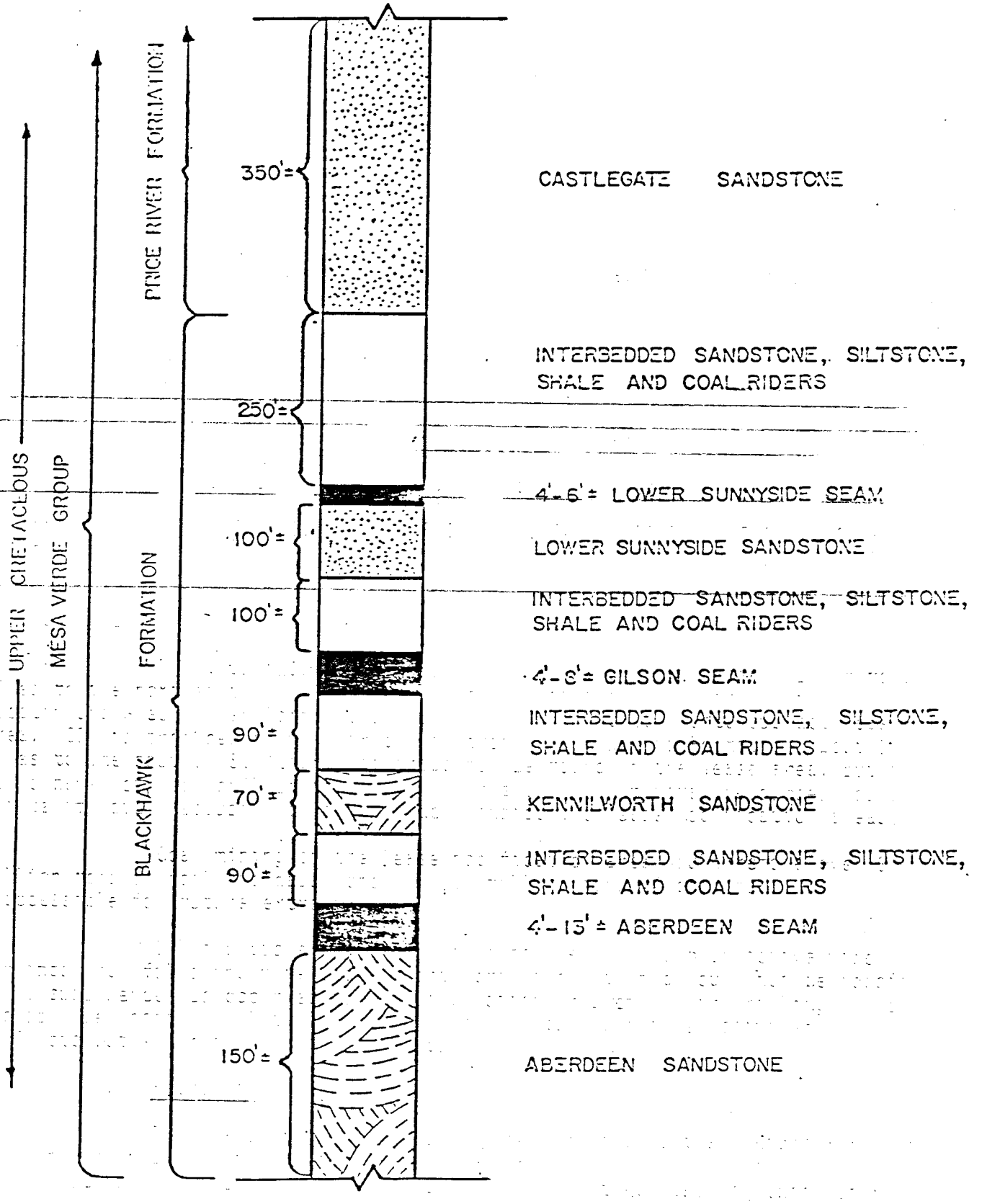


FIGURE 4

averages less than 1 inch or about 180 acre-feet per year. Judging from flow data from nearby streams, the chemical quality of surface water from the lease is probably good and would be expected to contain less than 500 mg/L of dissolved solids (USGS, 1979). Floodplains or wetlands are not present.

Sandstone beds above and within the Mancos shale are locally waterbearing in the area of the mine. However, beds near the escarpments are commonly dry as groundwater movement is downdip away from the cliff faces. Groundwater may be perched or impeded from deeper infiltration by one or more layers of rock having relatively low permeability. Springs are not found on the existing Tower Resources' property and assumably are not present on the modification area. The nearest spring is about 1 mile north of the property boundary. Groundwater recharge is from precipitation in the vicinity of the lease area and is no more than 30 to 35 acre-feet per year per square mile. A hydrologic inventory was performed of the Centennial Project (Vaughn Hansen Associates, 1981).

The lease modification areas are primarily along the cliff faces where the sandstone beds are commonly dry. It is, therefore, unlikely that groundwater availability would be significantly altered by subsidence in the lease modification area. Subsidence and subsequent cracking of strata overlying the mine may cause some surface runoff to be diverted into the ground. This water would be added to the groundwater supply and may resurface as a spring. Discharge from the mine itself is not expected due to slope of mineways away from the portals.

Projected annual water consumption by the mine is 100 acre-feet. The lease modification would extend the projects life 3 years, requiring an additional 300 acre-feet of water. The water would be obtained from both the mine and wells drilled at the mine site, which may lower local water levels.

The company is responsible, as required by State and Federal regulations, for conducting an inventory of water resources prior to mining and for monitoring the flow and quality of springs, streams and wells. The company is required to replace or make restitution for any significant changes in flow or yield of spring or streams due to its operations.

5. Soils

Soils in Starpoint, Deadman and Straight Canyons are grouped into two associations. Soils on the east slope of the canyons are grouped into a rock outcrop - Udic Ustochrepts association. This unit consists of 60 percent rock outcrop and 30 percent Udic Ustochrepts with 60 to 85 percent slopes. Inclusions make up 10 percent of the unit. Rock outcrop is a land type consisting of barren rock and rock with less than 4 inches of soil cover.

The Udic Ustochrepts soils are deep and well drained. They were formed in colluvium and residium derived from sandstone and limestone. In a typical profile the surface layer is very dark grayish-brown, cobbly, very fine sandy loam for about 4 inches. The underlying layers are cobbly to very cobbly,

very fine sandy loam to a depth of more than 4 feet. Rock fragment content ranges from 20 to 50 percent.

Permeability is moderately rapid and available water capacity is moderate. Organic matter content in the surface layer is moderately high. Effective rooting depth is about 60 inches. Surface runoff is rapid and erosion hazard is moderate under native vegetation and high if vegetation is removed and the soil is left bare.

Soils on the west slopes of the canyons are grouped into a rock outcrop - Typic Astorthent association, on extremely steep slopes. This association is quite similar to the Rock Outcrop - Udic Ustochrept association. The Typic Astorthents are deep and somewhat excessively drained. Rock fragment content ranges from 30 percent in the upper 15 inches up to 80 percent below 15 inches. Permeability is moderately rapid. Available water capacity is low. Organic matter content in the surface layer is moderate. Surface runoff is rapid and erosion potential is moderate under native vegetation and high if vegetation is removed and the soil is left bare.

The canyon bottoms consist of very deep alluvial soils. Permeability is moderate to moderately rapid. Runoff is slow to medium depending on the amount of vegetative cover and slope. Organic matter content is low.

Soil disturbance may occur in areas of surface subsidence; however, such disturbance would be of no significance. Other surface disturbances caused by exploration or mining will not occur on subject area.

B. Living

1. Vegetation

Vegetative types occurring in the lease areas includes sagebrush-grass, pinyon-juniper, conifer-aspen and a small amount of streamside vegetation. The major vegetative species are Douglas fir, Utah juniper, Ponderosa pine, pinyon pine, big sagebrush, rabbitbrush, Gambel oak, maple, chokecherry, snowberry, serviceberry, Indian ricegrass and wheatgrass. No threatened or endangered plant species have been identified in the lease area (Welsh, 1977). Large tree species are restricted mainly to canyons and protected slopes with limited fir and pine of commercial value.

2. Wildlife

A large variety of wildlife inhabit the area. Better known species include mule deer, elk, mountain lion, black bear, coyote, red, gray and kit fox, bobcat, chukar partridge, mourning dove, blue and ruffed grouse, rabbits and raptors. Reptiles include a variety of snakes and lizards. About 15 species of bats inhabit the area, including the spotted bat which is listed by the State with unknown status. The State Division of Wildlife Resources has not identified any portion of subject lease area as crucial or critical game habitat and has not located any threatened or endangered wildlife species near

the lease modifications. Fisheries are not present. The endangered bald eagle is a winter resident of the region. Neither bald or golden eagle nests or concentration areas are known to exist on the application area. The peregrine falcon is a yearlong resident of the region, but aeries are not known on the application area.

Issuance of the lease modifications would extend impacts to wildlife caused by the Centennial Project for an additional 3 years. The principal wildlife impact identified in the environmental statement (USGS, 1979) was the potential temporary decrease in deer population by 63 deer annually. Deer loss, in turn, could reduce mountain lions by two and black bear by one. Vehicle strikes of deer and raptors would increase, but cannot be quantified.

C. Human Values

1. Land Uses

a. Mining

Price, Utah, has been the center of Utah's coal industry since its inception over 100 years ago. Of the 309 million tons produced in Utah through 1970, 97 percent was produced in Carbon and Emery Counties with a similar trend continuing to the present. Since the early 1970's, Utah's annual production has increased with 13.6 million tons produced in 1980.

Ten mines or prospect entries have operated within the Centennial Project area during the period 1924 to 1964. Past operations on the application areas have been limited to the Aberdeen seam (Plates in 4, 5 and 6). The current Pinnacle Mine began operations in October, 1980.

Approval of the applications would extend mining use of the Centennial Project area for 3 years.

b. Grazing

Subject area is located within the Deadman Allotment (4035) which includes 1,936 Federal acres. Authorized use is 24 AUMs. Cattle (24) are grazed from April 1 to 15 and May 1 to 15. Most slopes on the lease modification areas are over 50 percent and are considered unsuitable for grazing.

Mining of the application areas would not, in itself, affect livestock grazing. However, collisions of vehicles with cattle along access roads would be possible with resulting injuries or fatalities. This impact would be extended for 3 years.

Prime and unique farm lands and alluvial valley floors are not present.

c. Recreation

Deer hunting in the fall is the dominant recreational use. Other uses include recreational driving on low standard roads, hiking, gathering firewood, horseback riding and small game hunting. Snow cover is generally too light and slopes too steep for snowmobiling, cross country skiing or snowshoeing. Activities are restricted by limited access and the natural character of the area. Records of use are not available.

The application area has been considered for wilderness characteristics, but has been dropped from further study because of land ownership patterns and existing intrusions.

The lease modifications would not bring about additional land disturbance aside from minor subsidence, construction and improvement of roads to portal areas. Improved roads would improve public access.

2. Visual Resources

The Book Cliffs area provides a striking backdrop to travelers in the Price area. The Deadman Canyon area is typified by narrow, steep canyons incised into the Book Cliffs with rocky slopes moderately covered by vegetation. The area included in the proposed action does classify as "B" scenery ("A" scenery being the most scenic). However, a low overall Class IV rating is given because the area is removed visually into the background from heavily used travel zones and the sensitivity value is low because of limited visitation. A Class IV area has as its management guidance: "Changes may subordinate the original composition and character but must reflect what would be a natural occurrence within the characteristic landscape."

The proposed Centennial Project would be screened from all but the users immediate to the disturbed area. Visual resources on the modification areas would be affected only by construction or improvement of roads for access to portal areas. Such roads would improve public access. These access roads would be required irregardless of application approval. Tower Resources will clear some features of past mining and thereby improve visual resources on a local basis. Subsidence could be evidenced by rock slides along cliffs. The USGS could work with Tower Resources to insure cliff stability.

3. Cultural Resources

Class II archaeological surveys were conducted on Tower Resources' adjacent lease areas which included all proposed areas of surface disturbance (Tower Resources, 1980). Sites meeting National Register qualifications were not identified. Numerous historical remnants of homesteading and mining were described including a cabin (42Cb180) for which avoidance was recommended (Hawkins and Seward, 1980). Cultural resources on modification areas are not known.

Historical remnants will be removed in areas off the modification areas for proposed mine facilities. Impacts to any cultural resources on the modification areas are not expected.

In the event that cultural resources are discovered on public land, the Authorized Officer should be promptly notified for recommendations.

4. Public Health and Safety

Hazards to public health are not present in the project area, beyond those typically associated with rugged topography and abandoned mines. All mining operations by Tower Resources would be conducted in accordance with Federal and State mine safety regulations.

Employees would be exposed to hazards typical of modern underground coal mining. Closing or reuse of abandoned mines in areas of portals associated with the Centennial Project would decrease the chances of the injury or death of members of the public who may venture into these abandoned mines.

5. Socioeconomics

The socioeconomic structure of Carbon County is primarily related to mining activities. Employment by the coal industry has increased over 75 percent since 1970, while population size has increased 40 percent (U. S. Department of Commerce, 1979). Twenty-five percent of the labor force is involved in mining. The 25 percent of the labor force figure understates the economic importance of coal to the local economy as a number of local industries, business and governmental organizations are directly dependent on the coal industry, and as coal industry wages are higher than average. A complete discussion on the socioeconomics of Carbon-Emery Counties is presented in the Central Utah ES (USGS, 1979).

Because annual coal production would not change due to the proposed action, the expected project life would be extended 3 years. The proposed action's socioeconomic impact would not be realized for another 30 years when the mine would have to shut down if the lease modifications are not granted. Analysis of socioeconomic impacts 30 years distant would be conjectural. Timely leasing of the modification areas would permit Tower Resources, Inc., to economically extract 3.2 million tons of coal. These benefits, along with the benefits of increasing the supply of coal in the market place, would be realized by both coal consumers and Tower Resources, Inc.. Royalty fees from the additional 3.2 million tons of coal would be of benefit to the State and the Federal Governments. However, these royalty benefits would not be realized for 30 years, as additional production would not be realized for 30 years.

IV. RESIDUAL IMPACTS

1. 3.2 million tons of coal made available in the market place.

2. 1.5 million tons of unrecovered coal.

3. Probable subsidence.

4. Possible minor hydrological changes.

5. Unknown paleontological losses.

6. Possible paleontologic exposure for scientific information.

7. Residual impacts associated with the Centennial Project would be extended 3 years (see Central Utah Environmental Impact Statement; USGS, 1979).

V. SHORT TERM USE AND LONG TERM PRODUCTIVITY

Removal of coal from the lease modification areas would impede future exploration and extraction of oil and gas in the subject area. Due to collapse of mine ways, extraction of unmined coal in the mined seams may become technologically impossible. The mining of those seams now uneconomic to mine could be impaired or impossible due to subsidence.

Use of the modification area for recreational pursuits would be increased due to improved access related to the Centennial Project for the short term (mine life). Any other changes in use or productivity brought about by continuing mining for 3 years would be insignificant.

VI. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Coal resources not extracted in minedout areas or not mined for economic or technologic reasons would become inaccessible in most cases due to collapse of the mine ways and subsidence. Both the mined coal and unmined coal would have been "consumed" and not available for future use.

The fuels expended in coal mining would be irretrievably consumed.

An undetermined quantity of paleontological resources not previously accessible would be destroyed.

VII. PERSONS AND AGENCIES CONSULTED AND INTENSITY OF PUBLIC INTEREST

The affect of the mine operations (without the lease modifications) on the environment and socioeconomic infrastructure were fully evaluated in the Central Coal EIS. A number of Federal and State agencies, County and local offices, private individuals and organizations were consulted during EIS preparation. In addition, Allen Emmel from Tower Resources, Inc., John Livesay from the State of Utah Division of Wildlife Resources, Clark Johnson from the U. S. Fish and Wildlife Service, and Gordon Whitney and Allen Vance from USGS were consulted with reference to the lease modifications. Public notice of the proposed lease modification was published in the local newspaper on May 6 and 13, 1981 (Sun Advocate), Price, Utah (Appendix IV) and a public review and response period provided.

VIII RECOMMENDATIONS

A. Stipulations

In accordance with 43 CFR 3432.3(a), the "terms and conditions of the origianl lease shall be made consistent with the laws, regulations and lease terms applicable at the time of modification ...". Thus, the lease terms relating to protection of resources issued for lease SL-027304 and U-010581 for readjustment proposed in 1979 and the terms of lease SL-063058 of 1942 are subject to revision at the time of lease modification. Due to the recent (1979) readjustment of lease terms on two of the leases, most impacts addressed herein would be mitigated by the existing lease terms on those two leases. Those lease terms relating to environmental protection have been compiled in Appendix III for ready reference. These terms are the same for both SL-027304 and U-010581.

It is recommended that these same terms be used for the modification of SL-027304 and U-010581 and also for lease SL-063058 with the following additions:

1. The lessee shall cooperate with the U. S. Geological Survey in designing mine plans that will prevent subsidence from causing rock falls or land slides along escarpments.

2. Surface disturbances and facilities planned for the lease area shall be subject to Visual Resource Management considerations. Efforts shall be made to mitigate visual impacts by imitating the form, line, color and texture of the natural landscape to the greatest extent practical as determined by the Authorized Officer.

3. The lessee may be required to conduct a wildlife field survey and provide survey data to the Authorized Officer prior to surface disturbing activities that includes identification of nesting sites for raptors and migratory birds of high Federal interest, resident fish habitat, wildlife species of high interest to the State and eagle concentration areas. The field survey shall be acceptable to the Authorized Officer. Mitigating measures to protect identified wildlife species shall be developed by the Authorized Officer upon review of exploration and mine plans.

B. Bonding

The standard $25,000 Statewide or $75,000 Nationwide bond would be sufficient for the existing leases and the modification areas.

APPENDIX I

Legal Descriptions

Existing Leases

SL-027304

T. 13 S., R. 11 E., SLM

Section 7: S½SE¼
Section 18: NW¼NE¼ — 120 Acres

SL-063058

T. 13 S., R. 11 E., SLM

Section 8: S½SW¼
Section 17: N½NW¼, SE¼NW¼
Section 18: NE¼NE¼ — 240 Acres

U-010581

T. 13 S., R. 11 E., SLM

Section 5: Lots 1-8 (All)
Section 6: Lots 1-8 (All)
Section 7: Lot 1, NE¼, NE¼NW¼, N½SE¼
Section 8: N½, N½SW¼, SE¼
Section 9: W½SW¼
Section 17: N½NE¼ — 1,682.39 Acres

Modification Applications

SL-027304

T. 13 S., R. 11 E., SLM

Section 7: Lot 4
Section 18: Lot 1, N½NE¼NW¼, SW¼NE¼NW¼ — 115.96 Acres

SL-063058

T. 13 S., R. 11 E., SLM

Section 17: NE¼NW¼SW¼, W½NW¼SW¼, SW¼NW¼
Section 18: E½NE¼SE¼, E½SE¼NE¼, NW¼SE¼NE¼, SW¼NE¼ — 160 Acres

U-010581

T. 13 S., R. 11 E., SLM

Section 17: S½NE¼, N½NE¼SW¼, NE¼SE¼, N½NW¼SE¼ — 160 Acres

APPENDIX II

Lease Histories

Lease SL-027304 was issued on September 1, 1925 for 40 acres. Forty-acre modifications to the lease were approved on July 10, 1943 and July 6, 1956 to total the present lease acreage of 120 acres. The first "continuance" was dated January 29, 1948 with a subsequent readjustment effective August 1, 1979. Readjustment is due in 1985.

Lease SL-063058 was issued on August 3, 1942 for 80 acres. The lease was modified on July 27, 1950 to include an additional 120 acres and on December 13, 1951 to include an additional 40 acres to total the present lease acreage of 240 acres. The lease was "continued" on December 11, 1962 with the only change in original lease terms being a reduction of minimum production requirements. Readjustment is due in 1982.

Lease U-010581 was issued on February 1, 1956 for 1,682.39 acres. A readjustment of terms was effective August 1, 1979. The next readjustment is due in 1996.

APPENDIX III

Special Stipulations

The Mining Director shall mean the Authorized Representative of the U. S. Geological Survey or as appropriate the Authorized Representative of the Office of Surface Mining, who is delegated the authority for the approval and administration of mining and reclamation plans. The Authorized Officer of the Surface Management Agency shall mean the District Manager, Bureau of Land Management, Moab District Office, 125 West Second South, P. O. Box 970, Moab, Utah 84532.

1. The lessee will be required to establish a monitoring system capable of measuring the effects of underground mining on the surface and subsurface resources. The system shall include:

a. A hydrologic study to secure baseline data concerning the surface and subsurface water occurring on or flowing through the lease area. The results of the study shall be furnished to the Mining Director prior to approval of the mining plan.

b. A surface subsidence monitoring system to measure the effects of the underground mining activities on the land surface.

c. A system to monitor the effects of underground mining on the water, topography, vegetation, wildlife, visual resources and surface land uses that occur on the lease area.

d. The monitoring shall be conducted by methods and in a manner approved by the Mining Director and in conjunction with requirements of the surface management agency. The results of the monitoring shall be reported periodically to the Mining Director and Authorized Officer. The Mining Director may require the lessee to employ such measures and precautions deemed necessary in their mining operation to assure that neither damage to surface resources, loss of perennial streams occurs, nor hazardous conditions are created.

2. All lease operations shall be conducted so as to comply with the Federal Water Pollution Control Act (33 USC 1151-1175) and the Clean Air Act (42 USC 1857 and following).

3. In accordance with Section 523(b) of the "Surface Mining Control and Reclamation Act of 1977," surface mining and reclamation operations conducted on this lease are to conform with the requirements of this act and are subject to compliance with Office of Surface Mining Regulations and final determination of suitability for mining.

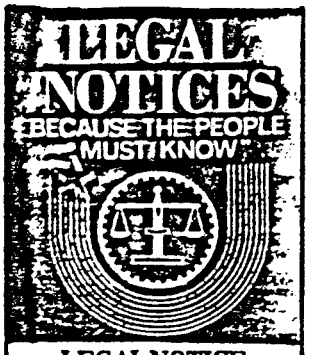
4. The permitting of any mining operations on the lease will be subject to the possible designation of any portion of the lease as unsuitable for some or all kinds of surface mining under the regulations of the Department under the Mineral Leasing Act and the Surface Mining Control and Reclamation Act of 1977 in effect at the time of action on the mine plan permit.

5. All support facilities, structures, equipment and similar developments will be removed from the lease area within 2 years after the final termination of use of such facilities. All disturbed areas and those areas occupied by such facilities will be rehabilitated in accordance with an approved reclamation plan, 30 CFR 211 and the "Surface Mining Control and Reclamation Act of 1977" as applicable. All disturbed areas located on public lands will be revegetated with species, and in a manner determined by the Authorized Officer.

6. Before the approval of a mining plan, the Authorized Officer may require a survey of all or part of the leased land to provide an inventory of any historical, cultural and archaeological values. The survey shall be conducted by a qualified professional archaeologist, approved by the Authorized Officer, and a report of the survey shall be submitted to the Authorized Officer. The approval of an exploration or mining plan or the continuation of lease operations may be conditioned on the approval of the survey report and the approval of measures to protect the historical, cultural and archaeological values. The cost of any survey or measures to protect such values discovered as a result of the survey shall be borne by the lessee, and items and features of historical, cultural or archaeological value shall remain under the jurisdiction of the United States.

If any items or features of historical, cultural or archaeological value are discovered during lease operations, the lessee shall immediately notify the Mining Supervisor and shall not disturb such items or features until the Mining Supervisor issues instructions. If the lessee is ordered to take measures to protect any items or features of historical, cultural or archaeological value discovered during lease operations, the cost of the measures shall be borne by the lessor, and such items and features shall remain under the jurisdiction of the United States.

APPENDIX IV



LEGAL NOTICE

The Bureau of Land Management (BLM) has prepared an Environmental Assessment and Technical Examination (EA/TE) for the modification of three Federal coal leases held by AMCA Coal Leasing, Inc. The EA/TE considers the addition of 445.96 acres to the existing leases totaling 2,042.39 acres. The modification areas lie between the existing leases and the Book Cliffs escarpment in the vicinity of Deadman and Straight Canyons about eight miles northeast of Price, Utah. The modification areas are described as follows:

SL-027304
T. 13 S., R. 11 E., SLM
Section 7: Lot 4
Section 18: Lot 1, NE¼NW¼ 125.96 acres

SL-063058
T. 13 S., R. 11 E., SLM
Section 17: NE¼NW¼SW¼, W½NW¼SW¼, SW¼NW¼
Section 18: E½NE¼SE¼, E½SE¼NE¼, NW¼SE¼NE¼, SW¼NE¼ 160 acres

U-010581
T. 13 S., R. 11 E., SLM
Section 17: S½NE¼, N½NE¼SW¼, NE¼SE¼, N½NW¼SE¼ 160 acres

The proposed modifications would be mined by Tower Resources, Inc. as an expansion of their Centennial Project.

The EA/TE is available for review at the Price BLM Office. Written comments will be received until May 20, 1981.

Published in the Sun Advocate May 6 and 13, 1981.

REFERENCES

Aero Vironment, Inc., 1977. Assemblage of Data on Air Quality in Central and Southern Utah and Assessing the Impact of Coal Development in this Region on the Air Quality: Pasadena, California. Final Report.

Hawkins, Bruce and Seward, Gregory. An Archaeological Survey of Portions of Fiasco Canyon and Starpoint Canyon, and Straight Canyon near Price, Utah. Antiquities Section Division of State History, State of Utah, 1980.

Tower Resources, Inc., February 1981. Application for Modification of Federal Coal Lease U-01058.

Tower Resources, Inc., February 1981. Application for Modification of Federal Coal Lease SL-027304.

Tower Resources, Inc., February 1981. Application for Modification of Federal Coal Lease SL-063058.

Tower Resources, Inc., 1980. Mining and Reclamation Plan for the Centennial Project.

U. S. Department of Commerce, Bureau of Economic Analysis. Local Area Personal Income, 1979.

U. S. Department of the Interior, Bureau of Land Management, Moab District, Memo 3461 U-066, Application of Coal Unsuitability Criteria, AMCA Coal Lease Modification, April 20, 1981.

U. S. Department of the Interior, U. S. Geological Survey, 1979. Final Environmental Statement, Development of Coal Resources in Central Utah, Site Specific Analysis, Part 2, Deadman Canyon Mine.

Vaughn Hansen Associates, Salt Lake City, Utah. Surface and Groundwater Hydrologic Inventory of the Tower Mine Plan and Adjacent Areas, Carbon County, Utah, February 1981.

Welsh, S. L., 1977. Endangered and Threatened Plant Species of the Central Coal Lands, Utah: Provo, Utah, Brigham Young University, 48 p.

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

January 27, 1986

Mr. Richard Holbrook
Office of Surface Mining
Brooks Towers
1020 15th Street
Denver, Colorado 80202

Rick

Dear Mr. Holbrook:

RE: Revised Decision Document, Tower Resources, Centennial Project Emergency Lease, ACT/007/019A, Folder No. 2 and 4 Carbon County, Utah

Enclosed is a revised Utah Final Decision Document for Tower Resources' Emergency Lease, originally submitted October 28, 1985. Certain pages have been revised to reflect the concerns raised by OSM at the Decision Document review meeting held January 17, 1986 in Denver. The entire document is being resubmitted due to changes in pagination and the small size of the document.

Please contact me if I can provide further assistance.

Sincerely,

L. P. Braxton
Administrator
Mineral Resource Development
and Reclamation Program

SCL:jvb
cc: D. Cline
S. Linner
0028R

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State Historic Preservation Officer
Utah Division of Water Rights
Affidavit of Publication

FINDINGS DOCUMENT

Tower Resources Inc., Emergency Lease
Centennial Project
ACT/007/019A
Carbon County, Utah

October 28, 1985

1. The Utah Division of Oil, Gas and Mining (DOGM) has determined that the permit application for a modification to the approved Mining and Reclamation Plan (MRP) originally submitted April 18, 1984 and updated through April 29, 1985 and the permit with conditions, is accurate, complete and complies with the requirements of the Utah State Program, the Surface Mining Control and Reclamation Act (SMCRA) and the Federal Lands Program including the Mineral Leasing Act (as required by UMC 786.19[a]).

2. The DOGM has performed a Technical Analysis (TA) and concluded that:

   A. No additional surface reclamation is required since the new lease will be mined as an underground extension of the existing mine. There will be no new surface facilities (UMC 786.19[b]).

   B. A cumulative hydrologic impacts assessment by DOGM for the Tower Emergency Lease reveals that the operations have been designed to prevent damage to the hydrologic balance outside the permit area (see Cumulative Hydrologic Impact Assessment [CHIA] attached). The details of the type and extent of impacts are included in the CHIA (UMC 786.19[c]).

3. After reviewing the description of the proposed permit area and the applicant's response to UMC 782.16 (Addendum, page 14), the DOGM has determined that the area is:

   A. Not included within an area designated unsuitable for coal mining operations.

   B. Not within an area under study for designating lands unsuitable for coal mining operations.

   C. Not on any land subject to the prohibitions or limitations of 30 CFR 761.11(a) (national parks, etc.), 761.11(f) (public buildings, etc.) and 761.11(g) (cemetery).

   D. Not within 100 feet of the outside right-of-way of public roads.

E. Not within 300 feet of an occupied building (UMC 786.19[d]).

4. The issuance of a permit and the Secretarial decision on the Mineral Leasing Act plan are in compliance with the National Historic Preservation Act and implementing regulations (see August 6, 1984 letter from SHPO, attached to the TA) (UMC 786.19[e]).

5. The applicant has the legal right to enter and begin underground mining activities in the permit area. The applicant has provided information required by UMC 782.15(b) (MRP Addendum, pages 12-14) (UMC 786.19[f]).

6. The applicant has submitted proof and the DOGM records indicate that prior violations of applicable laws and regulations have been corrected (DOGM NOV/CO Status Report, October 24, 1985) (UMC 786.19[g]).

7. The DOGM records confirm that all fees for the Abandoned Mine Reclamation Fund have been paid (personal communication, John Sender, OSM Fee Compliance Officer, September 16, 1985) (UMC 786.19[h]).

8. The DOGM records show that the applicant does not control and has not controlled mining operations with a 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 (DOGM NOV/CO Status Report, October 24, 1985) (UMC 786.19 [i]).

9. Coal mining and reclamation operations to be performed under the permit will not be inconsistent with other underground mines in the general vicinity. The closest operating mine is the Soldier Canyon Mine (UMC 786.19 [j]).

10. The applicant has posted a surety bond for the Centennial Project in the amount of $381,839.00. No additional Surety will be required for this modification since there is no additional surface disturbance proposed (UMC 786.19[k]).

11. The applicant has provided evidence and the DOGM has found that there are no prime farmlands in the permit area (MRP Addendum, page 25) (UMC 786.19[l]).

12. The DOGM has determined that there are no Alluvial Valley Floors (AVF) existing within the proposed permit area. There are no AVF's which may be negatively impacted by mining of the Emergency Lease (UMC 786.11[l]).

13. The proposed postmining land-use for the permit area has been approved by the regulatory authority and is the same as the premining land use (see letter from BLM dated August 14, 1984 attached to the TA) (UMC 786.19[m]).

14. All specific approvals required by the Act, the Utah State Program and the Federal Lands Program have been made (UMC 786.19[n]).

15. The proposed operation will not affect the continued existence of threatened or endangered species or result in the destruction or adverse modification of their critical habitats (see letter from U. S. Fish and Wildlife Service, attached to the TA) (UMC 786.19[o]).

16. All procedures for public participation required by the Act, and the approved Utah State Program have been complied with (UMC 786.23[a][2]).

Prior to the permit taking effect, the applicant must forward a letter stating its acceptance of the special stipulations in the permit.

Permit Supervisor

Administrator, Mineral Resource
Development and Reclamation Program

Associate Director
Division of Oil, Gas and Mining

Approved as to Form
Assistant Attorney General

Director
Division of Oil, Gas and Mining

CUMULATIVE HYROLOGIC IMPACT ASSESSMENT
Tower Resources, Inc.
Centennial Project
ACT/007/019
Carbon County, Utah

October 28, 1985

I. Introduction

The purpose of this report is to provide a Cumulative Hydrologic Impact Assessment (CHIA) for Tower Resources, Inc., Centennial Project located in Carbon County, Utah. The assessment encompasses the probable cumulative impacts of all anticipated coal mining in the general area on the hydrologic balance and whether the operations proposed under the application have been designed to prevent damage to the hydrologic balance outside the proposed mine plan area. This report complies with federal legislation passed under the Surface Mining Control and Reclamation Act (SMCRA) and subsequent Utah and federal regulatory programs under UMC 786.19(c) and 30 CFR 784.14(f), respectively.

Tower Resources Inc. Centennial Project is located within the Book Cliffs Coal Field approximately 10 miles north-northeast of Price, Utah (Figure 1). The Book Cliffs form a rugged, southerly facing escarpment that delineates the Uintah Basin to the North from the San Rafael Swell to the south. Elevations along the Book Cliffs range from approximately 5,000 to 9,000 feet.

Outcropping rocks of the Book Cliffs range from Upper Cretaceous to Quaternary in age. The rock record reflects an overall regressive sequence from marine (Mancos Shale) through littoral and lagoonal (Blackhawk Formation) to fluvial (Castlegate Sandstone, Price River Formation and North Horn Formation) and lacustrine (Flagstaff Formation) depositional environments. Oscillating depositional environments within the overall reggressive trend are represented by members of the Blackhawk Formation. The major coal bearing unit within the Book Cliffs Coal Field is the Blackhawk Formation.

Precipitation varies from 20 inches at higher elevations to 5 inches at lower elevations. The Book Cliffs area may be classified as mid latitude steppe to desert.

Vegetation varies from the sagebrush/grass community type at lower elevations to the Douglas fir/aspen community at higher elevations. Other vegetative communities include mountain brush, pinyon-juniper, pinyon-juniper/sagebrush and riparian. These communities are primarily used for wildlife habitat and livestock grazing.

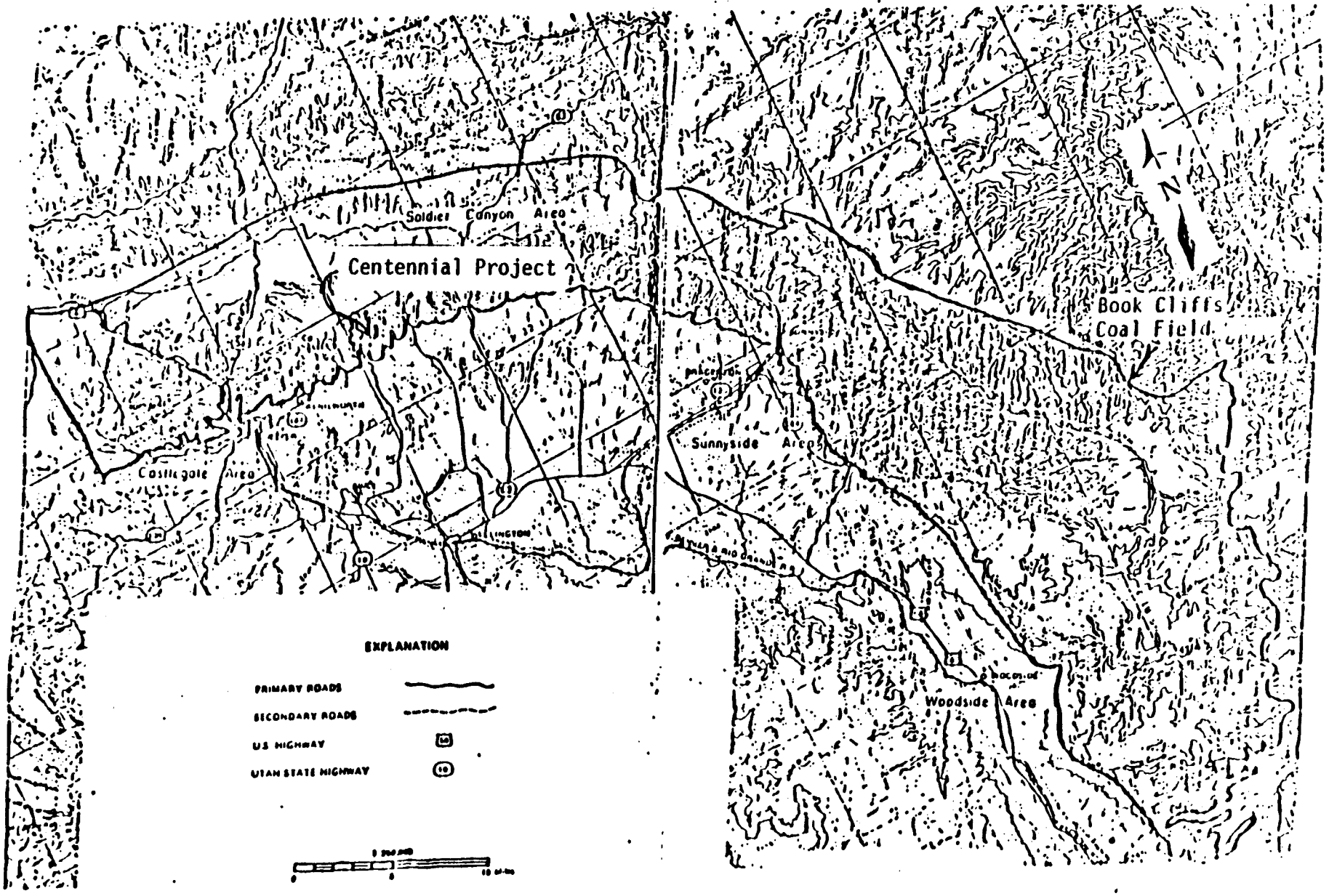

Figure 1. Book Cliffs Coal Field.

From: Doelling 1972.

Surface runoff from the Book Cliffs area flows into the Price River drainage basin of east-central Utah. The Price River originates near Scofield Reservoir and flows southeasterly into the Green River, north of the town of Green River, Utah. Water quality is good in the mountainous headwater tributaries, but deteriorates rapidly as flow traverses the Mancos Shale. The shale lithology typically has low permeability, is easily eroded and contains large quantities of soluble salts that are a major contributor to poor water quality. Depending upon the duration of contact, water quality degrades downstream to where total dissolved solids (TDS) levels of 3,000 milligrams per liter (mg/l) are common. The predominant ion leached from the Mancos Shale is sulfate (SO_4) with values over 1,000 mg/l common in the lower reaches of the Price River.

II. Cumulative Impact Area (CIA)

Figure 2 delineates the CIA for current Centennial Project operations. The CIA includes the Deadman Canyon drainage, the Straight Canyon drainage, the Hoffman Creek drainage and several other unnamed ephemeral drainages between Deadman Canyon and Hoffman Creek. The northern boundary of the CIA has been established at the natural drainage divide between drainages flowing north into the Price River and drainages flowing south into Deadman Canyon and Coal Creek and eventually into the Price River. The Centennial Project is located entirely within the watershed flowing to the south. The eastern boundary of the CIA is designated by Coal Creek, a perennial stream. Mining in the Centennial Project will not occur beneath Coal Creek and therefore the limits of the CIA do not extend to the east of Coal Creek. The western and southern boundaries of the CIA are defined by the western extent of Sections 19 and 30 in T 13 N, R 11 E and the southern extent of Sections 27, 28, 29 and 30 in T 13 N, R 11 E, respectively. A first level analysis was conducted using the section lines as the CIA boundary. Completion of the review at this level indicated that cumulative hydrologic impacts did not exist within these limits. Therefore, further analysis was not conducted beyond these limits and the CIA was determined to be complete. The CIA encompasses approximately 9792 acres.

III. Scope of Mining

Initial mining operations of the Centennial Project began in October, 1980 in the Pinnacle Mine on the Zions fee lease. The original Mining and Reclamation Plan was approved in January, 1982, and mining progressed onto the federal leases. In June, 1982 the Apex Mine was opened. In October, 1981 modifications to the federal leases were granted, thus adding 436 acres to the overall mine plan area. The 120 acre federal emergency lease was granted in November of 1983. The coal to be mined from the emergency lease will be extracted as an underground extension of the existing Pinnacle Mine operation. The Centennial Project (including the 120 acre emergency lease) currently comprises approximately 2,360 acres. Mineable reserves within the plan area total approximately 30 million tons.

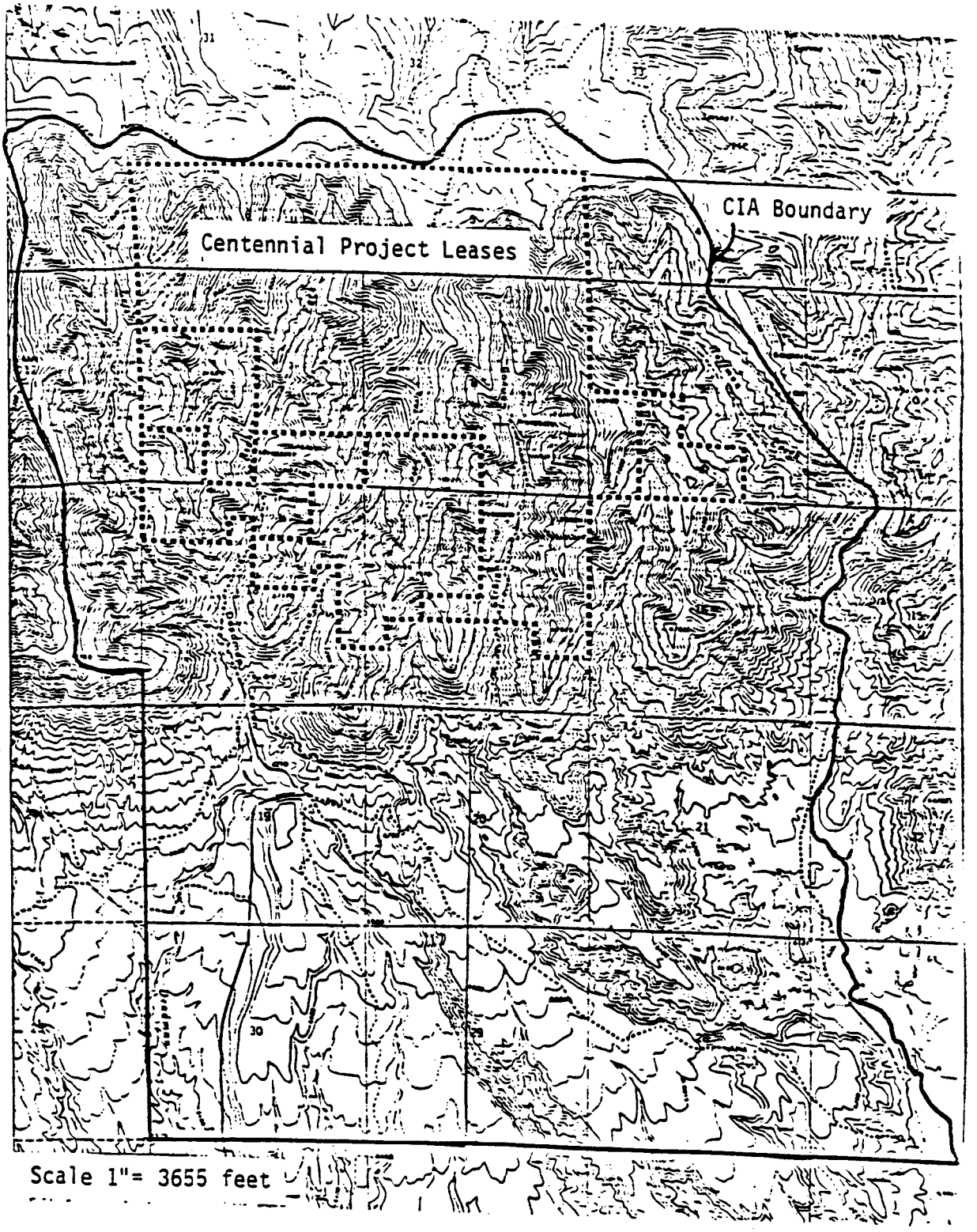

Figure 2. Cumulative Impact Area (CIA)

Three seams of mineable coal are located within the permit area and the approved Mining and Reclamation Plan for the Centennial Project calls for the eventual development of a separate mine in each of these seams. Currently two mines, the Pinnacle (Gilson Seam) and Apex (Lower Sunnyside Seam), have been developed and are currently operating. The third mine in the Aberdeen Seam has yet to be developed.

Production will be from room and pillar mining methods with secondary pillaring. Overburden thickness ranges from approximately 0 to 2400 feet.

Tower Resources Inc., has formally submitted an expression of interest for a 328 acre coal tract for consideration as part of the Uintah Southwestern Utah Coal Region, coal lease sale offerings. This tract, known as the Graves tract, is located north and northeast of the Emergency Lease area.

IV. Study Area

A. Geology

The Book Cliffs are basically a homocline (dip slope) dipping into the Uintah Basin with the cliff front roughly paralleling the strike of the feature. The beds are mostly uniform with dips of 3^{o} to 8^{o} to the north and northeast. Occasional faults cut the coal measures in the Book Cliffs but are of small displacement and have been of little consequence in mining. There are no faults known to exist within the Centennial Project. No major faults exist in the area adjacent to the mine plan area, however, Doelling (1972) shows that one minor fault may exist about one-half mile south of the portal area.

Geologic formations exposed within the mine plan area are the Blackhawk and Price River Formation of the Mesa Verde Group and the North Horn and Flagstaff members of the Wasatch Formation (Figure 3). The Blackhawk Formation, which directly overlies the Mancos Shale in the vicinity of the Centennial Project (Doelling, 1972) is the middle and coal bearing unit of the Mesa Verde Group. The Blackhawk consists of a basal sandstone (the Aberdeen Sandstone) overlain by massive beds of gray to buff sandstone with alternating beds of sandy shale, shale and coal (Clark, 1928). In the vicinity of the Centennial Project, the Blackhawk Formation is approximately 1000 feet thick (Doelling, 1972).

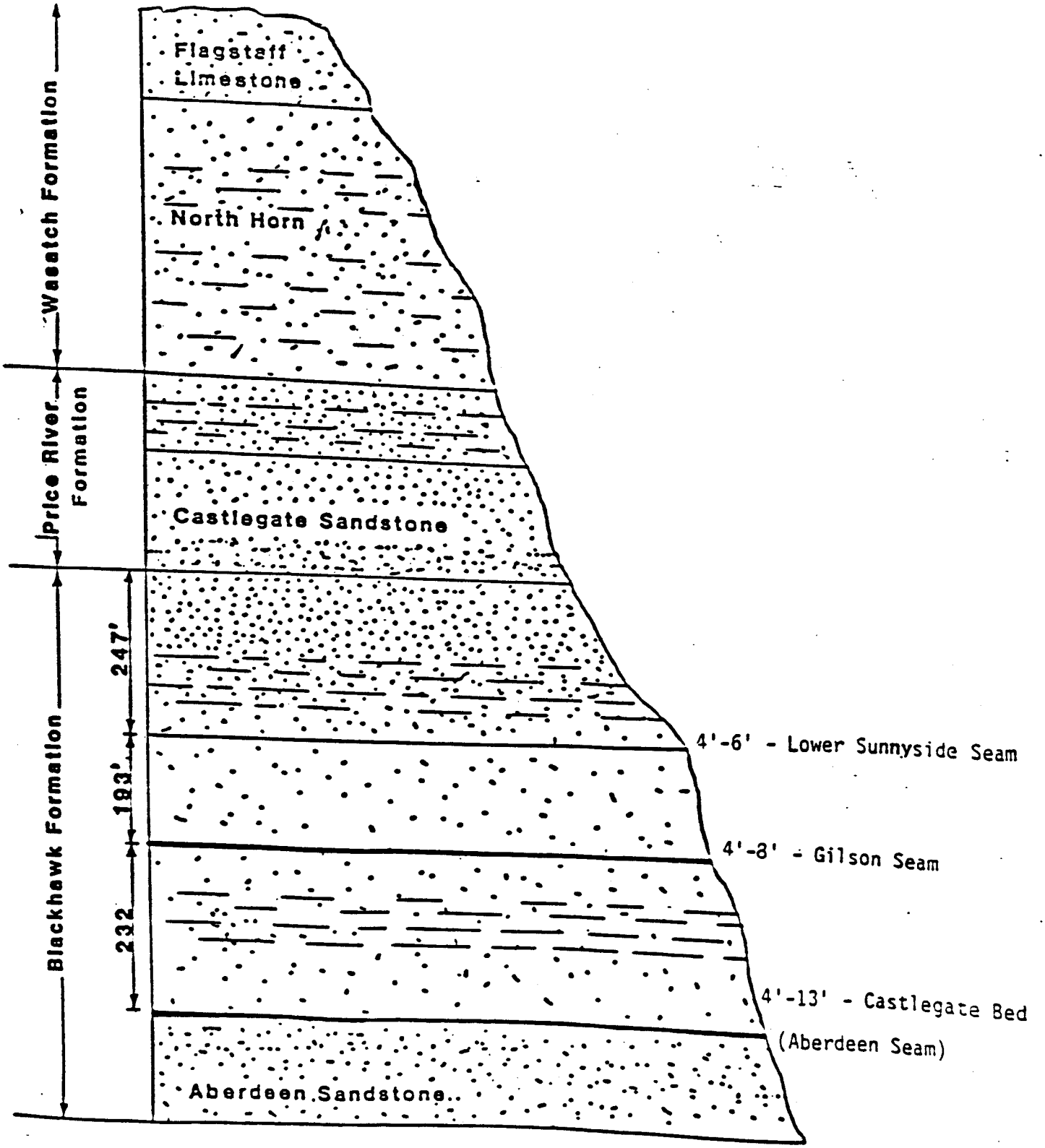

Figure 3. Generalized columnar section of the Centennial Project (Doelling, 1972)

Overlying the Blackhawk Formation is the Price River Formation. The Price River Formation is composed of a massive basal sandstone (referred to as the Castlegate Sandstone) and upper beds overlying the Castlegate (Clark, 1928). The Castlegate Sandstone consists of massive, fine-grained to medium-grained sandstone beds (Doelling, 1972) which are gray to buff and composed mainly of semi-rounded quartz grains (Clark, 1928). The Castlegate Sandstone is approximately 250 feet thick near the Centennial Project (Doelling, 1972). The upper portion of the Price River Formation consists of two or more thick beds of sandstone, interbedded with thin-bedded shale and sandy shale (Clark, 1928).

The North Horn Formation, the lower most member of the Wasatch Formation, consists of a series of shale, mudstone sandstone, minor conglomerate and freshwater limestone. Near the Centennial Project, the North Horn Formation is approximately 600 feet thick.

The Flagstaff Limestone, also a member of the Wasatch Formation, consists of thin-bedded limestones, shales, and sandstones (Doelling, 1972). The Flagstaff Limestone is exposed just north of the mine plan area on the Plateau.

B. Topography and Precipitation

Topography in the area is generally very steep and rugged, with elevations ranging from approximately 6400 feet to 8500 feet above sea level. Slopes vary from vertical cliffs to less than 2 percent. The entire CIA is characterized by a south to south-east ephemeral drainage system that originates above 8400 feet and progressively traverse nonmarine and marine Cretaceous rocks and alluvial fan deposits. The Right and Left Forks of Deadman Canyon and an unnamed ephemeral drainage drain the western portion of the CIA. Straight Canyon, an unnamed ephemeral drainage and Hoffman Creek drain the southeastern portion of the CIA and are tributary to Coal Creek. Coal Creek and Deadman Canyon are both tributary to the Price River.

Precipitation in the Book Cliffs Coal Field ranges from 5 inches to a maximum of 20 inches annually. For the most part along the coal outcrops, 10 to 12 inches of rain are expected (Doelling, 1972).

C. Vegetation

Mountain-Brush, Desert-Shrub, Pinyon-Juniper Woodland, Sagebrush-Grass, Conifer-Aspen and minor stream side vegetative types cover the total CIA. Most of the area is covered by the Mountain-Brush type while the Pinyon-Juniper Woodland type is predominant in the mine mouth area as well as the access routes and utility corridors.

V. Hydrologic Resources

A. Grouno Water

The principle factor controlling the occurrence and availability of groundwater in any area is geology. As noted by Price and Waddell (1972), nearly all of the region in the CIA is underlain by rocks of continental and marine origin, consisting predominantly of interbedded sandstones and shales. Although some of the sandstones in the region serve as the principle water-bearing strata, their ability to yield water for extended periods of time is largely controlled by the fact that the sandstone beds are relatively impermeable and by the existence of the impermeable interbedded shale layers, which prevent the downward movement of a significant amount of water. According to the U. S. Geological Survey (1979), groundwater in the region exists under water table, artesian and perched conditions. Water table conditions exist primarily in shallow alluvial deposits along larger perennial streams and in relatively flat lying sedimentary rocks. Artesian conditions exist at greater depths where a confining layer overlies a more permeable strata. However, pressures are generally not sufficient to produce flowing wells.

Snowmelt at higher elevations provides most of the groundwater recharge, particularly where permeable lithologies such as fractured or solution limestone are exposed at the surface. Vertical migration of groundwater occurs through permeable rock units and/or along zones of faulting and fracturing. Lateral migration initiates when ground water encounters impermeable rocks and continues until either the land surface is intersected (and spring discharge occurs) or other permeable lithologies or zones are encountered that allow further vertical flow.

The Kenilworth Member, Sunnyside Member and Upper Mudstone Member of the Blackhawk Formation, Castlegate Sandstone, Bluecastle Sandstone Member of the Price River Formation, undifferentiated North Horn/Flagstaff Formation, and Quaternary deposits are potential reservoirs or conduits

for groundwater in the CIA. Reservoir lithologies are predominantly sandstone and limestone. Sandstone reservoirs occur as channel and overbank lenticular and tabular deposits, whereas limestone reservoirs have developed through solution processes and fracturing. Shale, siltstone and cemented sandstone beds act as aquacludes to impede ground-water movement. The Mancos Shale is a regional aquaclude that delimits downward flow within the CIA. Localized aquacludes include the Aberdeen Member and Lower Mudstone Member of the Blackhawk Formation, Lower Unnamed Member of the Price River Formation and relatively thin impermeable lithologies occurring within overlying units.

Well test data from two water wells completed in the Blackhawk Formation near the portal area have been obtained from pumping tests. Well #1 is 130 feet deep and had a static water level of 58 feet below land surface prior to testing. After four hours of pumping at 50 gallons per minute, the water level had been lowered to 67 feet below land surface. In January 1981, after about three months use, this well was almost dry. These facts indicate that the aquifer may yield up to 5.5 gallons per minute per foot of drawdown but cannot produce a sustained yield over a period of time.

Well #2 was initially drilled to a depth of 155 feet and had a static water level of 57 feet below land surface. After two hours of pumping at 30 gallons per minute, the water level was lowered to 88 feet below land surface. The well was then drilled to a depth of 230 feet and pumped again. After only one hour of pumping at a rate of 30 gallons per minute the water level was lowered from 57 feet to 100 feet below land surface. After three weeks of pumping, in February of 1981, this well also almost dried up. The test results from well #2 indicate that the water bearing zone is less transmissive than well #1 but like well #1, it is very limited in areal extent.

The testing program of wells #1 and #2 was very limited and as a result the data from these tests must be regarded as such. However, estimates of transmissivity and areal extent of the aquifers in which these wells were completed indicate zones of low to moderate transmissivity of limited areal extent. In general these facts substantiate the lenticularity of the Blackhawk Formation and the fact that the water bearing zones are perched with a limited amount of recharge.

Seeps and springs were inventoried within and adjacent to the Centennial Project. Two springs occur within and adjacent to the mine permit area. One spring was identified approximately one-half mile south of the portal area and the other spring is located at the mouth of Hoffman Canyon. Both of these springs occur at or near the contact of the Blackhawk Formation and the Mancos Shale. Average flow is estimated to be less than ten gallons per minute for each spring.

In 1983 Tower Resources encountered groundwater in an area of burned coal during mining operations adjacent to the Emergency Lease. The water exists in the burn area between the underlying and overlying sandstones. The burn area, consisting of burned coal and rubble, acts as a reservoir with limited storage capacity. Recharge is from direct infiltration of precipitation and runoff directly into the outcrop. Due to the permeable nature of the burned outcrop, water easily percolates into the strata, flowing downgradient until the maximum available storage capacity of the burn area is achieved. Further movement downgradient is prevented by the existence of the relatively impermeable unburned coal. Tower estimates that approximately seven million gallons of water are contained in the burn area.

Very little water has been encountered in the Pinnacle Mine. Water that has been encountered has been in the form of small roof leakers that dry up within a few days or weeks after mining progresses downdrift. Mine inflow is most likely attributed to localized zones of saturation in the Blackhawk Formation.

B. Surface Water

The Centennial Project CIA is situated in the Book Cliffs near the headwaters of the Price River Basin. In general, the chemical quality of water in the headwaters of the Price River Basin is excellent, with this watershed providing most of the domestic water needs of the people below. However, this quality rapidly deteriorates downstream as the streams cross shale formations (particularly the Mancos Shale in and adjacent to Castle Valley) and receive irrigation return flows from lands situated on Mancos-derived soils (Price and Waddell, 1973). Within the Price River Basin, for example, Mundorff (1972) reports that the Price River and its tributaries generally have a dissolved solids concentration of less than 400 milligrams per liter upstream from

Helper. The water in this area is of a calcium-bicarbonate type. Between this point and the confluence with Miller Creek, most of the flows originate on or tranverse Mancos shales. Much of the flow is derived from irrigation return flows. The Price River at Wellington, which is near the center of the basin, has an average dissolved solids content of about 1700 milligrams per liter and is of a mixed chemical type (calcium-magnesium-sodium-sulfate). At Woodside, which is about 22 miles upstream from the confluence of the Price River with the Green River, the weighted average dissolved solids content has generally been between 2000 and 4000 milligrams per liter, with the water type being strongly sodium-sulfate.

Sediment yield from the upper portion of the basin is probably negligible (Mundorff, 1972). According to the U. S. Soil Conservation Service (1975), erosion rates in the Price and San Rafael River basins vary from 0.1 to 3.0 acre-feet per square mile per year. The bulk of the sediment yielded each year at the mouth of the Price River comes from limited areas covered with highly erodable shales (Mundorff, 1972).

The Centennial Project area is drained by ephemeral drainages heading primarily in a southerly direction. The Right and Left Forks of Deadman Canyon and an unnamed ephemeral drainage drain the western portion of the CIA including the area of the surface facilities. Straight Canyon, Hoffman Creek, and an unnamed ephemeral drainage drain the eastern portion of the CIA and are tributary to Coal Creek, a perrenial stream. Coal Creek and Deadman Canyon are both tributary to the Price River.

Surface disturbances related to coal mining occurs only in the Right Fork of Deadman Canyon. Interaction between the surface disturbances and this ephemeral drainage are minimized due to sediment control facilities that are in place. Mining has occured beneath the Right Fork of Deadman Canyon, two unnamed ephemeral drainages, and Straight Canyon. Mining in the Emergency Lease will continue under the Hoffman Creek drainage.

The ephemeral drainages flow in response to snowmelt and rainfall events. Water quality analyses of snowmelt runoff in the ephemeral drainages generally indicate major dissolved chemical constituents of magnesium, sodium, sulfate and bicarbonate.

VI. Potential Hydrologic Impacts

A. Ground Water

Dewatering and subsidence related to mining have the greatest potential for impacting groundwater resources in the CIA.

Dewatering

Very little water has been encountered in the currently operating mine within the Centennial Project. Water that has been encountered has been in the form of very small roof leakers that dry up within a few days or week after mining progresses downdrift. No mine water, with the exception of the intercepted burn area water, has been discharged in the past. Water well test data indicate perched aquifers of low transmissivity and limited areal extent. A mining induced dewatering impact is therefore, determined to have a low probability.

Subsidence.

Subsidence impacts are largely related to extension and expansion of the existing fracture system and upward propagation of new fractures. Inasmuch as vertical and lateral migration of water appears to be partially controlled by fracture conduits, readjustment or realignment in the conduit system will inevitably produce changes in the configuration of groundwater flow.

Potential changes include increased flow rates along fractures that have "opened" and diverting flow along new fractures or permeable lithologies. Subsurface flow diversions may cause the depletion of water in certain localized aquifers, whereas increased flow rates along fractures would reduce groundwater residence time and potentially improve water quality.

B. Surface Water

The main concern in terms of impact to surface water is water quality deterioration downstream from the minesite. There will be no impact to the quantity of water due to the ephemeral nature of the drainages. All drainages in the CIA flow only in response to snowmelt runoff and rainfall events. Infiltration rate and runoff volumes will not be affected by the mining operations.

The area influenced by surface disturbance is of limited areal extent and confined only to the Right Fork of Deadman Canyon. Surface sediment controls currently are in place and will continue to be in place during reclamation. The water quality impacts associated with reclamation will be minimal or nonexistent due to the fact all drainage from the disturbed area will be routed through sediment controls and treated prior to any release if a release does occur.

VII. Influence of Other Mining

The Centennial Project is the only active coal mine in the CIA. The Soldier Canyon Mine is located approximately six miles to the east in Soldier Canyon and the Price River Mine Complex is located approximately nine miles to the west in the Price River Canyon.

A cumulative hydrologic impact assessment prepared in December of 1984 for the Soldier Canyon Mine has addressed the hydrologic impacts for the anticipated mining in the Soldier Creek drainage. The greatest ground water concern with respect to the Soldier Canyon Mine is the undermining of Soldier Creek and the potential for streamflow to be lost into the mine via subsidence fractures through a minimum of 150 feet of overburden material. Three springs overlying the mine could be affected by subsidence associated with mining. These effects are possible but unlikely because the springs are located in the Flagstaff Limestone and the North Horn Formation and separated from the coal seams by approximately 900 feet of overburden. Additionally, approximately 50 gallons per minute currently enters the Soldier Canyon Mine from diffuse sources from the lenticular sandstones, shales and coal of the Blackhawk Formation.

The probable hydrologic impacts to the ground water are distinct and independent at the Centennial Project and at the Soldier Canyon Mine. There is no hydrologic connection between the alluvial aquifer underlying Soldier Creek and the operations at the Centennial Project. While both mining operations occur in the Blackhawk Formation, the aquifers associated with this Formation are perched and lenticular in nature. Pump test data in the Blackhawk Formation and monitoring of ground water inflow at each of the mines has demonstrated the absence of a regional aquifer in this Formation. The hydrologic impacts of the Centennial Project with respect to ground water will therefore not affect or be affected by the mining activities at the Soldier Canyon Mine.

The cumulative hydrologic impact assessment prepared for the Soldier Canyon Mine indicates that the greatest impacts to the surface water resource are related to changes in water quality caused by discharge of mine waters with a relatively high total dissolved solids (TDS) concentration. The Soldier Creek Coal Company has committed to limiting the volume of discharge so that the discharge TDS load will be less than the NPDES limits of 1.0 tons per day.

The Centennial Project has encountered very little water in the perched aquifers associated with the Blackhawk Formation and has not discharged water out of the mine due to the interception of the water by mining activities. Water out of an area of burned coal was discharged in 1983. Tower Resources, Inc. has committed to obtaining an NPDES Permit and submitting a monitoring plan in the

event that any unexpected mine water is encountered and must be discharged from the mine. Hydrologic impacts resulting from any treated discharge are therefore minimized and will not affect or be affected by the mine water discharge at the Soldier Canyon Mine.

A cumulative hydrologic impact assessment prepared in July of 1984 for the Price River Mine Complex has addressed the hydrologic impacts for the anticipated mining with respect to the Price River Basin. The CHIA has determined that the hydrologic effects of the Price River Coal Company (PRCC) mining operation will have no cumulative impacts with existing or proposed coal mining operations. Intercepted ground water from the Blackhawk Formation during mining operations has been determined to be approximately 0.64 to 0.96 cubic feet per second. This would reduce baseflow to springs and streams in the area by a lesser amount because water is discharged from the mine. Pump test data in the Blackhawk Formation and monitoring of ground water inflow into the mine at the PRCC Complex as well as at the Centennial Project demonstrate that there is no hydrologic connection in the Formation between the two mining operations. Therefore, the hydrologic impacts associated at the two mining operations will not affect each other.

The cumulative hydrologic impact assesssment prepared for the PRCC indicates that there will be minimal impact to the surface water quantity and quality due to mining operations. The surface water control plan in place at the PRCC Complex is sufficient to prevent additional sediment from disturbed areas from entering streams or drainages in the permit area. Mine water discharge is controlled by an NPDES Permit and is therefore not contributing to the degradation of the existing surface water quality.

The Centennial Project has and will continue to treat surface water runoff from disturbed areas and any unexpected mine water discharge. The hydrologic impacts of the Centennial Project with respect to the surface water will therefore not affect or be affected by mining operations at the PRCC Complex.

The operational design proposed for the Centennial Project is herein determined to be consistent with preventing damage to the hydrologic balance outside the mine plan area.

REFERENCES

Clark, Frank R., 1928. Economic Geology of Castlegate, Wellington and Sunnyside Quadrangles, Carbon County, Utah: U. S. Geological Survey Bulletin 793.

Doelling, H. H. 1972. Wasatch Plateau Coal Fields. In Doelling, H. H. (ed.). Central Utah Coal Fields; Sevier-Sanpete, Wasatch Plateau, Book Cliffs and Emery. Utah Geological and Mineralogical Survey Monograph Series No. 3. Salt Lake City, Utah.

Mundorff, J. C. 1972. Reconnaissance of Chemical Quality of Surface Water and Fluvial Sediment in the Price River Basin, Utah. Utah Department of Natural Resources, Division of Water Rights. Technical Publication No. 39. Salt Lake City, Utah.

Price, D. and K. M. Waddel. 1973. Selected Hydrologic Data in the Upper Colorado River Basin. U. S. Geological Survey Hydrologic Investigations Atlas HA-477. Washinton, D. C.

U. S. Soil Conservation Service. 1975. Erosion, Sediment, and Related Salt Problems and Treatment Opportunities. Special Projects Division. Golden, Colorado.

United States Geological Survey, 1979. Development of Coal Resources in Utah, Final Environmental Statement, Part 1.

STIPULATIONS

Tower Resources Inc.
Emergency Lease Modification
ACT/007/019A
Carbon County, Utah

October 28, 1985

Stipulation 817.50-(1)-DC

1. Within 30 days of permit approval for Emergency Lease #U-52341 the applicant must submit a plan for approval to the Division of Oil, Gas and Mining and the Division of Environmental Health for holding and treating of all mine water discharges. The plan must contain:

   A. Sampling of the discharge to demonstrate compliance with the effluent limitations of UMC 817.42.

   B. The discharge must be monitored for discharge rate and duration.

   C. The monitoring results must be submitted with the existing monitoring data under the currently approved sampling and reporting schedule.

   D. The applicant must obtain an NPDES Permit from the Utah Division of Environmental Health.

Stipulation 817.97-(1)-SCL

1. Within 30 days of approval of this modification, the applicant must commit to replace or mitigate loss of surface waters due to mining activity in the emergency lease and submit a plan for approval outlining how this will be done.

Stipulation 817.121-(1)-DD

1. The applicant shall submit the following information within 30 days of permit approval.

   A. An isopach map of the overburden above the Gilson coal seam for the mining area.

   B. An outline of mitigating measures to be taken to insure no subsidence occurs along escarpments.

TECHNICAL ANALYSIS
Tower Resources Inc.
Emergency Lease Modification
ACT/007/019A
Carbon County, Utah

October 28, 1985

Introduction

Tower Resources Inc. proposes to add a 120 acre federal emergency lease (#U-52341) to its currently approved permit area for the Centennial Project. All coal and surface lands on this lease are owned by the U. S. Bureau of Land Management.

The Mining and Reclamation Plan (MRP) for the Centennial Project was approved by the Office of Surface Mining in November of 1981 and by the Division of Oil, Gas and Mining in January of 1982. The originally approved MRP consisted of 2,240 acres of private and federal coal leases, controlled by AMCA Coal Leasing, the land acquisition and development branch of Tower Resources.

Currently two mines, the Pinnacle and Apex, are operating in the Gilson and Lower Sunnyside seams, respectively. A third mine approved in the original MRP to mine the Aberdeen Seam has not yet been developed. The emergency lease contains approximately 700,000 tons of recoverable coal in the Gilson Seam. These reserves will be mined simply as an underground extension to the Pinnacle Mine. Access, extraction and handling of coal will be through the existing Pinnacle Mine facilities. No additional surface disturbance will be associated with the mining of the Emergency Lease.

Tower Resources was granted emergency lease #U-52341 in November of 1983 due to the possibility of by-pass of coal in the forseeable future. In April of 1984, Tower Resources submitted an addendum to the approved MRP for the emergency lease to the regulatory authorities. Deficiency letters were sent to the company on August 3, 1984, January 28, 1985 and February 25, 1985. The company submitted responses on August 17, 1984 and April 29, 1985. The plan was determined complete on May 21, 1985.

The following technical sections are identified by specific regulation and/or performance standard. It is the Division's opinion that these sections differ significantly from the mining and reclamation practices and procedures which were approved in the original Mining and Reclamation Plan (MRP) permit application. Those sections or regulations not outlined were determined to be in compliance pursuant to the previously approved MRP.

UMC 817.48 Acid-Forming and Toxic Forming Materials - DD

Applicant's Proposal

The applicant plans to extend the Pinnacle Mine by developing coal resources in a new lease area (Lease #U-52341). The coal will be mined from the Gilson Seam, the only mineable coal seam on the new lease.

No refuse will be developed and stored on the surface. No acid or toxic-forming materials will have to be controlled, because all raw coal is hauled from the mine site (Addendum B, 784.11, page 6).

Compliance

The applicant's proposal will comply with this section.

Stipulations

None.

UMC 817.50 Underground Mine Entry and Access Discharge - DC

Applicant's Proposal

The applicant has stated that very little water has been encountered in the existing Pinnacle Mine. Water that is encountered will be stored and used within the mine. No mine water has been discharged nor is any water expected to be discharged in the future (addendum to Tower Resources Approval, Mining and Reclamation Plan for the addition of Emergency Lease #U-52341, Appendix B, page 16).

Compliance

In 1983, Tower Resources encountered ground water in an area of burned coal adjacent to the Emergency Lease. The trapped ground-water was able to flow downgradient into the mine and was discharged outside the mine according to Tower Resources' approved request (Addendum to Tower Resources' Approved Mining and Reclamation Plan for the Addition of Emergency Lease #U-52341, Hydrology of Emergency Lease #U-52341, page 8).

Therefore, Tower Resources' statement that no ground water will be discharged should be modified to provide information on how underground mine effluent will be treated in accordance with UMC 817.50 in the event that larger quantities of ground water are encountered than can be utilized underground.

Stipulation 817.50-(1)-DC

1. Within 30 days of permit approval for Emergency Lease #U-52341 the applicant must submit a plan for approval to the Division of Oil, Gas and Mining and the Division of Environmental Health for holding and treating of all mine water discharges. The plan must contain:

   A. Sampling of the discharge to demonstrate compliance with the effluent limitations of UMC 817.42.

   B. The discharge must be monitored for discharge rate and duration.

   C. The monitoring results must be submitted with the existing monitoring data under the currently approved sampling and reporting schedule.

   D. The applicant must obtain an NPDES Permit from the Utah Division of Environmental Health

UMC 817.52 Surface and Ground Water Monitoring - DC

Applicant's Proposal

Tower Resources is expanding its existing surface and ground-water monitoring plan to include Emergency Lease #U-52341. The existing monitoring plan was approved by the Division in January of 1982.

Baseline monitoring of surface and ground water was initiated in the fall and winter of 1980-81. Ground water samples were monitored in two existing water wells near the portal area and from a spring approximately one-half mile south of the portal area. The baseline information indicated that there is a wide seasonal variation in water quality from the spring and that the general trend for the quality for the ground water in the area was that the highest quality of water occurs at the highest elevations.

Operational monitoring was initiated in January of 1983. Sampling has been performed quarterly and data collected up to December of 1984 has been forwarded to the Division. Monitoring will be continued postmining and results submitted to the Division until the reclamation effort is approved by the Division (Addendum to Tower Resources' Approved Mining and Reclamation Plan for the Addition of Emergency Lease #U-52341, Appendix B).

Baseline surface water quality data were collected from four stock water ponds north of the mine plan area, a station at the mouth of Clearwater Creek and on Coal Creek east of the mine plan area. The general trend of the baseline data follows the strong regional trend for water quality to significantly deteriorate as the water flows down over the shales present in the area (Addendum to Tower Resources' Approved Mining and Reclamation Plan for the Addition of Emergency Lease #U-52341, Appendix B, page 33).

The applicant has surface water monitoring stations above and below the surface facilities on the right fork of Deadman Canyon. Additional surface monitoring stations are located on the small drainage basin just east of the right fork of Deadman Canyon, on the left fork of Deadman Canyon, and in Straight Canyon. All of the surface monitoring stations are located on ephemeral drainages. Sampling has been performed quarterly and data up to December 1984 has been forwarded to the Division. Surface water monitoring will continue on a quarterly basis, when accessible, during postmining operations and until the reclamation effort is approved by the regulatory agency (Addendum to Tower Resources' Approved Mining and Reclamation Plan for the addition of Emergency Lease #U-52341, Appendix B, page 42).

The hydrology for the Emergency Lease is essentially identical to that of the remainder of Tower's permit area and of the Book Cliffs region in general. Proposed mining of the Emergency Lease will have no significant impacts on the quality or quantity of either surface or ground water in the area. All proposed operations will be underground and confined to a limited area (Addendum to Tower Resources' Approved Mining and Reclamation Plan for the Addition of Emergency Lease #U-52341, Hydrology for Emergency Lease #U-53421, page 1).

The emergency lease is drained by ephemeral streams which run for the most part in a southerly direction. A major portion of the Emergency Lease is drained by Hoffman Creek, an ephemeral stream typical of the region. Hoffman Creek flows into Coal Creek which is a tributary of the Price River. Samples will be taken from Hoffman Creek on a quarterly basis when sufficient flow occurs. Hoffman Creek, however, normally flows only in direct response to snowmelt. Snowmelt runoff usually begins in early May. Results will be forwarded to the Division at such time that analyses are obtained (Addendum to Tower Resources' Approved Mining and Reclamation Plan for the Addition of Emergency Lease #U-52341, Hydrology of the Emergency Lease, page 14).

During field investigations of the Emergency Lease area, a spring was encountered at the mouth of Hoffman Canyon. Samples were taken from this source and have been forwarded to the Division. Samples will continue to be collected from this source on a quarterly basis as part of Tower's overall ground-water monitoring program (Addendum to Tower Resources' Approved Mining and Reclamation Plan for the Addition of Emergency Lease #U-52341, Hydrology for the Emergency Lease #U-52341, page 11).

Compliance

The applicant's plan to include one surface water station and one spring in Hoffman Canyon as part of the overall ground and surface water monitoring plan will be adequate to identify significant changes or impacts to the existing hydrologic balance due to mining activities in the emergency lease.

Stipulations

None.

UMC 817.71 Disposal of Underground Development Waste

Applicant's Proposal

The applicant states that no waste rock will leave the mine (Addendum B, page 6). All rock waste generated will be stored underground (Addendum B, page 9). Therefore, no surface treatment of waste will be necessary.

Compliance

The applicant complies with this section.

Stipulations

None.

UMC 817.97 Protection of Fish, Wildlife and Related Environmental Values

Applicant's Proposal

The applicant states that there will be no diminution or interference with the water supply of any owner due to the mining of the Emergency Lease (MRP Addendum, page 42). A spring (S-25) was

found at the mouth of Hoffman Canyon during field investigations of the Emergency Lease area. Samples will be taken from this spring on a quarterly basis as part of Tower's overall ground-water monitoring program (MRP Addendum, "Hydrology of Emergency Lease #U-52341," page 11). No water rights have been filed on this spring.

Compliance

The applicant has shown that there will be no loss of water supply to any owner of water due to mining of the emergency lease. However, the U. S. Fish and Wildlife Service has raised the concern that loss of surface waters could negatively impact wildlife (See June 17, 1985 letter attached to TA). Since both pre- and postmining land use of the permit area is grazing, wildlife habitat and recreation, the applicant should commit to the following stipulation to insure that wildlife habitat values are not diminished.

Stipulation 817.97-(1)-SCL

1. Within 30 days of approval of this modification, the applicant must commit to replace or mitigate loss of surface waters due to mining activity in the emergency lease and submit a plan for approval outlining how this will be done.

UMC 817.121 Subsidence Control

Applicant's Proposal

The applicant plans to mine only the Gilson Seam in the proposed lease area. Room and pillar design mining will be employed with pillar extraction on retreat. There are no structures, streams or springs present on the lease area. However, there is a spring just off the lease area (see Section UMC 817.54). The land is presently used for grazing and wildlife habitat and does not constitute a renewable resource area. Two subsidence monitoring stations are established on the lease area to measure subsidence (Plate IV, Addendum for addition of lease #U-52341).

Subsidence monitors will consist of lengths of appropriately sized rebar, cemented into the ground on 500 foot centers over an area of pillar extraction. The rebar will be situated such that an appropriate length protrudes above the surface. The elevations of the protruding rebar can then be surveyed periodically from established control points. Thus, any subsidence which may occur can be measured. These stations will be measured twice each year

for two years after extraction has been completed. The accuracy of measurement will be to one inch horizontal and vertical (Addendum B, page 9).

Compliance

The applicant has established that no material damage will occur to structures, streams or springs. However, mining under and near escarpments has resulted in large extension fractures and caving along escarpments where secondary mining has been conducted near escarpments at other mines in the area. To ensure that this type of damage is not significant, the applicant should submit the information that is requested under the following stipulation.

Stipulation 817.121-(1)-DD

1. The applicant shall submit the following information within 30 days of permit approval.

   A. An isopach map of the overburden above the Gilson coal seam for the mining area.

   B. An outline of mitigating measures to be taken to insure no subsidence occurs along escarpments.

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Moab District
P. O. Box 970
Moab, Utah 84532

IN REPLY
REFER TO:
3450
(U-066)

File ACT/017/018
File #2, 4
AUG 14 1984
Copy to Sue

Memorandum

To: Center Administrator, OSM, Denver

Attention: Dave Maxwell

From: District Manager, Moab

Subject: Addendum to Tower Resources' Approved MRP

We received the addendum to Tower Resources' approved MRP on July 23, 1984 which considers the addition of the 120-acre emergency coal lease U-52341 to their existing permit area. These additional coal reserves will be mined as an underground extension of the currently operating Pinnacle Mine. As such, additional surface disturbance will not be required. Therefore, significant surface impacts will not result from this addition to the permit area.

We hereby grant our final concurrence for the approval of this addendum to Tower Resources' approved MRP as proposed by the company insofar as protection of surface resources is concerned. Final concurrence in regards to coal recovery procedures and conflicts with future recovery of coal resources will be addressed by our State Office.

To Sue
File ACT/007/019 A
Folder 2

RECEIVED

AUG 27 1984

DIVISION OF OIL
GAS & MINING

3482
SL-0.7304
(U-921)

August 24, 1984

AUG 28 1984

Memorandum

To: Walter Swain, OSM Senior Project Manager for the State of Utah, Denver

Attn: Dave Maxwell

From: Chief, Mining Law and Solid Minerals, BLM, SO, Salt Lake City

Subject: Tower Resources, Inc., Centennial Project, Carbon County, Utah, Addendum to Approved Mining and Reclamation Plan (MRP)

The subject volume forwarded with your letter dated July 20, 1984, and identified as "Addendum to Tower Resources approved MRP for the addition of emergency lease No. U-52341" has been reviewed relative to 43 CFR 3482.1(c) rules and regulations.

Our review did not identify any conflicts with the approved coal recovery procedures or with future recovery of coal resources.

Repeatedly, throughout the text of this addendum, it states that, "All coal will be mined simply as an underground extension of the existing Pinnacle Mine Operation." The approved MRP includes a proposed mine plan map and an isopach drawing for the Lower Sunhyside seam (Apex Mine) that indicates there may be other mineable coal in the emergency lease No. U-52341 in addition to the proposed operations in the Gilson seam. Appropriate drawings should be furnished by the company if there is a potential for other mineable coal in Federal lease U-52341 or its assessment that none exists.

/s/ JACKSON W. MOFFITT

cc: Moab District
Tower Resources, Inc.
DOGM

Mine file
R Daniels
J Smith
file

RECEIVED

JUN 06 1985

DIVISION OF OIL
GAS & MINING

SUE

SL-027304

JUN 4 1985

Memorandum

To: Walter Swain, BLM Senior Project Manager, State of Utah, Denver

Attn: Mark Humphrey

From: Chief, Mining Law and Solid Minerals, BLM-SO, Salt Lake City, Utah

Subject: Tower Resources, Inc., Centennial Project, Carbon County, Utah, Addendum to Approved Mining and Reclamation Plan (MRP)

The subject addendum forwarded with your letter dated July 30, 1984, and identified as "Addendum to Tower Resources approved MRP for the addition of emergency lease No. U-52341" was reviewed and comments on by our memorandum dated August 24, 1984.

The plan as submitted stated,"This addendum... is merely for the incidental addition of a 120-acre Federal emergency lease to the Centennial Project. Reserves contained within this lease will be mined simply as an underground extension of the existing, approved, permitted and currently operating Pinnacle mine... access to and handling and extraction of all coal will be through existing Pinnacle mine (Gilson Seam) facilities. There are no other minable seams within this emergency lease." (Chap. II, page 3.) In our memorandum dated August 24, 1984, we requested additional information relative to potential minable coal in the Tower Sunnyside seam (Apex mine) within the emergency lease. A Tower Resources letter dated September 24, 1984, (copy attached) responded to our comments. In part, the letter stated, "Although the Tower Sunnyside seam occurs over this emergency lease, it is less than 4 feet in thickness and therefore not economically recoverable according to available technology. Consequently Tower has plans to conduct mining only in the Gilson seam." This statement was verified by checking coal isopach maps on file in the BLM - Price River Resource Area.

The proposed coal recovery procedures in the subject addendum comply with 43 CFR 3482.1(c) rules and regulations, and will safely obtain maximum recovery of the resource within the plan area using current technology and available mining equipment.

We concur with the underground mining part of the subject mining plan, as now amended, and recommend that it be approved.

/s/ JACKSON W. MOFFITT

bcc: [illegible] w/enclosure
[illegible] w/enclosure
[illegible] w/enclosure
Tower Resources
[illegible]
[illegible]
Docket
Solids File
Solids Chron

United States Department of the Interior

FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES
2060 ADMINISTRATION BUILDING
1745 WEST 1700 SOUTH
SALT LAKE CITY, UTAH 84104-5110

IN REPLY REFER TO:
(ES)

June 17, 1985

RECEIVED
JUN 19 1985
DIVISION OF OIL, GAS & MINING

MEMORANDUM

TO: Acting Deputy Administrator
Technical Services Center West
Office of Surface Mining
Denver, Colorado

ATTN: Mark Humphrey

FROM: Field Supervisor

SUBJECT: Tower Resources Emergency Lease U-52341

We have reviewed the Addendum and wish to elevate one potential concern. This concern may already be covered in the approved MRP; however, we do not have a copy. We would concur with the Addendum as long as it, or the MRP, has language indicating that loss of surface waters for wildlife use will be replaced or appropriately mitigated should mining result in their loss (i.e. Spring S25-1) or significantly impair their use.

Thank you for the opportunity to comment.

cc: DOGM, Salt Lake City, Utah ATTN: Susan Linner
DWR, Price, Utah
DWR, Salt Lake City, Utah
RO/HR, Denver, Colorado

STATE OF UTAH
NATURAL RESOURCES
Wildlife Resources

1596 West North Temple • Salt Lake City, UT 84116 • 801-533-9333

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Douglas F. Day, Division Director

November 18, 1984

Dr. Dianne Nielson, Director
Utah Division of Oil, Gas and Mining
4241 State Office Building
Salt Lake City, Utah 84114

Attention: James Smith

Subject: Tower Resources' Emergency Lease Addendum for MRP at Centennial Project

Dear Dianne:

The Division has evaluated Tower Resources' emergency lease addendum for the Mining and Reclamation Plan at their Centennial coal mining project. Since all operations will be conducted via existing facilities, there are no wildlife concerns for this company lease.

Thank you for an opportunity to review the MRP and provide comment.

Sincerely,

Homer O. Stevens Acting For

William H. Geer, Acting Director
DIVISION OF WILDLIFE RESOURCES

WHG:db

Orig Mailed
cc R. Daniels
M. Braach
S. Linner

File ACT/007/019A
Folder #2
Copy to Sue

RECEIVED

AUG 9 1984

DIVISION OF OIL
GAS & MINING

SCOTT M. MATHESON
GOVERNOR

STATE OF UTAH
DEPARTMENT OF COMMUNITY AND
ECONOMIC DEVELOPMENT

Division of
State History
(UTAH STATE HISTORICAL SOCIETY)

MELVIN T. SMITH, DIRECTOR
300 RIO GRANDE
SALT LAKE CITY, UTAH 84101-1182
TELEPHONE 801/533-5755

August 6, 1984

James W. Smith, Jr.
Oil, Gas & Mining
4241 State Office Building
Salt Lake City, Utah 84114

Attn: Susan Linner

RE: Addendum-Emergency Lease, Tower Resources, ACT/007/019(a), Folder No. 2, Carbon County, Utah

In Reply Refer to Case No. H184

Dear Mr. Smith:

The Utah Preservation Office has received for consideration a copy of the Emergency Lease for Tower Resources. After review of the submitted material, our office notes that the section concerning cultural resources states that this is an extension of underground mining, and that no new surface disturbance is anticipated under this action. If this is the case, our office has no comments at this time.

Since no formal consultation request concerning eligibility, effect or mitigation as outlined by 36 CFR 800 was indicated by you, this letter represents a response for information concerning location of cultural resources. If you have any questions or concerns, please contact me at 533-7039.

Sincerely,

James L. Dykman
Cultural Resource Advisor
Office of State Historic
Preservation Officer

JLD:jrc:H184/0671V

file ACT/007/019
Folder 2, 4
cc: Sue

STATE OF UTAH
NATURAL RESOURCES & ENERGY
Water Rights

636 West North Temple • Salt Lake City, UT 84116 • 801-533-6071

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Dee C. Hansen, State Engineer

RECEIVED
JUL 18 1984
DIVISION OF OIL
GAS & MINING

July 16, 1984

JUL 18 1984

Mr. James W. Smith, Jr., Administrator
Mineral Resource Development and Reclamation Program
Utah Division of Oil, Gas, and Mining
4241 State Office Building
Salt Lake City, Utah 84114

Dear Mr. Smith:

Re: Tower Resources, Centennial Project, ACT/007/019(a), Carbon County, Utah

The information comprising the Addendum-Emergency Lease for the above-mentioned project have been received and reviewed. It indicates that no new water impoundments are involved in the extension of the mining operation. No further comments beyond our letter of July 28, 1981, are needed.

Your truly,

Robert L. Morgan

for Dee C. Hansen, P. E.
State Engineer

DCH:rlm

cc: Mark Page, Area Engineer
Price Office

AFFIDAVIT OF PUBLICATION

RECEIVED

JUN 26

DIVISION OF OIL, GAS & MINING

STATE OF UTAH
County of Carbon, } ss.

I, Dan Stockburger, on oath, say that I am the General Manager of The Sun-Advocate, a weekly newspaper of general circulation, published at Price, State and County aforesaid, and that a certain notice, a true copy of which is hereto attached, was published in the full issue of such newspaper for Four (4) consecutive issues, and that the first publication was on the 5th day of June, 19 85 and that the last publication of such notice was in the issue of such newspaper dated the 26th day of June, 19 85

Dan Stockburger

Subscribed and sworn to before me this 26th day of June, 19 85

Holly Jo Baker
Notary Public.

My Commission expires My Commission Expires October 22, 1988 19 .....

Publication fee, $ 151.20

NOTICE OF COMPLETE PERMIT APPLICATION

BEFORE THE BOARD OF OIL, GAS AND MINING, DEPARTMENT OF NATURAL RESOURCES in and for the STATE OF UTAH. BEFORE THE OFFICE OF SURFACE MINING, RECLAMATION AND ENFORCEMENT, DEPARTMENT OF THE INTERIOR in and for the UNITED STATES.

IN THE MATTER OF THE ADDENDUM TO THE PERMANENT MINING AND RECLAMATION PLAN SUBMITTED BY TOWER RESOURCES, INC., P.O. BOX 902, PRICE, UTAH 84501, AS A PERMIT APPLICATION FOR FEDERAL EMERGENCY COAL LEASE U-52341.

Notice is hereby given that an Addendum to Tower Resources' approved Permanent Mining and Reclamation Plan for the Centennial Project has been submitted to the Division of Oil, Gas and Mining as a Complete Application for Permit to commence underground room and pillar coal mining on Federal Emergency Lease U-52341. Mining of Federal Emergency Lease U-52341 will be an extension of the existing underground workings of Tower Resources' Centennial Project and there will be no surface disturbance. The name of the existing and proposed activities is the Centennial Project and the person representing the company is Mr. Samuel C. Quigley, P.O. Box 902, Price, Utah, 84501.

Description of Federal Emergency Coal Lease U-52341 is as follows: Township 13 South, Range 11 East, S.L.B.M. Carbon County, Utah E½SW¼, SW¼SE¼, Section 7, consisting of 120 acres, more or less. The described lease is contained on the Deadman Canyon Quadrangle (Utah-Carbon County) of the United States Geological Survey 7.5-minute quadrangle map series (topographic). Access to said property is via Carbon County Road No. 299.

A copy of the Addendum to the Permanent Mining and Reclamation Plan submitted by Tower Resources is available for public inspection at the Office of the County Clerk of Carbon County, Carbon County Courthouse, Price, Utah. Any person aggrieved by the Addendum to the Permanent Mining and Reclamation Plan is hereby requested to submit written comments, objections, or requests for informal conferences on said applications within thirty (30) days, from the last date of this publication, to the Division of Oil, Gas and Mining, 355 West North Temple, 3 Triad Center, Suite 350, Salt Lake City, Utah 84180-1203 and to the Office of Surface Mining, Reclamation and Enforcement, Brook Towers, 1020 15th Street, Denver, Colorado 80202, setting forth factual reasons for his (her) complaint as to why this plan should not be approved.

Published in the Sun Advocate June 5,12,19, and 26, 1985.

U.S. DEPARTMENT OF THE INTERIOR
OFFICE OF SURFACE MINING, RECLAMATION AND ENFORCEMENT
NOTICE OF A DECISION AND AVAILABILITY
OF BOTH A TECHNICAL ANALYSIS AND AN
ENVIRONMENTAL ASSESSMENT FOR
TOWER RESOURCES, INC.'s
PERMANENT PROGRAM PERMIT REVISION
CENTENNIAL PROJECT MINES
CARBON COUNTY, UTAH

The United States Department of the Interior, Office of Surface Mining Reclamation and Enforcement (OSMRE), has approved, with conditions, a permit revision application for Tower Resources, Inc. to mine coal at its Centennial Project mines.

The Centennial Project underground coal mines are located in Carbon County, Utah, approximately 10 miles north northeast of Price, Utah. The mines have been in operation since 1980. The permit revision area covers approximately 120 acres. Maximum mine production will be approximately 1.8 million tons of coal per year during the life-of-mine through the year 2010.

Any person with an interest which is or may be adversely affected by this Federal permit approval action may request an adjudicatory hearing on the final decision within 30 days after publication of this notice, in accordance with Section 514(c) of the Surface Mining Control and Reclamation Act (SMCRA). Any hearing will be governed by provisions of 5 U.S.C. Section 554. A petition for review of the OSMRE decision should be submitted to:

Hearings Division
Office of Hearings and Appeals
U.S. Department of the Interior
4015 Wilson Boulevard
Arlington, Virginia 22203

Pursuant to 40 C.F.R. Sections 1501.4(c) and 1506.6, notice is hereby given that the Utah Division of Oil, Gas and Mining has completed a technical analysis (TA) for the addendum to permit application package for the Centennial Project mines, Carbon County, Utah. OSMRE has supplemented this TA with an environmental assessment (EA) drafted by the Bureau of Land Management for Emergency Lease No. U-52341. OSMRE's approval of permit application package with conditions and recommendation to approve Tower Resources, Inc. mining plan are in accordance with Sections 510 and 523 of SMCRA. For information or clarification concerning the approval of the Centennial Project mine modification plan, please contact Meg Estep or Richard Holbrook at (303) 844-2451, Office of Surface Mining Reclamation and Enforcement, Denver, Colorado.

Both the TA and the EA are available for public review at the following locations:

Office of Surface Mining Reclamation and Enforcement
Western Technical Center
1020 15th Street
Denver, Colorado 80202

Office of Surface Mining Reclamation and Enforcement
Albuquerque Field Office
219 Central Avenue, N.W., Room 216
Albuquerque, New Mexico 87102

Utah Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203