3 to 5 acres of soil would be disturbed. The effects of a maximum of 12 drill pads and 1 mile of new low grade road would be short-lived. Similar drill sites on the plateau have revegetated 2 to 3 years after rehabilitation. No prime or unique farmlands, flood plains, or alluvial valley floors would be affected by the proposal.

2. Alternate Ownership

Between 75-100 acres of surface disturbance is anticipated should alternate ownership and development of the lease occur. Part of this disturbance would be shortlived as described above, and the remainder would extend for the duration of the mining activities and beyond. These areas include permanent haulage roads, mine site, etc. Increased erosion at construction sites could not be avoided during the period of soil exposure, particularly during intense rainstorms. Studies in the area indicate that approximately 1.5 to 4.0 cubic yards of soil per acre per year could be eroded during the period of soil exposure. This is an increase of 1.0 to 3.0 cubic yards above the natural rate of erosion (Pacific Southwest Interagency Committee System, 1968). After rehabilitation is completed, erosion rates would decline to near normal levels. Normal productivity of disturbed and occupied soils would be lost for the duration of the disturbance.

E. Climate, Air Quality, and Noise

1. Coastal States Proposal

Some temporary reduction in local air quality (particulate matter) could be anticipated during exploratory activities. Trucks would continue to produce exhaust emissions at slightly increased rates as coal truck traffic would increase from an average of 9.6 to 11.1 trucks per hour. Trucks would also run an additional 1½ years. Localized sources of noise would occur during the 4-month exploratory program.

2. Alternate Ownership

Undetermined reductions in air quality could be anticipated during all phases of mine development, including road and powerline construction onto the proposed lease area, the construction of surface facilties, and exploratory drilling activities. Haulage of coal from the new mine would produce additional amounts of noise, dust, and engine emissions. All phases of new mine development would increase noise levels in the area an undetermined degree.

F. Fire

1. Coastal States Proposal

The risk of man-caused fires may be higher in the area as a result of increased activities; however, detection of fires also would be faster. Most additional surface activity would be limited to a single 4-month summer field season.

2. Alternate Ownership

The possibility of man-caused fires would increase as a result of men and equipment working in the area. These additional people would be in the proposed lease area for up to 25 years. They would also provide earlier detection of fires started by man or nature.

G. Fish and Wildlife

1. Coastal States Proposal

The 4-month exploratory drilling program would temporarily displace wildlife species on a local basis. Most notable would be mule deer which utilize the area for summer range. Elk are usually found in the area only during winter months and would not be affected.

Road and drill pad construction would cause the loss of 3 to 5 acres of vegetation used by wildlife for food and cover. This loss would continue until revegetation is successful (2-3 years). Loss of this vegetation would reduce the carrying capacity for deer by one deer (or less) annually.

Loss of wildlife habitat due to elimination of surface water sources cannot be avoided.

Wildlife highway mortality could not be avoided and the mortality associated with the proposed action would continue for the extended life of the mine. Deer highway mortality on I-70 in Salina Canyon could increase by 16 percent or 16 deer annually.

The proposed action would not be expected to adversely affect the endangered bald eagle or peregrine falcon which may occur in the area.

2. Alternate Ownership

Vegetation would be disturbed and removed on 75-100 acres. Any of the environmental disturbances described above would increase both in space and duration. Loss of 75-100 acres of deer and elk range could not be avoided. Lost carrying capacity for deer would range from 7 to 25 deer annually. Wildlife populations would be reduced in those areas immediately surrounding areas of heavy and sustained activity.

Increased wildlife highway mortality of up to 16 deer annually could not be avoided and would continue for the life of the mine.

Impacts to threatened or endangered species would not be anticipated.

H. Vegetation

1. Coastal States Proposal

Surface disturbing activities would temporarily disturb 3 to 5 acres of vegetation during the 4-month exploration program. With proper

rehabilitation these acres could be brought back into production within a 2-3 year period.

Two springs located adjacent to the proposed lease area could dry up as a result of mining activities. Vegetation surrounding the springs could die and be replaced by a dryland vegetative type. Less than one-fourth of an acre of vegetation could be affected.

Any proposed threatened or endangered species in the area would be avoided when proper clearances are made prior to on-the-ground activities.

2. Alternate Ownership

In addition to those impacts described above, vegetation would be disturbed and removed on 75-100 acres. Much of this would extend for the life of the mine as the land would be used for haulage roads, mine sites, etc.

The probability of encountering possible threatened or endangered plant species would be enhanced with increased soil disturbance. However, if proper clearances are made, these species could be avoided.

I. Socioeconomics

1. Coastal States Proposal

The city and county tax base and total regional income associated with continued coal mining would contribute to the Salina and Sevier County business economy. Increases in the work force at the mine would increase the total regional income.

These additional jobs would induce some of the local young people, who would normally leave the area, to stay as well as providing additional sources of income for long-time residents. Support businesses such as food stores, gasoline stations, restaurants, etc., would benefit since much of the anticipated additional income would be spent locally. No significant housing shortages would be anticipated.

2. Alternate Ownership

Socioeconomic impacts are difficult to define since no proposal for another mine in the area has been made. Therefore, the number of people and kinds of equipment involved are not known. It can be assumed that the impacts would be similar to other mines in the general area; approximately 150 employees would be involved. An undetermined number of "outsiders" would probably move into the area bringing extra incomes and causing possible housing shortages.

J. History, Archaeology, and Paleontology

1. Coastal States Proposal and Alternate Ownership

Proper clearances made prior to on-the-ground activities would protect cultural values which otherwise could be damaged or destroyed.

K. Public Health and Safety

1. Coastal States Proposal and Alternate Ownership

Coal truck traffic would increase from an average of 9.6 trucks per hour to 11.1 trucks per hour for the life of the mine.

L. Timber Management

1. Coastal States Proposal and Alternate Ownership

The more extensive activities associated with alternate ownership would probably require the removal of some timber species. No tree removal is anticipated for Coastal States' proposal.

M. Range Management

1. Coastal States Proposal and Alternate Ownership

Should the lease be issued to Coastal States, less than 1 percent of the total forage or 2 AUM's would be temporarily lost. No existing range improvements would be affected. Reduction or loss of flow from the two springs near the proposed lease area would alter distribution of grazing livestock. Additional pressure would be placed on other water sources in the area.

An undetermined amount of forage would be taken out of production as a result of construction of new haul roads, mine facilities, etc. by an alternate lessee. Assuming that 100 acres of forage were taken out of production, the result would be the loss of about 7 AUM's which represents approximately 3.7 percent of the allotments affected. No permanent range improvements would be affected.

N. Recreation and Aesthetics

1. Coastal States Proposal and Alternate Ownership

Activity associated with alternate ownership would affect the aesthetic quality of the area by building access routes onto the lease area and the construction of new surface mining facilities.

Little, if any, interference with hunting activities would be anticipated.

Construction of four air intake portals on the vertical cliffs of Convulsion and Quitchupah Canyons would alter the visual quality of the topography near the portals. This disturbance is expected to be minor as similar portals in the area are difficult to see. Each portal would be 8 by 20 feet and enclosed by a wire cover.

O. Transportation

1. Coastal States Proposal and Alternate Ownership

Coal traffic would increase from 9.6 to 11.1 trucks per hour, 6 days a week, 20 hours a day.

P. Research, Administration, and Special Uses

1. Coastal States Proposal and Alternate Ownership

No environmental impacts are anticipated.

Q. Wilderness and Roadless Areas

1. Coastal States Proposal

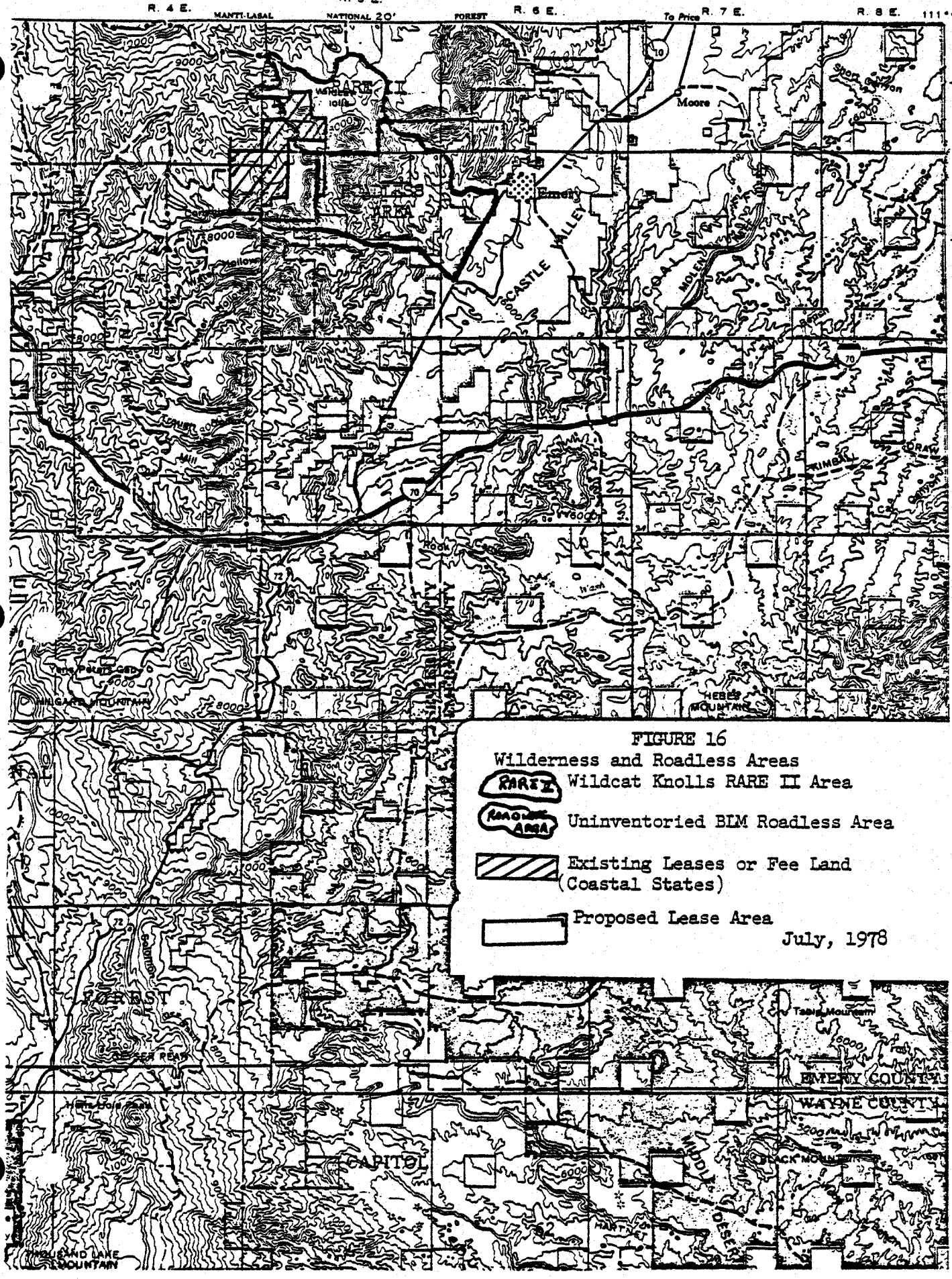
Phase I underground mining of coal from some 50 acres of the proposed lease area would not alter the wilderness characteristics of the area. There would be no additional surface facilities located on the lease sale tract if it is mined from the existing facilities.

Possible roadless and wilderness values of BLM administered lands on the proposed lease area likewise would not be affected by lease issuance. Phase I mining would occur on some 60 acres but no subsidence would be expected. No surface activities would occur.

2. Alternate Ownership

If an entity other than Coastal States obtains the lease, possible development on the RARE II area would be necessary. Should surface facilities be constructed in Quitchupah Canyon, loss of possible wilderness values would occur as access or haulage roads and mining facilities are inherently incompatible with wilderness values.

Possible roadless or wilderness values on BLM administered lands on the proposed lease area would be lost if surface disturbance were allowed.


R. 4 E.
R. 5 E.
R. 6 E.
R. 7 E.
R. 8 E.
111°00'
39°00'
T. 21 S.
T. 22 S.
T. 23 S.
T. 24 S.
T. 25 S.
T. 26 S.
T. 27 S.
MANTI-LASAL NATIONAL FOREST
To Price
Moore
Emery
CASTLE VALLEY
COAL
RARE II AREA
WILDCAT KNOLLS
Wildcat Knolls RARE II Area
Uninventoried BLM Roadless Area
Existing Leases or Fee Land (Coastal States)
Proposed Lease Area
July, 1978
FIGURE 16
Wilderness and Roadless Areas
EMERY COUNTY
WAYNE COUNTY
CAPITOL
MIDDLE DESERT
HEBER MOUNTAIN
MANTI-LASAL NATIONAL FOREST

CHAPTER VI

RELATIONSHIP BETWEEN SHORT-TERM USE OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Subsidence and surface fractures would be permanent surface deformation features directly related to mining. Approximately 922 acres would be subject to subsidence in addition to approximately 1,021 acres resulting from mining activities on existing leases (WESTECH, 1977). Proposed mining activities and resultant subsidence would preclude the placing of any permanent structures on the proposed lease area. Two springs located near tne proposed lease area may dry up or have reduced flows resulting from expanded mining. Some change in wildlife and livestock distribution would result, but is not expected to be significant.

Soils disturbed by the expanded mining activities (3-5 acres for Coastal States or 75-100 acres for alternate ownership) would be taken out of vegetative production and committed to mining activities. Duration would range from a single growing season (associated with exploration activities) to an essentially permanent loss resulting from construction of haulage roads, mine site, etc. which would be associated with alternate ownership. Those lands which could be revegetated would eventually return to previous production levels.

Development of possible oil and gas reserves on the proposed lease area may be made difficult by extraction of the coal. Coordination efforts between interested parties would be necessary.

Coastal States would hire an additional 51 employees in the near future from the local population in Sevier and Sanpete Counties. The city and county tax base and total regional income associated with expanded mining would contribute to the Salina and Sevier County business economy. It is assumed that under an alternate owner, approximately 150 employees would be required. Some of these would be brought into the area.

The purpose of the proposed action is to provide a supply of coal for the generation of electricity and other industrial uses. The use and commitment of about 21 million tons of coal (14 million tons recoverable, the remainder unrecoverable) involves a tradeoff between presently needed coal and other energy resources, some of which are in short supply. The use of this coal would help alleviate shortterm energy demands and would constitute utilization of a natural resource, thus contributing towards the nations self-sufficiency in energy.

Coal extraction represents an immediate commitment of the resouce. Improvement in underground mining techniques, resulting in greater recovery rates than experienced at the present, can be expected in the future. Coal-fired electric generating plants, such as the proposed Volmy Plant to which this coal would probably go, are relatively inefficient. About 33 percent of the fuel energy is converted into electrical energy (Karkheck, et al., 1977). Future technology could improve efficiency.

The construction of an access road into relatively undisturbed Quitchupah Canyon would affect the visual qualities of the area. The haulage roads and mine sites would probably be visible after mining activity ceases.

CHAPTER VII

ANY IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

A. Geology and Topography

1. Coastal States Proposal

Mining the lease area following the issuance of a lease would result in the irreversible and irretrievable commitment of 922 acres (35 percent of the proposed lease area) to subsidence. Subsidence would be expressed as surface deformation caused by depressions 8 to 20 feet in depth, and as tension cracks on the ground surface. Such tension cracks most likely would not be expected to exceed 1 foot, either vertically or in width.

2. Alternate Ownership

Irreversible and irretrievable commitments of resources would be similar to those described for the Coastal States proposal.

B. Mineral Resources

1. Coastal States Proposal

The proposal would require the irretrievable commitment of 14 million tons of coal at a 66 percent recovery rate. The remaining 34 percent, or 7 million tons of coal would be permanently lost for use because of its inaccessibility after mining of the recoverable coal.

2. Alternate Ownership

Alternate ownership would result in the irretrievable commitment of coal at a recovery rate of 45 to 60 percent. The remaining 8.4 to 11.5 million tons of coal would be permanently unavailable for use because of the need to leave barrier pillars between Coastal States' operation and a new mine.

C. Hydrology

1. Coastal States Proposal

Subsidence may cause the irretrievable loss of flow from two local upland springs. The likelihood of this occurring cannot be accurately predicted as it is unknown whether these springs may heal themselves and again establish normal or near-normal flows.

2. Alternate Ownership

A similar irretrievable commitment of water resources may occur, as indicated for the Coastal States Proposal.

D. Fish and Wildlife

1. Coastal States Proposal

Should subsidence cause the irretrievable loss of flow from two local upland springs, there would be an accompanying irretrievable loss of wildlife habitat in an undetermined amount.

Deer mortality on I-70 in Salina Canyon would represent an irretrievable loss of 16 additional deer annually, or 320 deer during the 20-year life of the proposal. This loss would be in addition to losses attributable to the present level of mining by Coastal States.

2. Alternate Ownership

The irretrievable loss of wildlife habitat subsequent to subsidence would be similar to that described for the Coastal States Proposal.

Deer mortality associated with coal haulage on access roads and I-70 in Salina Canyon, and commuting miners would cause an irretrievable loss of animals. The number that would be lost cannot be quantified because of the lack of data on yearly tonnage production, coal haul route, and daily traffic attributable to coal production by an alternate lessee. The increased loss would continue for the projected 25-year life of the proposal.

In addition, an undetermined amount of deer and elk range would be irretrievably lost because of road construction and other surface disturbance.

E. Vegetation

1. Coastal States Proposal

The possible irretrievable loss of flow from two springs located adjacent to the proposed lease could cause an irreversible change in vegetation composition on less than one-fourth of an acre of vegetation around the springs.

2. Alternate Ownership

The irreversible change in vegetation composition around the two springs would be similar to that described for the Coastal States Proposal.

Additionally, an undetermined amount of vegetation would be irretrievably lost by road construction and other surface disturbance.

F. Range Management

1. Coastal States Proposal

No irretrievable or irreversible commitments of range resources would occur.

2. Alternate Ownership

An undetermined amount of AUM's would be irretrievably lost. This loss would be less than the 7 AUM's described in Chapter II.

G. Recreation and Aesthetics

1. Coastal States Proposal

No significant irretrievable or irreversible commitments of recreation and aesthetic resources would occur.

2. Alternate Ownership

The presence of access on the vertical cliffs of Convulsion and Quitchupah Canyons would cause a major irretrievable and irreversible commitment of aesthetic qualities.

H. Wilderness and Roadless Areas

1. Coastal States Proposal and Alternate Ownership

No irretrievable or irreversible commitment of wilderness or roadless values would result from lease issuance if no surface disturbance were allowed until a determination of wilderness character is made. If the areas are determined not to have wilderness values, then possible surface activities could proceed.

CHAPTER VIII

NO ACTION ALTERNATIVE

Adoption of this alternative would preclude mining the coal on the proposed lease area at this time.

Selection of this alternative would not result in any additional impacts on biological or physical components of the environment over and above those currently occurring in connection with existing operations and uses in the area.

No adverse impacts on the social economic component of the environment would occur, however anticipated jobs resulting from lease issuance and support services would not materialize.

Coastal States would continue to mine from existing holdings. Production levels would be reduced and some difficulty may be encountered in extending some of the existing contractural commitments. Coastal States estimates that they will lose an estimated 2,205,199 tons of otherwise recoverable coal from their existing reserves if the lease is not issued (Appendix 3). This coal would not be available to consumers.

CHAPTER IX

RECORD OF INVOLVEMENT

During preparation of the original EAR's, the following were consulted:

U.S. Geological Survey. Provided advice on actions and activities that would result from the proposal.

Utah Division of Wildlife Resources. Indicated that the proposal would have no significant increase of impacts over present mining activity so far as wildlife is concerned. They have no objection to the proposed action.

Local Residents of Aurora and Salina, Utah. Several persons were contacted individually. The consensus was favorable toward the proposal.

Emery Irrigation Company. Two efforts were made to contact them. One contact was made by letter, but no reply was received. One contact was made by phone, a message left for a return call, but there was no reply. This was interpreted as non-committal.

Quitchumpah Cattlemen. Their opinion was no objection to the proposed action.

U.S. Fish and Wildlife Service. The Salt Lake City office reviewed the draft EAR and agreed with the analysis and conclusions with regard to threatened and endangered species.

A public meeting was held on December 21, 1976, in Price, Utah, to discuss the Coastal States and Kanawha and Hocking Coal and Coke Company lease proposals. Copies of the U.S. Forest Service and BLM minutes are attached as Appendix 4. The public meeting was also intended to obtain information for inclusion in the original EAR. (Coastal States EAR dated March, 1976.) Representatives from the Fishlake National Forest presented information on the proposed lease, related proposal activities, existing environmental data, and anticipated environmental impacts. Representatives from Coastal States also presented information on the proposed lease and anticipated development.

Twenty-seven people attended the meeting. The majority of attendees represented governmental agencies and industry interests, No environmental interests were represented.

No adverse reaction to the proposed lease or any anticipated environmental impacts was expressed at the meeting. A review of U.S. Forest Service and BLM records reveal no public ocncern over leasing the proposed lease area.

Based upon an evaluation of the public meeting and a lack of expressed concern over the proposed lease, the U.S. Forest Service and BLM determined that another public meeting was not warrented. It is believed that no new significant issues and environmental concerns were suggested in this environmental assessment; thereby indicating a need for additional public involvement through another meeting.

Coastal States Energy Co.
Recommended Stipulations
Coal Lease

The following stipulations are recommended to be included as terms for coal lease application no. U-28297, Coastal States Energy Co.

The Area Mining Supervisor shall mean the authorized representative of the U.S. Geological Survey. The authorized officer of the surface management agency shall mean Forest Supervisor, U.S. Forest Service.

Lease Stipulations

(1) All operations will be conducted to protect the aesthetic and scenic values. Consideration will be given site selections to reduce adverse visual impacts. Where alternative sites are available, the alternative involving the least damage to the scenery and other resources shall be selected if it is comparable from a technical standpoint with the proposed development site. Permanent structures and facilities will be designed to be architecturally compatible with the surrounding landscape where possible, will harmonize with the natural landscape, and screening techniques will be employed to reduce scenic impacts. The use of a qualified landscape architect may be required by the Area Mining Supervisor in consultation with the authorized officer to design and achieve a final landscape compatible with the natural surroundings. Alteration or removal of the vegetative cover, specifically trees or shrubs, is to be accomplished to achieve the effect of natural-occurring vegetative openings. Construction practices requiring the alteration or modification of the existing topography will be accomplished in such a manner that the modified landscape will be compatible with and graded into the adjoining land form. The creation of unusual, objectionable, or unnatural land forms and vegetative landscape features will be avoided.

(2) Permanent and semi-permanent buildings and similar surface structures shall be painted a color that blends or conforms to the natural background color of the surrounding area.

(3) The lessee will be held responsible for compliance with state and federal laws pertaining to protection of cultural and paleontological values. Prior to entry upon the land to conduct surface disturbance activities, a complete inventory of all cultural and paleontological values of the area to be disturbed or occupied may be required by the authorized officer, surface management agency, or Area Mining Supervisor. The survey will be completed by a qualified professional approved by the authorized officer and Area Mining Supervisor. An acceptable report of the results and information of the survey will be provided to the authorized officer and Area Mining Supervisor. If any cultural values are observed during operations, they will be left intact and the Area Mining Supervisor and the authorized officer surface management agency notified.

The lessee will be required to take such measures as deemed necessary to preserve or avoid destruction of antiquities. This may include an intensive survey and salvage of artifacts, relocation of proposed facilities or other protective measures deemed necessary by the authorized officer to facilitate protection. All costs by the survey and salvage of artifacts will be borne by the lessee and all objects of antiquity salvaged will remain under the jursidiction of the U.S. Government.

(4) The lessee shall conduct his mining and exploration operations in such a manner as to minimize, as practical, the effects on water flow or the availability of waters for surface use. Loss of water due to the lessee's operations shall be prevented, replaced, or the situation corrected to the satisfaction of the authorized officer and Area Mining Supervisor. The lessee shall assume full responsibility and liability for damages due to the loss of surface waters resulting from the mining or other operations conducted under this lease.

(5) The lessee shall perform an adequate 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 Area Mining Supervisor prior to approval of the mining plan. The study shall provide such data and information as considered necessary by the Mining Supervisor and authorized officer.

(6) The lessee will be required to establish a surface subsidence monitoring system to measure the effects of the underground mining activities on the land surface. A satisfactory series of monitoring points shall be established on the lease area. The monitoring shall be conducted by a method and in a manner approved by the Area Mining Supervisor. The results of the monitoring shall be reported periodically to the Mining Supervisor and authorized officer. The Area Mining Supervisor in consultation with the authorized officer, may require the lessee to employ such measures and precautions deemed necessary, including mining methods and extent and manner of coal extraction to assure that neither damage to man made structures nor loss of perennial streams occurs, nor hazardous conditions are created.

(7) 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).

(8) The lessee will be held responsible for the protection of the habitat of any endangered plant species. Prior to entry upon the land to conduct surface disturbance activity, the lessee shall conduct an inventory for any threatened and endangered plant species that may occur in the area to be impactsd. The survey shall be completed by a qualified professional approved by the authorized officer and Area Mining Supervisor. An acceptable report of the findings including the location, distribution, and habitat requirements of the plants

on the lease area shall be provided to the authorized officer and Area Mining Supervisor. No facilities or surface disturbance activities will be located in areas considered by the authorized officer or Area Mining Supervisor necessary to protect the plant species. All costs of the survey will be borne by the lessee and all specimen collected will remain under the jurisdiction of the U.S. Government.

(9) In order to protect wintering and calving elk, exploration, drilling and other development acitivity will be allowed only during the period from July 1 through October 31. Exceptions to this limitation in any year may be specifically authorized by the authorized officer.

(10) Proper precautions will be taken at all times to prevent and supress fires. The lessee will be held responsible for suppression and rehabilitation costs for any fires on the national resource lands caused by the negligence of his operators, employees, contractors, or subcontractors. Fire lines and clearing shall be built and maintained in the vicinity of stationary machinery, portals, vents, and shafts or other facilities where fire could originate. All internal combustion engines shall be equiped with properly functioning spark arresters or mufflers.

(11) All survey monuments, witness corners, reference monuments and bearing trees must be protected against destruction, obliteration, or damage. Any damaged or obliterated markers must be re-established at the lessee's expense, in accordance with accepted BLM survey practices as set forth in the Manual of Surveying Instructions. A complete record of the monumentation and the methods used in re-establishment will be furnished to the Chief, Branch of Cadastral Survey at the appropriate State Director's Office, BLM.

(12) Upon cessation of the use of all or any part of the lease surface for constructions, exploration, or operations, all disturbed areas will be reclaimed and returned to a postmining land use consistent with those USCS defined in 30 CFR 715.13(c)(6) & (8).

(13) In accordance with Sec. 523 (b) of the "Surface Mining Control and Reclamation Act of 1977," surface mining and reclamation operations are to conform with the requirements of this Act and the regulations issued pursuant to this Act.

(14) It is mutually understood that portions of the following described lands embraced in this lease have been identified as roadless areas and must be evaluated for their wilderness potential:

T. 21 S., R. 5 E., SLM, Sevier County, Utah
Sec. 33 W½SW¼
T. 22 S., R. 5 E., SLM, Sevier County, Utah
Sec. 4 W½W½

Depending on the results of the evaluation, the areas in question may be determined as suitable for further wilderness study, or not suitable for wilderness. Those areas determined as suitable for wilderness may ultimately be classified as wilderness.

A. Existing roads, if any, may be used for temporary access in a non-destructive manner, but may not be reconstructed, improved, or graded.

B. Where temporary access is needed to an area not served by an existing road, methods of access not resulting in erosion, scars, or environmental damage shall be used.

C. Where long term access or development is desired, or where the method to be used will possibly cause environmental damage, an application for such access or development shall be filed with the Authorized Officer and the District Manager, BLM involved. Such application shall include the nature of the proposed access or development, any measures proposed to minimize the environmental impact, including proposed restoration measures, and a map of the location and the access or development. The Authorized Officer and District Manager, BLM will coordinate the porposal with the Area Mining Supervisor, and based upon such coordination and agreement reached with the United States Geological Survey, will either approve the proposal, conditioned upon necessary protective measures, or will disapprove the proposal.

D. This clause shall become inoperative in the event the area is determined as not suitable for wilderness.

E. If the area, or part of it, is determined as suitable for wilderness study, this clause shall remain in full force and effect until the area is either classified for wilderness or is formally rejected for such classification. If the area is classified as wilderness, this lease shall become subject to the provisions of the Act of September 3, 1964 (78 Stat. 893), and as appropriate, the Forest Service and Bureau of Land Management regulations and policies pertaining thereto.

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Sevier River Resource Area
P.O. Box 705
Richfield, Utah 84701

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STAFF REPORT

Title: Threatened and Endangered Plants: A Literature Search for the SUFCO Coal Lease U-28297

Date: April 10, 1978

Authors: Larry R. Greenwood and John C. Likins

Introduction

This report will discuss the literature search efforts made for threatened and endangered plant species in the SUFCO Coal Lease U-28297 area. This report will be incorporated into the EAR for the lease.

Coal Lease U-28297 is located in Sec. 32 and 33, T. 21 S., R. 5 E., and Sec. 5,6,7,8,17, and 18, T. 22 S., R. 5 E. This area is situated atop the Old Woman Plateau in Sevier County. The elevation ranges from about 7,000 to 9,000 feet in the lease. The lease area contains approximately 3,000 acres, with 2,800 acres on the Fishlake National Forest and 200 acres on public land. Soils for the lease area are mostly shallow and fall into the sandy to silty texture classes. Parent material is sandstone and limestone with shallow shale outcrops. The Quitchupah Creek area, in particular contains Mancos shale outcrops.

Since the majority of the lease area is on national forest land we consulted with the Richfield Ranger District, Fishlake National Forest for the vegetative community mapping and type write-up sheets. Darrell Hintze was very helpful in providing assistance and access to their files. An enclosed topographic map with a vegetative type overlay illustrates the present vegetative communities for the lease area. Copies of the type write-up sheets are also enclosed

The vegetative communities within the lease area are sagebrush-grass (4), mountain shrub (5), grassland (1), and coniferous forest with openings of sagebrush-grass-forb (6). A large portion of the lease is rimrock (7) which forms the plateau boundary.

Analysis of the site write-up sheets indicates that Penstemon spp., Astragalus spp., Hymenoxys spp., and Festuca spp. are present in the vegetative communities atop the plateau. Threatened and endangered species of the above genera could possibly be present within the lease area, according to Dr. Stanley L. Welsh, BYU. (See enclosed staff report of 4-5-78 by Larry R. Greenwood).

Literature Search

We reviewed the literature listed in the reference section of this report to establish a probable list of T&E species which might be present within the lease area. This list (#1) contained sixteen species which, according to the literature have been found growing in Sevier County, Utah.

We expanded this initial list (#1) by consulting the final report by Dr. Stanley L. Welch on T&E plant species for the Cedar City and Richfield Districts of BLM, 1976, and the topographic maps showing the collection locations. We looked for similar habitats and elevations in other counties which we believed would be similar to the lease area.

From this expanded list (#2) of thirty species we analyzed the site conditions of previous collection locations and arrived at a list (#3) of nine species, which we felt had a good possibility of growing in the lease area. This list (#3) and the expanded list (#2) of the thirty species was discussed with Dr. Welsh at BYU in Provo, Utah by Larry R. Greenwood on April 5, 1978. The results of this consultation with Dr. Welsh will be discussed in the next portion of this report. (See appendix for species lists #1-3)

Personal Contact

On April 3, 1978, Dr. Stanley Welsh was contacted at his office at Brigham Young University. Preliminary lists 2 and 3 (Appendix) were looked at by Dr. Welsh. From these lists and from his unpublished manuscript (Welsh 1978) he identified seven plant species which would possibly be on the coal lease area. The species and their status are:

*Astragalus loanus	Threatened
Festuca dasyclada	Possibly extinct
Hymenoxys depressa	Threatened
*Penstemon abietinus	Threatened
Penstemon wardii	Threatened
Sclerocactus wrightiae	Endangered
Townsendia aprica	Endangered

All of these species are presently on the threatened and endangered list for Utah. However, two (*) have been recommended to be removed from the list (Welsh 1978).

Dr. Welsh was familiar with the area of the coal lease, Apparently he had worked as a private consultant in identifying threatened or endangered species for an adjacent coal lease area. He identified the top edge of the rimrock, which runs north and south across the lease, as having the greatest potential for possible T&E plants.

Dr. Welsh strongly recommended that a qualified private consultant be hired to make an on-site T&E plant inventory of the lease. Qualified private consultants in Utah are:

Dr. S. L. Welsh	Brigham Young University
Art Holmgren	Utah State University
Duaine Atwood	U.S. Forest Service

For further comments by Dr. Welsh see staff report dated April 5, 1978 in appendix.

Recommendations

We feel that the seven plant species that Dr. Welsh identified above are the most likely T&E species to be in the lease area. However, they may not be the only species present. A qualified private consultant should be hired to make an on-site T&E plant survey of the lease area. This will ensure positive determination as to the presence or absence of T&E plants in the area.

Larry K. Greenwood

John C. Likins

References Reviewed and Cited

U.S. Forest Service, Intermountain Region, 1977. Data summary of proposed endangered or threatened plant species.

Welsh, S.L., 1976. Proposed threatened, endangered, presumed extinct, or extinct and disjunct relict plants in the Cedar City and Richfield districts, Utah. Final Report, Bureau of Land Management, unpublished mss. 205 pp.

Welsh, S.L. 1977. Endangered and threatened plant species of the Central Coal Land, Utah. Final Report, Interagency Task Force on Coal, U.S. Geological Survey. 422 pp. (Topographic Maps).

Welsh, S.L. 1978. Endangered and threatened plants of Utah, a re-evaluation. Brigham Young University. Unpublished manuscript. 39 pp.

Welsh, S.L., N.D. Atwood, and J.L. Reveal. 1975. Endangered, threatened, extinct, endemic and rare of restricted Utah vascular plants. Great Basin Naturalist. 35: 327-376.

Personnel Consulted

Max Robinson	Range Conservationist, Richfield D.O. BLM
Mary Gillio	Botanist, Richfield D.O. BLM
Marv Turner	Range Conservationist, U.S. Forest Service
Stanley Welsh	Brigham Young University
Darrell Hintze	Richfield Ranger District, USFS
Chuck Horsburgh	Geologist, Richfield D.O. BLM
Rulon Duncan	Chief of Planning Staff, Richfield D.O. BLM

T&E Species List #1

1) *Astragalus bodinii*
2) *Astragalus loanus*
3) *Castilleja scabrida*
4) *Cymopterus coulteri*
5) *Cymopterus rosei*
6) *Eriogonum ostlundii*
7) *Geranium marginale*
8) *Lupinus marianus*
9) *Mentzelia argillaceae*
10) *Penstemon abietinus*
11) *Penstemon leiophyllus*
12) *Penstemon wardii*
13) *Phacelia demissa* var. *heterotricha*
14) *Phacelia utahensis*
15) *Sclerocactus pubispinus*
16) *Townsendia aprica*

T&E Species List #2

1) Astragelus bodinii
2) Astragalus brandegei
3) Astragalus henri-montanensis
4) Astragalus lentiginosus var. chartaceus
5) Astragalus loanus
6) Castilleja scabrida
7) Cryptantha jonesiana
8) Cymopterus coulteri
9) Cymopterus rosei
10) Eriogonum intermontanum
11) Eriogonum ostlundii
12) Geranium marginale
13) Gilia caespitosa
14) Gilia mcvickerae
15) Hymenoxys depressa
16) Lesquerella rubicundula
17) Lomatium minimum
18) Lupinus marianus
19) Mentzelia argillaceae
20) Oxytropis jonesii
21) Penstemon abietinus
22) Penstemon leiophyllus
23) Penstemon wardii
24) Phacelia demissa var. heterotricha
25) Phacelia utahensis
26) Physaria grahamii
27) Sclerocactus pubispinus
28) Silene petersonii var. petersonii
29) Talinum validulum
30) Townsendia aprica

T&E Species List #3

1) Astragalus bodinii
2) Astragalus loanus
3) Cymopterus rosei
4) Geranium marginale
5) Lupinus marianus
6) Penstemon abietinus
7) Penstemon leiophyllus
8) Penstemon wardii
9) Townsendia aprica

IN REPLY REFER TO

4115
U-503

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Sevier River Resource Area
P.O. Box 705
Richfield, Utah 84701

STAFF REPORT

TITLE: Threatened and Endangered Plants - Dr. Stanley Welch

DATE: April 5, 1978

AUTHOR: Larry R. Greenwood, Range Conservationist

On April 3, 1978 I talked with Dr. Welch on possible threatened or endangered plants for coal lease U-28297, located east of the present Convulsion Mine (T. 22 S. R. 5 E.). He identified seven plant species which could possibly be on the coal lease area. The species are:

*Astragalus loanus	Threatened
Festuca dasyclada	Possibly extinct
Hymenoxys depressa	Threatened
*Penstemon abietinus	Threatened
Penstemon wardii	Threatened
Sclerocactus wrightiae	Endangered
Townsendia aprica	Endangered

Of these seven possible threatened or endangered species, two have been recommended to be removed from the T&E list for Utah (Welch 1978). They are asterisked above.

After discussing the above plant species, Dr. Welch made some general comments about threatened and endangered plant species, which I feel are well worth keeping in mind.

First, he stated that when dealing with coal leases, powerline right-of-ways or any other situation which requires threatened or endangered plant species clearance, a qualified private consultant should be hired. This, he said, will ensure the protection of you, your agency and the responsible company, from being sued for destruction of threatened or endangered plant species. Qualified private consultants in Utah are:

Dr. S. L. Welch	Brigham Young University
Art Holmgren	Utah State University
Duaine Atwood	U.S. Forest Service

Being able to positively identify T&E plants in the field, and through the various stages of growth, is the key to being a qualified consultant.

The following is an example which emphasizes the importance of having a qualified person examine proposed sites.

Dr. Welch examined a proposed drill site and identified a threatened plant species. Through his knowledge and experience he knew that this plant species did well on disturbed sites. He therefore recommended to go ahead and drill at the site. In this specific instance, the disturbance of a few plants, resulted in a noticeable increase in plant number. Thus enhancing that particular species in the area.

Secondly, Dr. Welch stated that many companies and organizations have the wrong ideas and attitudes about the concept of threatened and endangered plant species. He said that he had personally worked with several companies which thought that if threatened or endangered species were found anywhere on the proposed site, that the whole operation would be dropped. This, he said is the wrong idea in almost every instance, simply because it would be a rarity to encounter enough T&E plant species to cancel out a proposed lease area etc, entirely. Or, as is explained in the preceding example, disturbance may enhance particular species. Dr. Welches concept of working with threatened or endangered plant species is as follows:

1) The proposed lease area etc. should be inventoried for T&E plant species by a qualified person or persons.

2) Specific T&E plant specie sites, if any, should be identified.

3) The companys plan of operation should then work around the T&E Plant specie sites.

   For example: Moving a proposed drilling site 20 feet away to avoid a colony, etc. of T&E plant species.

Dr. Welch felt that this method of management is very practical and sensible. He emphasized the fact that threatened and endangered plants are rare and most often localized and endemic. When considering all of the land area of Utah, the odds of encountering threatened or endangered plants are very small.

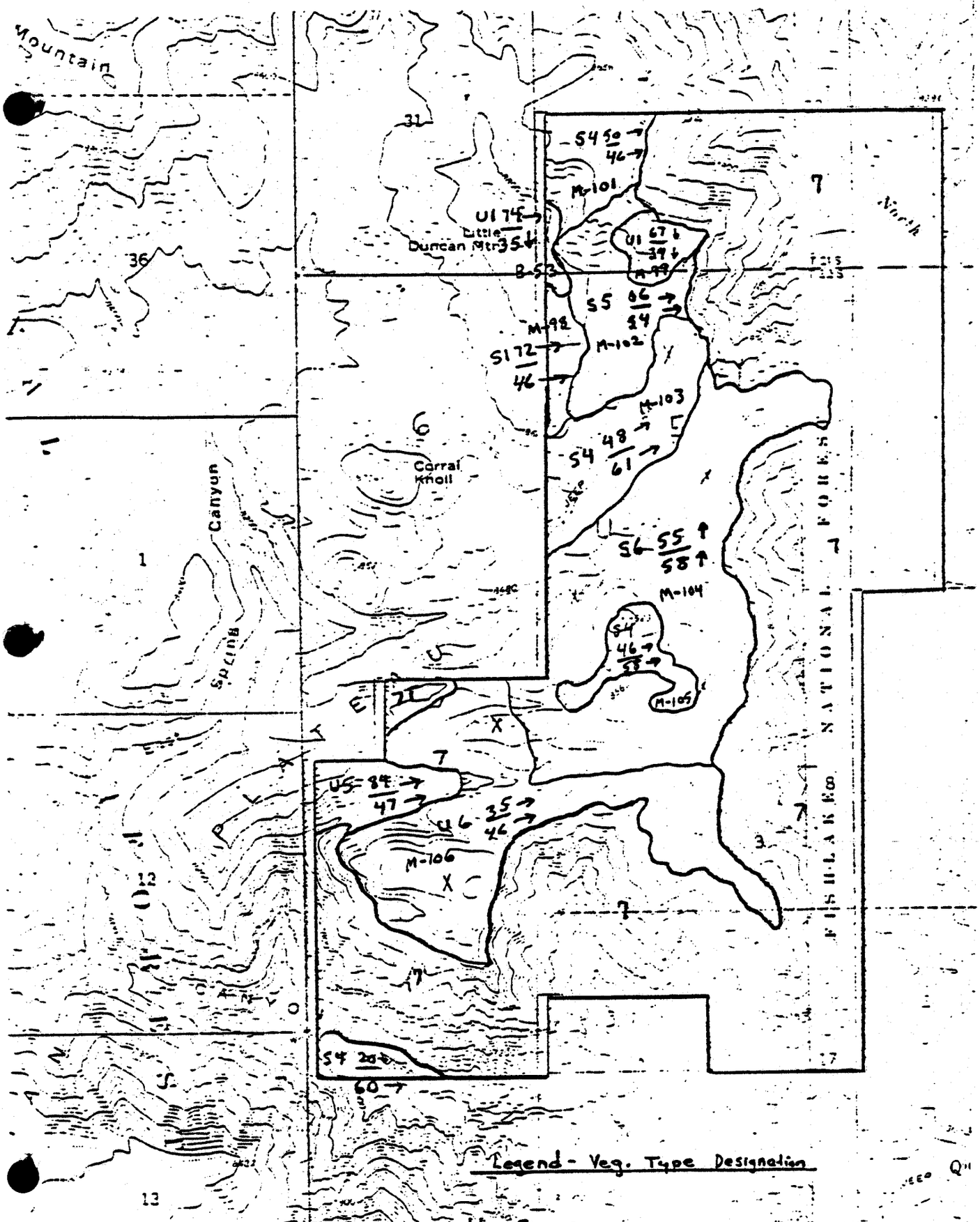
A third comment by Dr. Welch was that private consulting by qualified persons, helps to identify new populations of threatened or endangered species. Energy exploration, as well as other operations, is opening up areas which to date, have not been vegetatively sampled. Thus, private consulting provides a means of inventorying areas of the state for threatened or endangered species.

Dr. Welch also mentioned that the foothill regions around Glenwood and Sigurd contain several unique species and that these areas should be kept in mind with referance to threatened or endangered species.

A final comment was made concerning Otter Creek. Astragalus bodinii, which is an endangered species for Utah, occurs along Otter Creek. It should be noted, here, that this species is on the Utah endangered species list, but not on the national register list. Dr. Welch said that it is very common in the northern U.S. and Canada. Getting back to Otter Creek, Dr. Welch suggested that the fenced areas and the area to be fenced, should be searched for this species of Astragalus. He said that currently, Astragalus bodinii has been found only on privately owned, grazed land, in Utah. The possibility of this species occuring on BLM land, along Otter Creek, offers a good opportunity for protection of this plant. Thus, the existence of this species, if found, would definitely be reason to prevent livestock grazing within the fenced areas and also in the area which is proposed to be fenced. Although livestock would not directly feed on this species, trampling and other surface disturbances would be detrimental to the survival of the plant.

A key characteristic for identifying Astragalus bodinii is its spreading nature. Dr. Welch said that it will spread out over the top of adjacent forbs and grasses when the opportunity arises. Flowers are small and blue-purple.

Larry K. Greenwood


Mountain
Little Duncan Mtn
Corral Knoll
Canyon
Spring
M-101
M-102
M-103
M-104
M-105
M-106
M-98
M-99
B-53
S4 50 → 46 →
U1 74 → 35 ↓
U1 67 ↓ 39 ↓
S5 66 → 24 →
S1 72 → 46 →
54 48 → 61 →
S6 55 ↑ 58 ↑
S4 46 → 58 →
US 84 → 47 →
U6 35 → 46 →
S4 20 →
60 →
Legend - Veg. Type Designation
U = Unsuitable Range
S = Suitable Range
1 = Grassland
4 = Sagebrush
5 = Mountain Shrub
6 = Conifer with Forage
T = Waste (Dense timber or shrub - TT)
M-105 = Type Write-Up No.
S4 46 → 58 → Type & Condition Rating

ARCHEOLOGICAL REPORT

The following archeological reports were prepared for exploration programs conducted by Coastal States. To our knowledge, there has been no comprehensive survey performed on the entire property.

These documents cover a number of individual sites scattered over the leased area. They in no way imply that there are no major significant sites in the area, they merely show that the areas surveyed revealed only minor significant archeological finds.

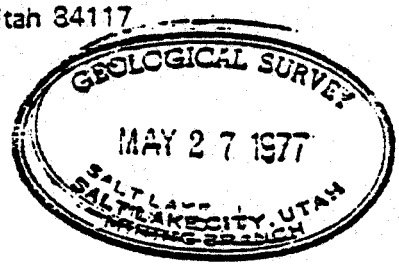
Archeological surveys will also be required for any future disturbances on the leased area.

See Forest Service letter in Appendix 3.c. dated July 5, 1977, for the Forest Service's archeological clearance.

RESEARCH CORPORATION

P.O. Box 17544 – Salt Lake City, Utah 84117
Tel.: (801) 582-0313

May 23, 1977



Subject: A Cultural Resource Survey of Drill Sites and Access Roads on U.S. Forest Lands in the Convulsion Canyon Area, Sevier County, Utah

Project: Coastal States Energy Company - 1977 Drilling Program in the Southern Utah Fuel Company Mine Area

Dept. of Agriculture Permit: Renewable Blanket Permit Issued by Robert Safran, Director of Recreation, Region 4, U.S. Forest Service

To: Mr. Ralph Blumer, U.S. Geological Survey, 8426 Federal Bldg., 125 So. State, Salt Lake City, Utah

Mr. Dennis Anderson, Coastal States Energy Company, 1354 East 3300 South, Suite 303, Salt Lake City, Utah 84106

Fifteen drill pads and six associated access roads were surveyed for cultural materials on May 16, 17, and 23, by Jim Dykman, working in association with Dennis Anderson of Coastal States Energy. The survey was located in the following area: Township 22 and 21S., Range 5E., Acord Lakes Quad.

All drill sites and access roads are located on U.S. Forest land in the Fishlake National Forest.

Drill Sites: There are a total of 15 drill sites that consist of impact areas of about 30 meters in radius. Nine of the drill sites were located near existing roads with the other six located on proposed access roads. The drill sites were surveyed by the walking of a concentric circle pattern out to 30 meters from the center of the drill pad area.

mesa top in a montane environment of pine with an understory of aspen, sagebrush, mansanita, and oak brush. Six of the drill sites were located in a mansanita zone, seven in a sagebrush understory and two in an oak brush understory.

Access Roads: Six access roads in conjunction with six drill sites were surveyed for cultural resource material. The roads ranged in length from 20 meters to 1.5 kilometers. A 15 meter wide corridor was cleared for each of the proposed roads. Methodology used included utilization of parallel sweeps on the access route and the use of a zig zag pattern when return on the road is impractical.

Cultural Resource Material: No cultural material was located during the survey of the proposed drill holes and associated access roads. The State Archeologist's files were also checked to locate known sites that may be in close proximity to the project area; no sites were located.

CONCLUSIONS AND RECOMMENDATIONS:
Drilling and equipment operations over the area noted above will have no adverse impact upon cultural resources of the Acord Lakes area if Coastal States Energy Company personnel and its representatives in the field comply with the following recommendations:

1) All vehicle traffic and drilling operations be confined to existing roads, cleared drill platforms and cleared access roads;

2) personnel and staff refrain from pilfering individual artifacts or disturbing any archeological sites within the locality; and

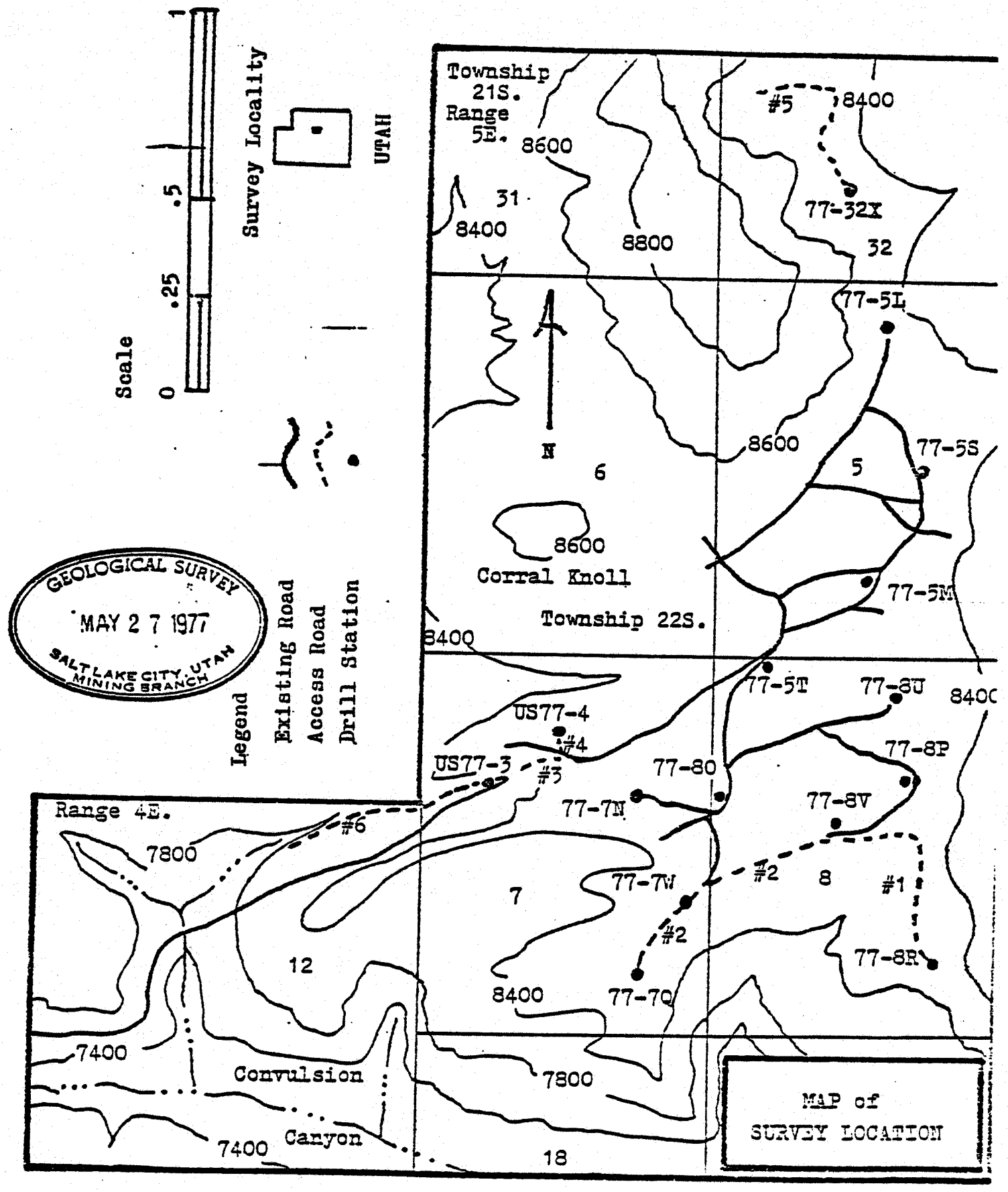
3) a qualified archeologist is consulted if cultural remains

improvement operations, or if the need arises to relocate or increase the number of drill stations in the locality which will not be on cleared routes.

With compliance to these recommendations, a complete cultural resource clearance for Coastal States Energy Company is recommended for the area surveyed.

J. L. Dykman, M.A.

F. R. Hauck, Ph.D.
President


Scale
0
.25
.5
1
Survey Locality
UTAH
Legend
Existing Road
Access Road
Drill Station
GEOLOGICAL SURVEY
MAY 2 7 1977
SALT LAKE CITY, UTAH
MINING BRANCH
Township 21S.
Range 5E.
Township 22S.
Range 4E.
N
31
32
6
5
7
8
12
18
8600
8400
8800
7800
7400
Corral Knoll
Convulsion Canyon
#1
#2
#3
#4
#5
#6
77-32X
77-5L
77-5S
77-5M
77-5T
77-8U
77-8P
77-8V
77-8R
77-8O
77-7N
77-7W
77-7O
US77-3
US77-4
MAP of
SURVEY LOCATION

ARCHEOLOGICAL - ENVIRONMENTAL
RESEARCH CORPORATION

P.O. Box 17544 – Salt Lake City, Utah 84117
Tel.: (801) 532-0313

May 9, 1977

Subject: Archeological Clearance of an Access Route and Two Drill Stations in Convulsion Canyon, Utah

Project: Joint Coastal States Energy Company and SUFCO 1977 Exploration Project in Sevier County

Dept. of Agriculture Permit: Renewable Blanket Permit issued by Robert Safran, Director of Recreation, Region 4, U.S. Forest Service

To: Mr. Ralph Blumer, U.S. Geological Survey, 8426 Federal Bldg., 125 So. State, Salt Lake City, Utah

Mr. Dennis Anderson, Coastal States Energy Company, 5 Greenway Plaza East, Houston, Texas 77046

Info: Mr. Roger Holland, Coastal States Energy Company, 1354 East 3300 South, Suite 303, Salt Lake City, Utah 84106

A two thirds mile long access road and two drill locations in Convulsion Canyon were examined for cultural materials on May 5, 1977, by D. Weder of AERC, working in conjunction with geologist Dennis Anderson. The surveyed areas lie in Section 7 of Township 22S., Range 5E. The access road begins at drill station 77-7-N in the center of the S½ of the NE¼ and runs west to the new location US-77-2 which lies in the SW¼, SE¼, NW¼ of the section. The second drill station is situated in the SE¼, NW¼, NW¼ of Section 7 (see Map).

A 20 meter wide corridor along the access route and a 35 meter radius around each drill station were evaluated for cultural materials. No archeological sites relating to prehistoric or historic activity in the area were discovered, nor were any isolated artifacts either observed or recovered.

CONCLUSIONS AND RECOMMENDATIONS

Road construction, drilling, and vehicle movement upon the access route and two drill stations noted above will have no adverse impact upon the cultural resources of Convulsion Canyon providing Coastal States Energy Company and its field representatives comply with the following recommendations:

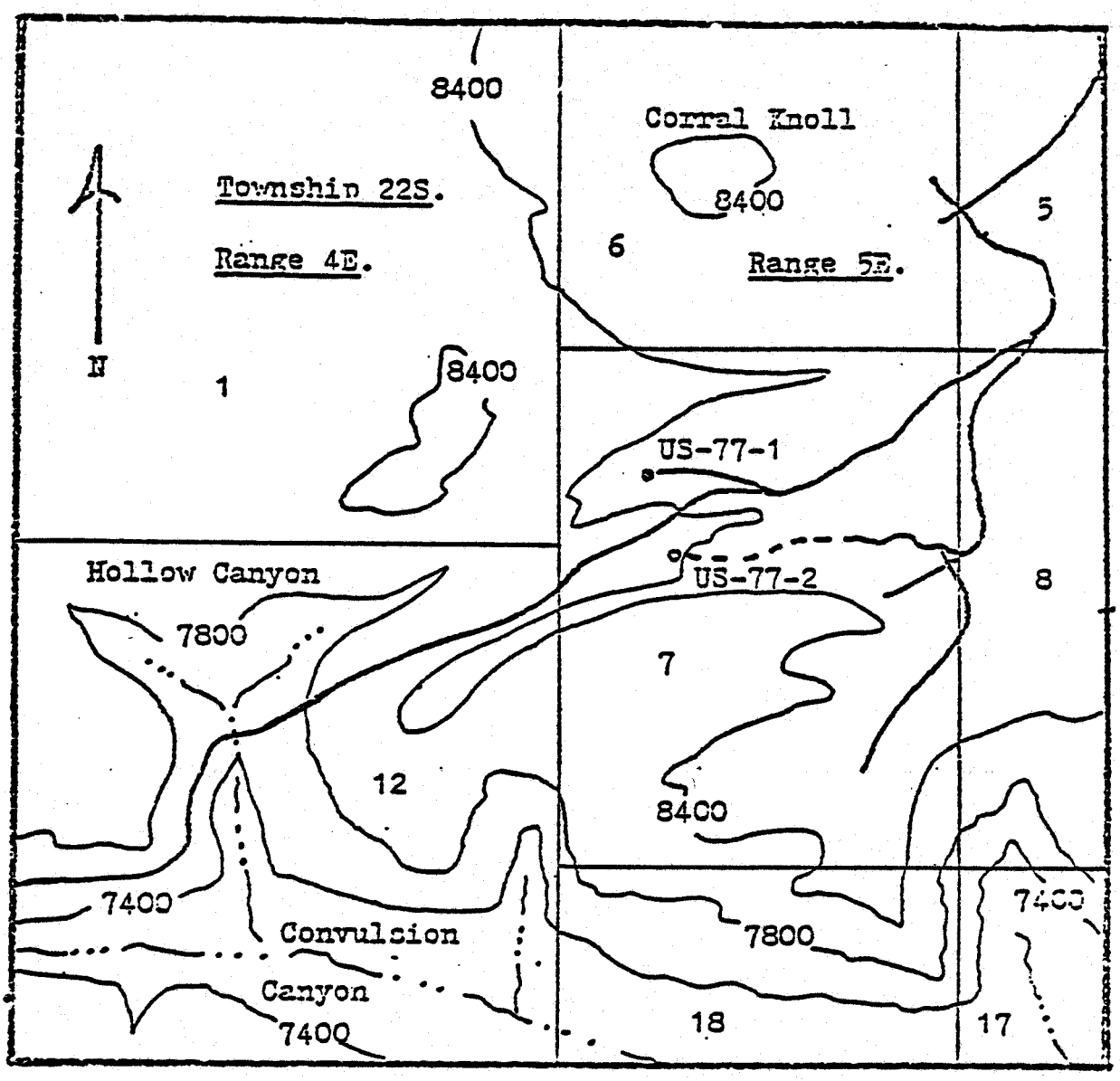
1) All vehicle movement, road construction activity, and drilling be confined to the cleared areas;

2) all personnel refrain from pilfering artifacts and from defacing any prehistoric or historic sites within the canyon; and

3) a qualified archeologist is consulted if cultural remains from subsurface deposits are exposed during construction operations, or if the need arises to relocate any segment of the drill locations or access road.

With adherence to these stipulations, a complete archeological and historical clearance for Coastal States Energy Company operations on sites noted above can be recommended.

F. R. Hauck, Ph.D.
President



LEGEND

Existing Road

Access Road

Drill Location

SCALE (in miles)

0 .25 .5 1

MAP of
SURVEY LOCATION

Survey Locality

UTAH

AR. ARCHEOLOGICAL-ENVIRONMENTAL
RESEARCH CORPORATION
P.O. Box 17544 – Salt Lake City, Utah 84117
Tel.: (801) 582-0313

ARCHEOLOGICAL RECONNAISSANCE REPORT

June 16, 1976

Subject: An Archeological Survey of Drill Locations and Access Roads in the Acord Lake Locality of Sevier County, Utah

Project: Southern Utah Fuels Company, 1976 Coal Drilling Program in the Blackhawk Formation

Dept. of Agriculture Permit issued June 10, 1976, by Robert L. Safran, Director of Recreation, U.S. Forest Service - Region IV

Utah State Permit: #181 (Survey), issued June 9, 1976

To: Mr. Robert Cracknell, U.S. Geological Survey, Conservation Division, 8426 Federal Bldg., 125 So. State St., Salt Lake City, Utah 84138

Mr. Ross Butler, U.S. Forest Service Offices, Richfield, Utah 84701

Mr. John Niebergall, U.S. Forest Service Offices, Ferron, Utah

Dr. Evan DeBloois, U.S. Forest Service Archeologist, Federal Bldg., 324 25th St., Ogden, Utah 84401

Mr. Vernal J. Mortensen, Southern Utah Fuel Co., 655 W. 1st South, Salina, Utah

Info: Mr. David Gillio, U.S. Forest Service Offices, Richfield, Utah 84701

Ms. Marilyn Malone, U.S. Forest Service Offices, Monticello, Utah

Dr. David Madsen, Utah State Archeologist, 603 E. So. Temple, Salt Lake City, Utah 84114

Mr. Loren A. Williams, Coal & Chemical Division, Coastal States Energy Company, 5 Greenway Plaza East, Houston, Texas 77046

Eight potential drill locations and one access road were examined for cultural remains on June 14 and 15, 1976, by F. R. Hauck working in conjunction with Geologist Vance Hall of Coastal States Energy Company (see Map). All drill pads and access roads are located on U.S. Forest Service administered lands. Seven of the drill locations and the access road are in the Fishlake National Forest; pad 76-28-K is located in the Manti-LaSal National Forest. The locations fall into three different township and range grids:

Township 21So., Range 5E.
Pad 76-31-G: located in the SW¼ of Section 31,
Pad 76-31-H: located in the NW¼ of Section 31,
Pad 76-32-J: located in the NW¼ of Section 32,
Pad 76-32-I: located in the SW¼ of Section 32,
Pad 76-28-K: located in the SW¼ of Section 28;

Township 21So., Range 4E.
Pad 76-36-E: located in the SW¼ of Section 36;

Township 22So., Range 4E.
Pad 76-1-D: located in the NW¼ of Section 1; and

Township 22So., Range 5E.
Pad 76-6-F: located in the NW¼ of Section 6.

A 30 meter diameter surface area at each drill location was examined for archeological artifacts and indications of prehistoric-historic cultural activity. An eight meter wide access road extending from the west-central boundary of Section 30, T.21So., Range 5 E. to Pad 76-32-I was also surveyed. Much of the access into drill locations 76-32-I was also surveyed. Much of the access into drill locations 76-32-J and 76-32-I is on an existing road. The segment of access road subjected to the most intensive examination extends between these two drill pads where no road exists or the existing road was not adequate for drill vehicle traffic. Cleared roads and drill pads were flagged in red.

Cultural remains were observed in three separate locations, all in Section 32, T.21So., R.5E. Two archeological sites, 42Sv671, and 42Sv672 were evaluated and site report forms prepared. Site 42Sv671 will not be endangered by vehicle traffic passing outside the site periphery and to the west, thus no mitigation to protect that site was initiated.

The original position for drill pad 76-32-J lay within the boundaries of Site 42Sv672. In order to protect that site, the drill pad location for 76-32-J was moved about 110 meters to the southwest, well outside the site periphery. The existing road passes between components A and B of Site 42Sv672; since a very marginal impact had already occurred

on the site, the access road was not rerouted. Site 42Sv672 is not readily identifiable and unless specifically pointed out, will not be in danger of secondary impact from drill personnel traveling along the existing road. Artifacts on the two sites were not collected; however, the most diagnostic tools observed on both sites were sketched for the benefit of the report (see Figures below). These tools consist of a biface blade fragment, a drill fragment and three projectile point fragments and are all very similar to Archaic period artifacts recently recovered in nearby western Emery County by AERC while surveying on a similar project for Consolidated Coal Company of Denver (the archeological report is currently in preparation).

The Pinto style point base fragment in Figure b was found on Site 42Sv671. In addition to the discovery of the two sites, a possible Paleo-Indian projectile point of the Cascade style was found about 60 meters southeast of Pad 76-32-I on an eroded surface of the eastern slopes immediately above the major drainage channel which flows to the east along the basin floor. This artifact, considered as an indicator of the prehistoric activity along the eastern slopes of the Wasatch Plateau, was collected; it and the Pinto base fragment will be retained within the special collection developed by AERC and maintained at the Weber State College facilities in Ogden, Utah.

Conclusion and Recommendations:

Drilling and equipment movement/operation upon the locations noted above will have no adverse impact upon the cultural resources of the Acord Lake locality if Southern Fuels Company, its field representation and its drilling contractors comply with the following recommendations:

1) All drilling operations and vehicle movement should be confined to existing roads, cleared drill locations, and cleared access roads;

2) field personnel should refrain from pilfering any known or unknown archeological site within the locality;

3) a qualified archeologist is consulted if subsurface cultural remains are uncovered during project activities, (such activities should be immediately suspended in the vicinity until mitigation procedures have been completed); and

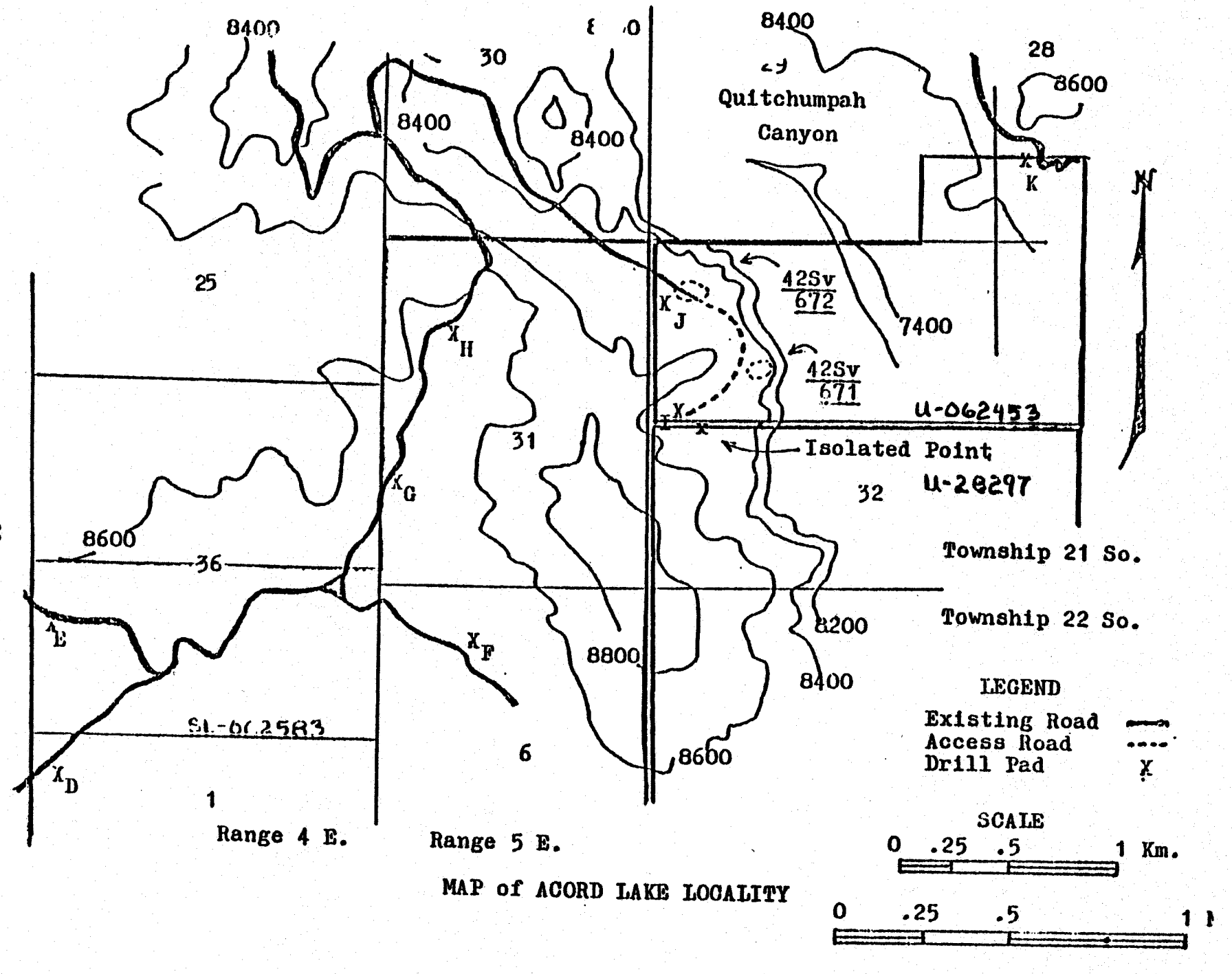
4) a qualified archeologist is consulted if the company desires to either relocate any cleared drill location/

access road, or to initiate any new drill locations/ access roads.

With adherence to these suggestions, a complete archeological clearance for Southern Utah Fuel Company and its field operations in the Acord Lake locality is recommended.

F. R. Hauck

F. R. Hauck, Ph.D.

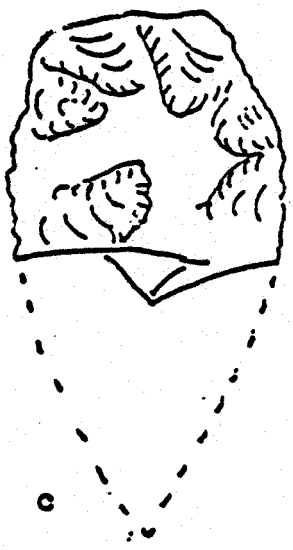


MAP of ACORD LAKE LOCALITY

a

Isolated
Artifact

b



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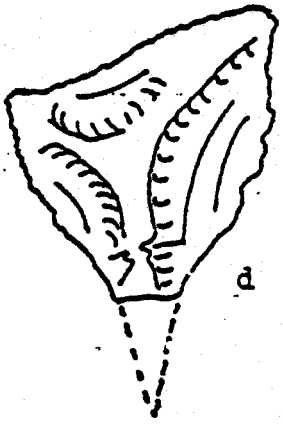

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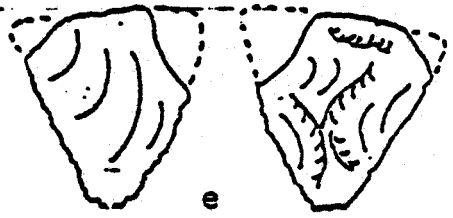

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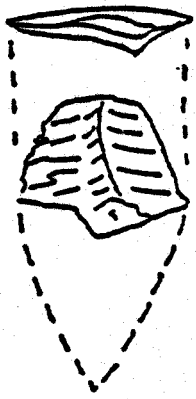

h

Scale: Actual Size

DEPARTMENTAL CORRESPONDENCE

Date September 15, 1977

Subject LEASE APPLICATION U-28297 DELAY EFFECTS ON MINE PLANNING

To Loren Williams Dep't. Resource Acquisitions

From Roland Heath RH Dep't SUFCo Engineering

The current mining plan submitted to the U.S.G.S. for mining practices on Federal Leases held by Coastal States Energy Company in the Convulsion Canyon area included plans inclusive of Lease Application U-28297. We included the lease application because of optimism at the lease outlook over the past three years and because of the logical mining unit that the addition of the application gives to the currently held leases.

The mine plan was developed with the following considerations:

1. Maximum Reserve Recovery
2. Mining method to give high production rates
3. Maximum belt efficiencies (size, re-use)
4. Even power distribution
5. Exhausting Fans at one location with intake air being introduced to the mine from punch outs at the outcrop in Convulsion and Quitchupah Canyons.
6. Product Quality Control
7. Water Drainage

Enclosed is Exhibit "A" showing mine development with acquisition of the lease. This plan was altered during August because of the lease delay. Development of the property has been based on the approved U.S.G.S. mining plan which has locked SUFCo into either mining with the plan without the lease, trying not to mine those areas which would close further development of the plan, thereby sacrificing recovery, increasing mining costs and decreasing mining efficiency; or, to develop a new plan which gives maximum recovery of the present lease but ignores any access into the lease to the east from present workings.

SUFCo is planning and using the first alternative, Exhibit "B-1" shows mine development on the present plan trying to maintain the integrity of the overall plan. With this alternative, as mining progresses, it too will mine areas that will close access to the lease application and reduce recovery. As the lease acquisition is delayed further, the lease will become a separate area having to be developed as a separate mine with only access at one east from present mine portals or from Quitchupah Canyon which will necessitate new portals and facilities.

Developing the lease as a new mine would probably be similar to the plan shown in Exhibit "B-2". This plan shows access from the Canyon or One East submain - if the lease is granted to SUFCo.

If SUFCo develops the lease as a separate mine it would involve the following losses:

1. Tonnage losses due to bleeders system and structural barrier pillars would be approximately 1,575,000 tons.

2. 2 East, 3 East and 4 East submain development for the original mine, (ventilation overcasts, belt drives, main transformers, etc.) would only obtain approximately 20 percent of the coal tonnage intended.

3. Belt drives, ventilation, overcasts, etc. would be reduplicated for the new lease.

4. The same portals and facilities would be reused, not contributing to any further environmental impact as long as it is developed before depletion of present leases.

There are several ways to develop a plan to mine the lease application. However, we feel the following is the least objectionable. Exhibit "B" shows the configuration of the layout with coal being shipped by truck to the town of Emery, Utah and possibly to the town of Price, Utah for train shipment.

This particular configuration would:

1. lose approximately 1,575,000 tons of coal from combined plan shown in Exhibit "A".

2. necessitate improving a one lane farm road for 5 miles. The road is located approximately 4 miles southwest from the town of Emery, Utah (portions of the road are private, the rest BLM) - shown on Exhibit "C".

3. at the mouth of the north Fork of Quitchupah Creek an access road would have to be constructed for approximately 2 miles up the canyon.

4. mine facilities could be constructed at this point - elevation approximately 6800 ft.

5. mined coal could be conveyed out of the mine and dropped through a chain drag chute to a collector and then conveyed overland to the mine facilities approximately 1500 ft. at slopes not greater than 18 degrees.

6. a road would have to be built from the mine facilities to the portals approximately 3/4 mile long and transcending a vertical sandstone cliff 300 ft. high.

7. Facilities would include:

A. Power distribution
B. Water system
C. Sewer system
D. Shop Building
E. Bathhouse
F. Coal storage and truck loading facilities
G. Ventilation Fan

No attempt has been made to place a cost value to the cases above but it is very apparent that starting a new mine in Quitchupah Canyon would be environmentally difficult with very little operational life for the facilities. The loss in coal recovery adds to the environmental impact. SUFCo's present leases constitute a fair mining unit. The addition of the lease application to SUFCo contributes to a well balanced mine with good reserves for the facilities and development that has been established in east spring canyon.

IN REPLY REFER TO

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Moab District Office
Price River Resource Area
P. O. Drawer AB
Price, Utah 84501

3500
(U062)

Title: Public Meeting for Kanawha & Hocking Coal & Coke Company and Coastal States Energy Company Coal Leases

Date: December 21, 1976

Author: Leon Berggren

Leon Berggren welcomed the group and introduced some of the people who were in attendance from government agencies.

John Coleman, BLM, Moab District Office, made the presentation concerning the Kanawha & Hocking Coal & Coke Company. K & H Coal & Coke Company is a wholly owned subsidiary of Valley Camp Coal Company. On May 9, 1975, Valley Camp applied for a competitive lease sale for 160 acres on National Resource Land. The coal is located on 33.6 acres of National Resource Land. To date, there has been little public controversy concerning this lease. The Utah #2 mine is not presently mining federal coal. The additional acres of National Resource Land being applied for will have no additional impacts upon the area, except to briefly extend the life of the mine. It has been determined that economic access to the coal will be lost if the coal is not mined through the Utah #2 mine. Almost three-quarter million tons of coal would be lost if it is not mined now. Using a royalty rate of eight per cent, this would equal a loss to the federal government of $750,000.

Kanawha & Hocking Coal & Coke Company is applying for this lease under the criteria that the coal is needed now to maintain the existing operation and the area applied for is not an economic mining unit and if not mined now, the coal would be lost.

The surface of the lands in the proposed lease sale are in private ownership owned by George Telonis and Earl Thomas.

The Utah #2 mine employs approximately 75 people. The current production of Utah #2 is currently 1,500 tons per day or about 400,000 tons per year, with a five-day work week. This tonage level or a slightly higher level is expected to continue for about 12 years.

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The proposed lease sale would lengthen the life of the mining operation for just over one year. The coal that is now being extracted from the mine is being sold to utilities in the eastern United States. If the coal is not extracted at this time, reasonable access to the coal would be lost due to the mining of the surrounding area.

The Bureau of Land Management is responsible for the issuance of the lease and has the lease responsibility for this action, with the participation of U. S. Geological Survey. By the issuance of the lease, the government would grant to the leasee exclusive rights and privileges to mine and dispose of the coal and other terms of the lease. The BLM does not recommend the sale of all the tracts that Kanawha & Hocking has made application for. The BLM recommends the sale of 120 acres instead of the full 160 acres due to the discrepancy in the location of the Scofield fault.

An Environmental Analysis Report Tech Exam has been written. The purpose of this exam is to assess possible impacts that development and mining activities would have on the existing environment and resource values and to mitigate the possible impacts. The tech exam also provided the setting of a bond which is proportionate to the magnitude of the potential surface disturbance in the event that the reclamation is not completed to the BLM's satisfaction. The following environmental impacts are contained in the E.A.R.:

Climate - No impact

Noise - No additional impacts than now exist

Topography - Possible slight subsidence

Soils - No impact

Geology - Beneficial impact -- mining of coal that would otherwise be lost

Water & Watersheds - None -- present effects will continue whether lease is granted or not

Vegetation & Livestock - None -- all mining activities are underground

Fish - Limited -- prolonged effect on turbidity and increased sediments

Wildlife - Accumulative effect detrimental to deer and elk from disturbance, harassment, poaching, and etc.

Effect on Local Economy - Beneficial

Social-Cultural Interests - No impact

Human Values - No adverse effect

Public Health & Safety - No additional problems

Land Use - No negative effect

Tex Williams, representing the Fishlake National Forest, Richfield, Utah, made the presentation concerning the Coastal States Energy Company.

On October 1, 1974, Coastal States Energy Company of Houston, Texas, asked that a special lease be made to them for a parcel of land east of their present mine holdings. This parcel of land contains 2,669 acres. Of this 2,669 acres, 202 acres are BLM land; 263 acres are on the Manti-LaSal National Forest; and 2,205 acres are on the Fishlake National Forest. All of this land is in Sevier County and in the Quitchempah Drainage.

This coal of the Star Point is in a sandstone formation and has been described within Wasatch Plateau Coal Field of Utah. The deposits are the same as is being mined by Southern Utah Fuel Company, a subsidiary of Coastal States Energy Company.

The thickness of the coal below the surface in the north area is from eight feet to sixteen feet. The coal is low sulphur high BTU western coal. It is estimated that from 10 to 19 million tons of coal can be extracted. The overburden is from 600 feet to 1,500 feet, with most of it in the 600 feet to 1,000 feet range.

The elevation of this land is from 7,000 to 8,500 feet. The slopes range from 0% on the benches to 100% on the scarp faces. The coal is located predominately in the southeast portion of land applied for. There is an annual rainfall of 12 to 16 inches. There is a frost free period of 80 to 100 days. This land is all located in the Salina Management Unit.

Sagebrush and Ponderosa Pine are found on the benches. Narrow stringers can be found in the canyon bottoms. Sagebrush, Gambels Oak, and Mountain Mahogony are found on the rolling hills.

There are two streams that cross the lease. One of these is in Convulsion Canyon and the other is North Quitchumpah Creek. There are no known springs on the lease, but there are some immediately west of the area to be leased.

This land is used by elk and deer. It is used as a winter concentration area for the elk and a summer use area by the deer. The recreation use of this area is primarily for one month for deer hunting; however, there is some elk hunting.

There is livestock on this area in the Quitchumpah Pasture of the Quitchumpah C & H Allotment. The Quitchumpah Grazing Association members are mainly from the Emery area. At least one spring on the area could be affected by disturbance of an acquifier.

The air quality in this area is very high. The only source of air pollution is dust from traffic on the mine road.

There is an increased chance of fire because of the increase of human activity.

There are archeologic remains present throughout the area. A survey will have to be done for any activity in this area. There are no other known minerals present in this area.

The Southern Utah Fuel Company, a subsidiary of Coastal States Energy Company, employs approximately 140 people. Most of these people are from the Salina area. If this lease is issued, there would be an increase of approximately 50 jobs plus the support in the Salina area. There would also be more stability by increasing the mine life.

The soil in this area is generally stable. The soil is shallow with a high percolation rate.

There are special use permits issued on this land. Two are issued to Utah Power & Light Company for power lines to service the Convulsion Mine.

There is low quality Ponderosa Pine on the benches with cutting limited to old, over mature trees. There is presently a sale for 760,000 board feet.

The lease area is served by low standard dirt roads. The vegetation changes with land forms. Sage, grass and Ponderosa Pine are grown on this lease area. There are openings with native grass, forbs and low brush species. Pinyon and Juniper trees grow on the steep slopes. Vegetation of native grass, low brush and forbs are found in the narrow canyon bottoms. Visual resources are seen from the Emery and Duncan Mountain Road.

For two million tons of coal, approximately 22,000 gallons of water is needed for the mine machinery. The mine is producing enough water to meet this need. 10,000 gallons of water a day for cullinary purposes is being met by the water rights on the spring near the mine.

No matter who gets the lease, exploration holes will have to be drilled. There is an estimated eight holes that will have to be drilled.

The advantage of a lease by competitive bid with a stipulation that the coal must be retrieved through existing mine facilities is that allows other companies the opportunity to bid on the lease. The disadvantages include the following:

1. The coal is mined over shorter periods of time
2. The existing facilities are designed to handle only two million tons of coal. Increased production would cause new construction.
3. There would be a conflict between two companies
4. Higher cost of coal recovery

The advantages of a lease by competitive bid and allowing new mine facilities include the following:

1. It would allow for more competition
2. There would be more new jobs and economic stimulus in the area

The disadvantages include the following:

1. Environment impacts on the following:
   a. Wildlife
   b. Roads
   c. Powerlines
   d. People
   e. Special uses
2. Greater cost of recovery
3. Questionable if reserves are large enough to support new mine

The management requirements and constrants would include the following:

1. The leasee will provide an alternate water supply if the springs are dried up due to mining activity.
2. There will be no surface activity from November to April because of wintering elk.

There are unavoidable adverse affects which include:

1. Increased dust
2. Increased carbon monoxide
3. Disturbance from drilling
4. Increased water turbidity from surface disturbance
5. Fire hazard increased by the increase of people
6. Increased road conflict with the elk migration
7. Sub surface water channels altered
8. Road constructed will leave permanent scars

The irreversible and irretrievable commitment of resources include the following:

1. Coal consumed
2. Underground water channels

The alternatives of taking no action would be that no new impacts would be made on the immediate vicinity and the coal reserve would still be there. The disadvantages of taking no action would be that the coal would be expensive to mine in the future and there would be several disadvantages to the company's mine development plans and operation.

The advantages of the lease to Coastal States Energy Company in a noncompetitive bid would include the following:

1. Many to Coastal States (life of mine machinery, etc.)
2. Desirable for surface managing agency
3. No new facilities
4. No increase in traffic
5. No increase in disturbance except for drilling

The disadvantages include the following:

1. Keeps other companies from having opportunity to bid
2. Extends time of disturbance in area by extending life of mine

The Forest Service recommends that the lease be granted to Coastal States Energy Company and that the coal be mined out of the existing portals. If someone else bids successfully, the Forest Service is not in favor of new roads and portals on National Forest Lands.

Denis Anderson, landman and environmental coordinator for Coastal States Energy Company made a presentation in behalf of his company.

"Southern Utah Fuel Company, a division of Coastal States Energy Company, is involved in mining federal coal at its underground mine in Sevier County, Utah.

Mine production has increased rapidly from 70,000 tons in 1970 to more than one million tons for 1976. An expansion program is underway which could result in two million tons or more per year by 1980. The operation currently employs 129 people with an annual payroll of $3.8 million, both of which are expected to increase.

In addition to the people and plants of Sevier Valley, Southern Utah Fuel Company (SUFCo) supplies coal to other area users. This mine is already an important fuel source and a significant part of the local and state economy and will become even more so.

SUFCo has a problem which threatens the orderly development of this resource. They recognized some time ago the need to secure additional reserves and in October of 1974 made application to the federal government for a coal lease on adjacent lands (BLM Application #U-28297). These lands are needed to replace depleted reserves, to provide a base for expanded operations and to assure an orderly, efficient operation.

The Forest Service with their Environmental Analysis Report suggested that mining through their portal is the only environmentally and economically acceptable means to develop this reserve.

Excessive boundary restrictions limit the concepts which may be employed in mine development. Already SUFCo is developing the mine in a manner prescribed by lease boundaries rather than in the manner which would result in the best recovery of reserves and in the best mining sequence for roof control.

The reasons for which SUFCo made application more than two years ago are ever more pressing and urgent now because of the mining that has occurred since, the accelerated rate at which mining is now being conducted, and the increasing market demand within the area they serve. The point of no return is fast approaching. They must make a decision in 60 days whether to by-pass this otherwise mineable block and thus render it nonrecoverable forever.

More than two years have passed since SUFCo made application and as of yet no lease has been issued. This situation must be cleared up very soon in order to avoid adverse affects on the production of a vital fuel source and the jobs this activity provides.

SUFCo strongly urges that BLM proceed to issue this coal lease."

The meeting was then turned into a question and answer period. Stewart Fausett asked if there was any specific reason why the BLM preferred to lease the 120 acres instead of the 160 acres. John Coleman stated that it was due to the undetermined discreptency of the Scofield fault. David Shaver asked which side of the fault is Valley Camp mining on. Roger Markle, Valley Camp of Utah, stated that they were mining on the west side.

Vard Johnson, Itel, asked if this lease was being applied for on a short term lease. Max Nielson, BLM State Office, stated that both leases were being applied for on a short term lease. Vard Johnson asked if the leases were going to be issued to the applicant's on the basis of this hearing. Max Nielsen stated that any coal sales in the future will be on competitive leases, except those on privilege use right applications. The situation is that the only way it can be leased is by competitive leasing.

Ray Christensen, Soldier Creek Coal, asked if this is the only activity that will be required before the lease is given. Max Nielsen stated that there would not be any more hearings before the lease sale.

J. A. Harvey asked if this is but one competitive lease, would they have to take in from the existing portals. Max Nielsen said that if someone else got the lease, it would have to be looked at again. The government would have to look at what the leasee wanted to do. On short term lease, the government cannot lease to anyone but the highest bidder. U.S.G.S. has an evaluation team in Denver and they estimate the fair market value. J. A. Harvey asked what is a fair market value. James Travis, U.S.G.S., stated that the fair market value differs in different areas.

Dave Shaver asked what the estimated recoverable tonnage would be. Tex Williams, Forest Service, stated that there is 20 to 30 million tons of recoverable coal. Dave Shaver asked where the existing work stopped. Tex Williams stated that the existing work stopped at the lease line. Dave Shaver asked if there was less than eight million tons of coal in the green block shown on the map. Tex Williams said that there was approximately 18 years of mining left in the green block. If they don't soon get the coal, they will have to change the angle at which they can get the coal.

With no further questions or statements, the meeting was adjourned.

Lisa E. Bryson

VISITOR'S ROSTER

WISH TO SPEAK YES	WISH TO SPEAK NO	NAME	OFFICE/ADDRESS	REPRESENTING
✓		C. J. Gurney	Castle Dale, Utah	Private Consultant
	✓	Paul Bff	Price, Utah	BLM
	✓	Carl Winters	East Carbon, Utah	U.S. Steel
✓		[illegible]	Moab	BLM
	✓	[illegible]	Ferron, Utah	Forest Service
	✓	[illegible]	Salt Lake City, Ut	U.S.F.S. Conservation Div.
	✓	[illegible] Baker	Price, Utah	U.S. Forest Service
	✓	Bruce W. Pitts	Richfield, Utah	U.S Forest Service
	✓	[illegible]	[illegible]	Valley Comp of Utah, Inc
	✓	Gary E Taylor	Richfield, Utah	Valley Comp of Utah, Inc
	✓	[illegible]	Richfield Utah	Forest Service
	✓	[illegible]	SLC	BLM

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VISITOR'S ROSTER

WISH TO SPEAK YES	WISH TO SPEAK NO	NAME	OFFICE/ADDRESS	REPRESENTING
	✓	Ray Lopo	Price	Swisher Coal Co.
	✓	Roger Marke	SCC	Valley Camp Utah
		Jan Nelson		Swisher Coal Co.
	✓	Stewart Fawcett	Price, Utah.	KOAL Radio.
		Brenda Steele	Price	
	✓	Robert J. Steele	Helper, Ut.	Valley Camp of Utah
	✓	J.W. Smith	Price	Deseret News.
	✓	Roger Thurnie	Price	Forest Service
	✓	Virgil Lamb	Price	Valley Camp of Utah
	✓	Glenn Sides	East Carbon	U.S. Steel
	✓	Ray Christensen	Price Coastal States Energy Co	Soldier Creek Coal
✓		[illegible]	Greenway Plaza E	Coastal States/Swift

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VISITOR'S ROSTER

WISH TO SPEAK		NAME	OFFICE/ADDRESS	REPRESENTING
YES	NO			
	X	Doug Tullis		Sun Advocate

VISITOR'S ROSTER

WISH TO SPEAK YES	WISH TO SPEAK NO	NAME	OFFICE/ADDRESS	REPRESENTING
	X	Dan W. Jones	Carbonville, Utah	Valley Comm of Utah
		Paul Kyle	Price, Utah	T&E

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