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BP Coal America Inc.

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Cleveland, Ohio 44114-2375

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DIRECTOR
OIL, GAS & MINING

October 17, 1988

Mr. L. P. Braxton
Administrator, Mined Land Reclamation Program
State of Utah Natural Resources, Oil, Gas and Mining
Suite 350
3 Triad Center
Salt Lake City, Utah 84180-1203

Dear Mr. Braxton:

Proposed Exploration B Canyon

Further to your recent conversation with Andy Bowler, I enclose a copy of our submission to the BLM for your information.

Yours faithfully,

W. H. Kennedy
Manager, Geological Services

Attachment

(braxton10-17)

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PROPOSED EXPLORATION PROGRAM.

PROPOSED EXPLORATION
B-CANYON, CARBON COUNTY, UTAH

1.0 INTRODUCTION

BP Coal America proposes to drill three wireline coreholes, and to construct support roads on Kaiser Coal Corporation's B-Canyon coal property located in Carbon County, Utah.

Although drilling is one of three data-gathering methods being proposed for the B-Canyon property, it is the only one which will employ heavy equipment. The other two methods being considered are:

- (1) outcrop hand-trench sampling, and
- (2) underground hand-channel sampling, both of which come under the "casual-use" category.

The principal objectives of this exploration program are to:

- (1) Upgrade the reserves in the southwest portion of the property to the "measured" category as defined by the USGS/USBM ie. 1/2 mile spacing between data points.
- (2) Provide essential coal samples for analysis.
- (3) Define the Lower Sunnyside Seam split line as well as provide information on the extent of the burnt coal. Most of this information will come from the outcrop channels, however the coreholes will be useful in this regard.

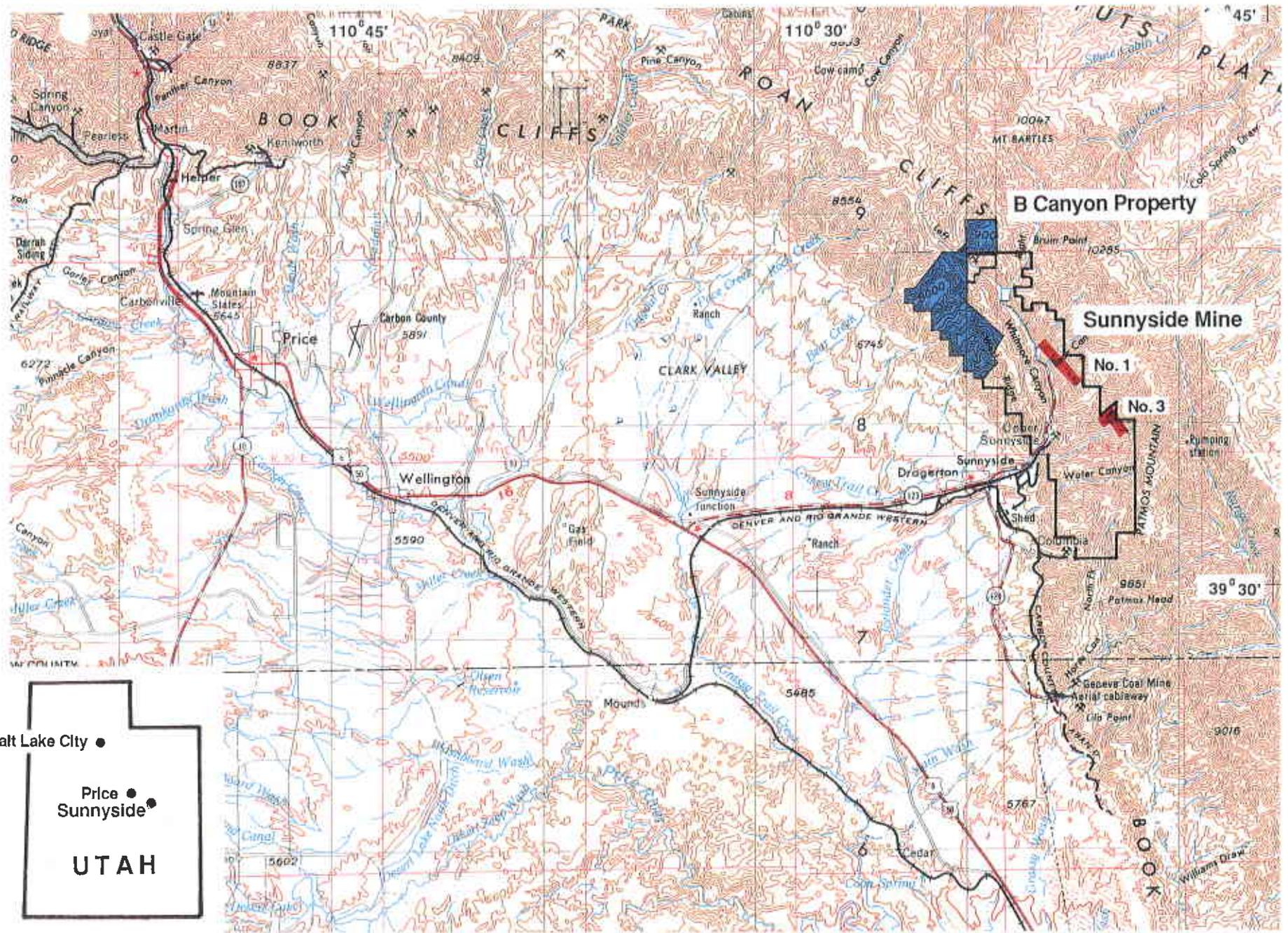
With the completion of the above objectives BP Coal America will be in a better position to evaluate the mineability and coal quality of the reserve located in the southwest portion of the B-Canyon property.

1.1 Location of the Exploration Area

The B-Canyon coal property is located about 4 miles north of the towns of East Carbon and Sunnyside, and about 25 miles east of the city of Price, Utah. (Figure 1)

Immediately to the north and south of B-Canyon are respectively Kaiser's North Lease property and Sunnyside Mine.

Access to the property is via the paved road State Route 123, which connects the town of East Carbon with State Highway 6-50. From East Carbon to the study area, located in the southwest part of the B-Canyon property, several unimproved roads and "jeep trails" are used. These roads and trails follow the base of the Book Cliffs and can also be found in each of the major canyons.



Base map from U.S. Geological Survey
 Price 1: 250,000 1970.

Kaiser Coal Corporation's B Canyon Property Carbon County, Utah

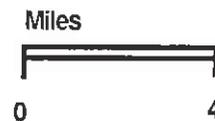


FIGURE 1

The nearest rail access is via the Denver and Rio Grande Western Railroad's spur line which connects the main line near Mounds with the Sunnyside loadout facilities - a distance of approximately 12 miles.

The drill sites and accompanying access roads are located in T.14 S, R.13 E Sections 11, 12, 13, 14 and 24. Map 1, at a scale of 1" = 500', shows the location of these drill sites and access roads.

1.2 Coal Ownership (Figure 2)

B-Canyon coal is leased to Kaiser Coal Corporation from the federal and state governments under the following leases as shown in Fig. 2.

- (1) U.S. Government Lease with Serial No. 068754 - Utah 01215 containing 2570.67 acres located in T.14 S., R. 13 E. of the SLB and M

Section 10: NE 1/4, E 1/2-NW 1/4 and N 1/2-SE 1/4

Section 11: All

Section 12: W 1/2-SW 1/4 and SE 1/4-SW 1/4

Section 13: E 1/2, E 1/2-NW 1/4 and NW 1/4-NW 1/4

Section 14: E 1/2, NW 1/4-SW 1/4

Section 24: N 1/2, NE 1/4-SW 1/4 and N 1/2-SE 1/4

- (2) State of Utah - Mineral Lease with Serial No. 17621 containing 128124 acres.

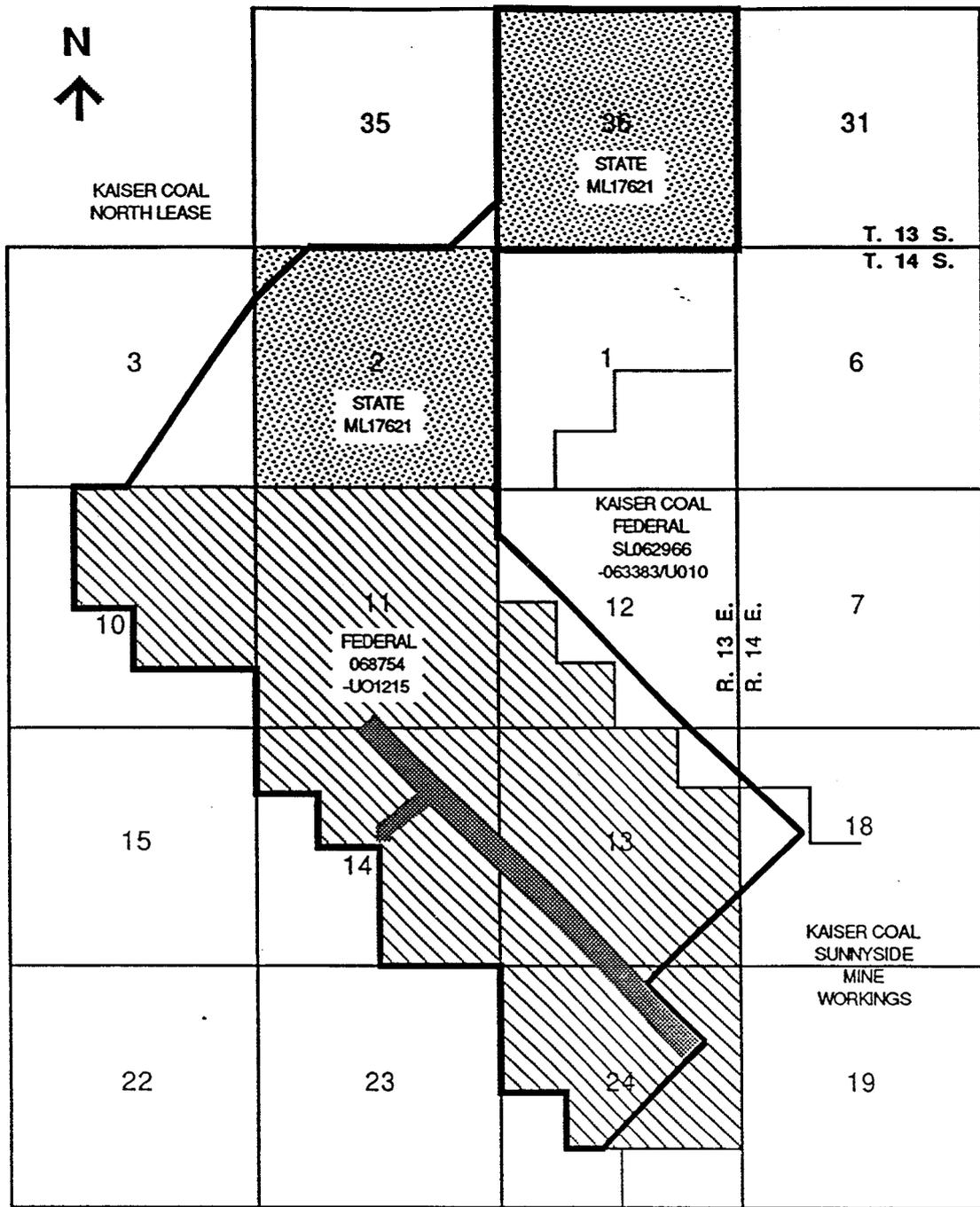
Section 36: T.13 S., R.13 E. of the SLB and M

Section 2: T.14 S., R.13 E. of the SLB and M

All three holes will be drilled to the Lower Sunnyside Seam - a coal seam leased by Kaiser from the federal government.

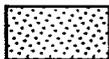
1.3 Surface Ownership (Fig. 3)

The majority of the B-Canyon surface ownership is public domain, controlled by the BLM. The remainder, is seen in Figure 3, is owned by Kaiser Coal Corporation. The surface disturbance resulting from this exploration program takes place on Federal land in Sections 11, 13, 14 and 24 and on Kaiser land in Section 12.



Main B Canyon Leases:

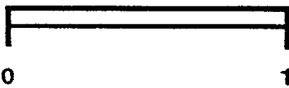
 U.S. Government Lease
Serial #068754-UTAH01215

 State of Utah Lease #ML17621

 B Canyon Property Boundary
Defined by Kaiser Coal Corp.

 Mining Lease

Miles



B Canyon Coal Leases

FIGURE 2

1.4 Mining Permit (Fig. 2)

The mining permit issued to Kaiser Coal Corporation extends to surface along the length of the B-Canyon drive (refer Figure 2). The proposed access road C will cross this ground and therefore that part is jurisdiction of the State of Utah Natural Resources Oil, Gas and Mining (D.O.G.M.). However, to avoid duplication, L.P. Braxton, Administrator of the State D.O.G.M. has agreed to allow the BLM to become the Primary Agent in consideration of the exploration permit application (L.P. Braxton to D. Nyffler of BLM, Price, Utah).

Should be a memo in the file on this
2/16

1.5 Application

BP Coal America hereby applies for permission to conduct the exploration program described herein, in compliance with 43 CFR Ch 11 Subpart 3482.

Kaiser Coal Corporation via a letter from W.P. Balaz P.E., Manager of Administration, Kaiser Coal Corporation has given permission to BP Coal America to carry out this exploration program. A copy of this letter can be found in Appendix A.

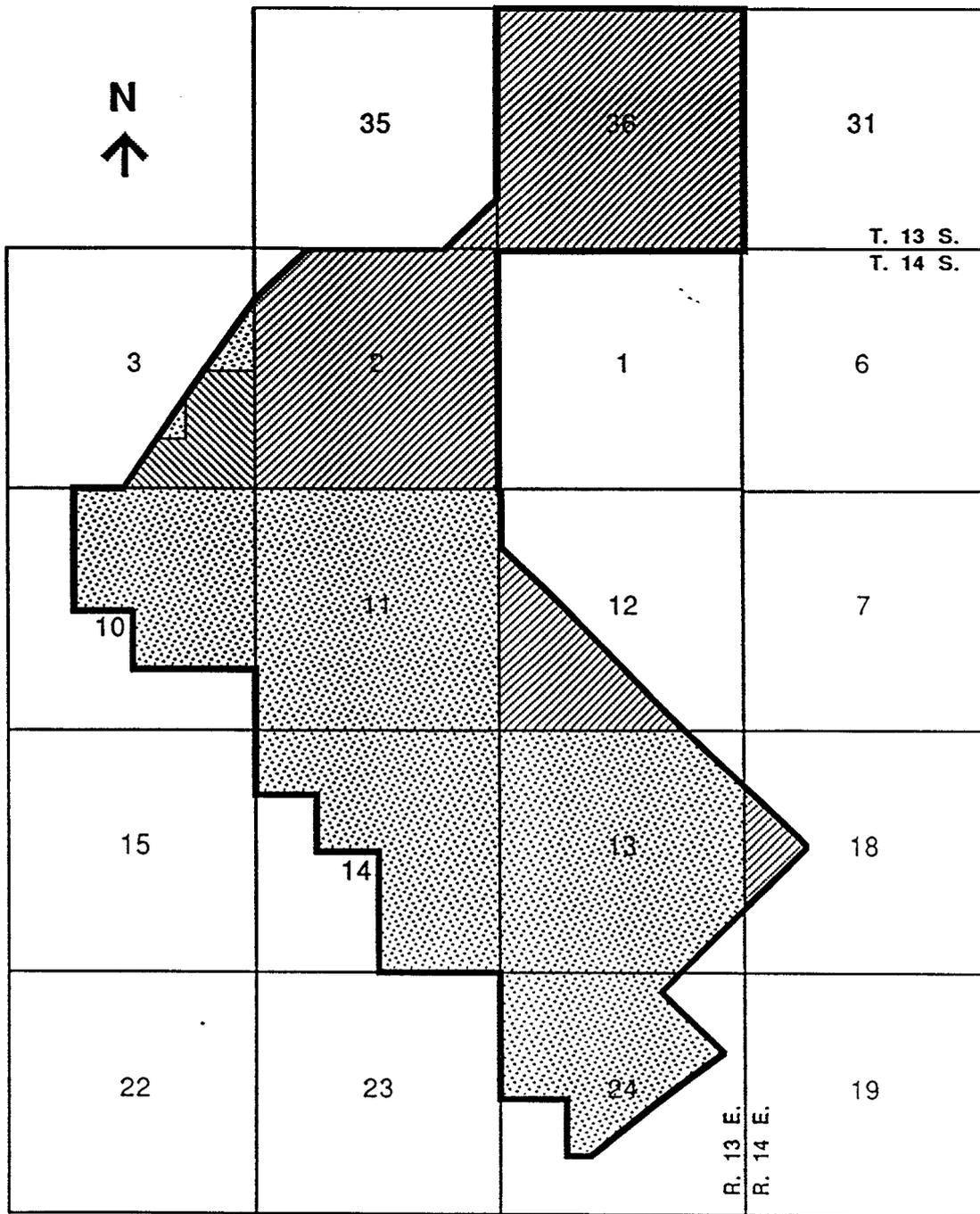
1.4 Mining Permit (Fig. 2)

The mining permit issued to Kaiser Coal Corporation's Sunnyside Mine extends to surface along the length of the B-Canyon underground drivage (refer Figure 2). The proposed access road to corehole site C will cross this ground and therefore that part falls under the jurisdiction of the State of Utah Natural Resources Department of Oil, Gas and Mining (D.O.G.M.). However, to avoid unnecessary duplication, L.P. Braxton, Administrator of the State of Utah D.O.G.M. has agreed to allow the BLM to become the Primary Agent in consideration of the exploration permit application (L.P. Braxton to D. Nyffler of BLM, Price, Utah).

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**B Canyon Property
Surface Ownership**

FIGURE 3

2.0 NATURAL ENVIRONMENT

2.1 Climate

The climate of the B-Canyon area is typically continental with cold winters and hot summers. Average monthly temperature ranges from 25° F in January to 70° F in July. Temperature extremes range from about 0° F to 90° F. Precipitation averages 10 inches per year, and potential evaporation averages 36 to 40 inches per year. Maximum snow accumulation averages less than a foot. Winds are generally light to moderate with average speeds below 20 m.p.h.

2.2 Geology

The B-Canyon property is located in the Book Cliffs Coalfield of east-central Utah. This coalfield, which forms the southern boundary of the Uinta coal region, extends 185 miles from Spring Canyon, Utah to Grand Junction, Colorado.

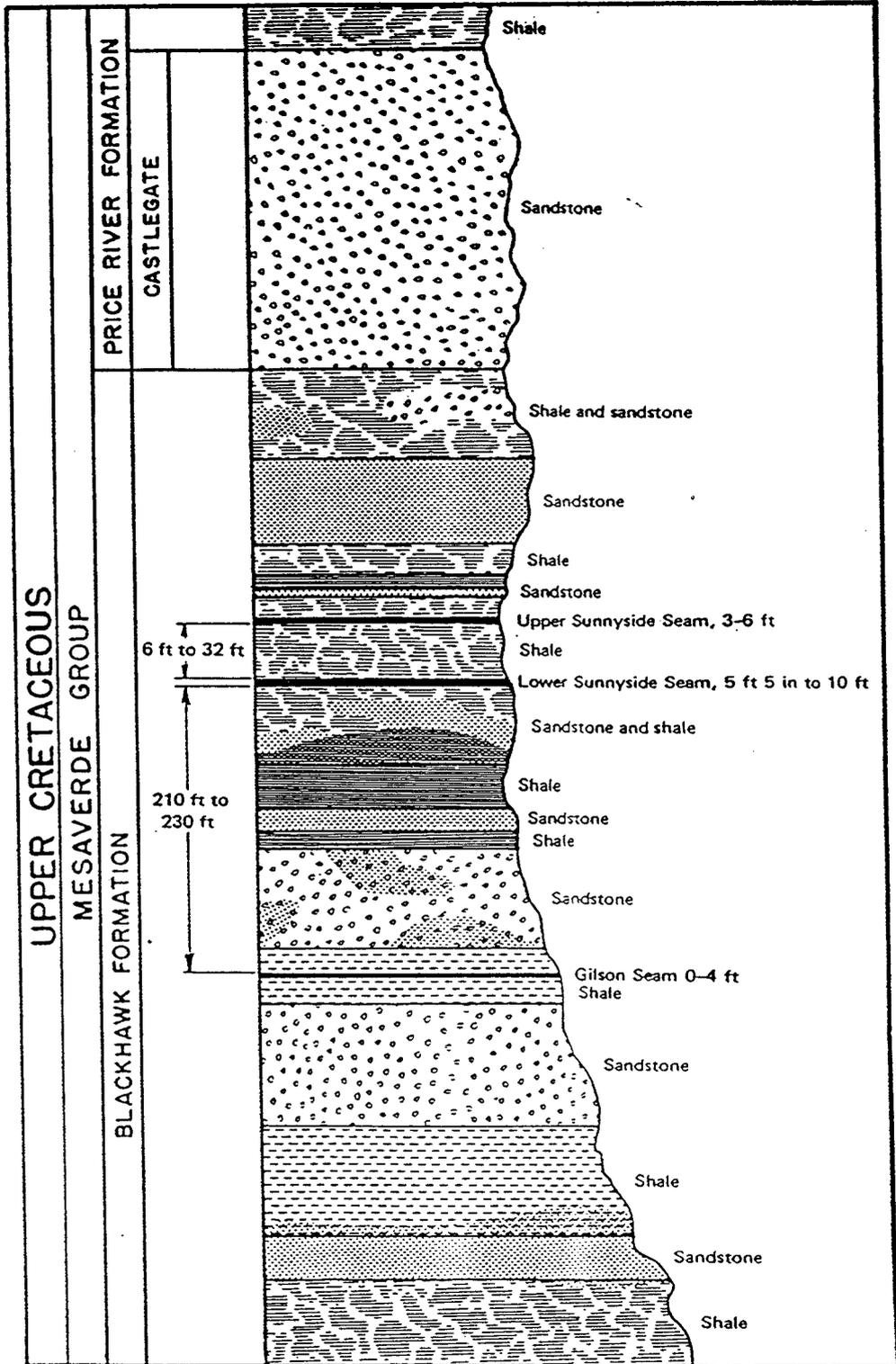
The southwest-facing Book Cliffs are rugged and deeply dissected by box canyons. Altitudes range from about 7,000 feet near the base of the cliffs nearly 9,000 feet on the ridge top.

The strata exposed on the property consists of Upper Cretaceous shales, sandstones and coal seam. The oldest rocks in the region are the Mancos Shales which outcrop in the broad lowland and lower slopes of the cliff. Overlying the Mancos Shales is the coal bearing Blackhawk Formation, part of the Mesaverde Group (See Figure 4 for Stratigraphic Column).

The Blackhawk and overlying Castlegate Sandstone form cliffs and account for the rugged topography.

The principal coal seam on the property and the focus of this exploration program is the Lower Sunnyside Seam. Found in the upper portion of the Blackhawk Formation the seam averages 8.0 feet in thickness. It is usually underlain by a massive to thickly layered sandstone, and overlain by 10 to 30 feet of interbedded sandstones, shales, and mudstones, which in turn form the floor of the Upper Sunnyside Seam. This latter seam is generally less than 4 feet thick and often contains shall partings.

The regional strike is roughly parallel to the face of the Book Cliffs at N 50° W. Dips towards the northeast are generally steeper near the outcrop ranging from 20% in the west and 10% in the east.



Sketch showing age and sequences of rock units in the B Canyon property area.

FIGURE 4

2.3 Soils

Soils along the Book Cliffs and in the associated canyons have formed primarily from parent materials of sandstone and shale. They are typically medium textured, shallow to moderately deep, and cobbly to stony. On southern slopes, soils tend to be shallow and rocky with a low revegetation potential. Whereas, on northerly slopes soils are cooler, moister, better developed, and more productive. Soils in this area are well to excessively drained.

In some areas, particularly on the ridge tops, bedrock is exposed with little or no soil cover.

Drill site A is on a colluvial/alluvial deposit of sand and gravel. However, the drill sites and roads leading to sites B and C are situated on thin immature, and heavily eroded soils, and in some places near exposures of Castlegate Sandstone.

2.4 Surface Water

The western portion of the B-Canyon property is drained by a series of intermittent streams which flow primarily in response to rainfall and snowmelt. All of these streams are located in steep-sided canyons, namely, from north to south, Bear Canyon, C, B and A Canyons. In turn each of these streams drains into Grassy Trail Creek.

In the northeast portion of the property there is an area of about 1.5 square miles which is in the Left Fork Whitmore Canyon watershed. The stream in this canyon has perennial flow due to the presence of springs within the watershed.

2.5 Ground Water

Most of the formations with the potential for being aquifers contain little or no water near their outcrops along the Book Cliffs. This is probably due to water movement down dip towards the northeast. Permeable strata in most of the formations above the Mancos Shale, including the coal bearing Blackhawk Formation probably contain water at depths of 1,500 feet or greater.

No springs are present along the proposed access road or in the vicinity of any of the three drill sites.

2.6 Vegetation

The study area is within the Pinyon/Juniper and Oak/Maple Shrubland Communities of the Transitional Live Zone. The following vegetation has been observed in and around the proposed roads and drill sites:

Douglas Fir	Gamble's Oak	Mountain Mahogany	Pinyon
Juniper	Big Sagebrush	Rabbitbrush	Oregon Grape
Mormon Tea	Cliffrose	Plumed Princes	Lupine
Cacti,	and a variety of grasses.		

None of the species on the official federal threatened and endangered plant list were found within the study area. However it has been reported previously to the BLM that a rare plant, *Hedysarum Occidentale* Canoe has been found in B-Canyon. This species is considered a Class High Priority 2 species by the Utah Native Plant Society. It was identified and verified by Dr. Stanly Welsh of Brigham Young University.

No marketable timber was found within the study area.

2.7 Fish and Wildlife

The variety of wildlife species in and near the proposed exploration area is large. Vertebrates number nearly 360 varieties, (Dalton and others 1977) of which the better known species are mule deer, mountain lion (cougar), black bear, coyote, red fox, gray fox, kit fox, bobcat, raptors, chukar partridge, blue and ruffed grouse, mourning doves, and rabbits.

Several squirrel, chipmunk, and mice species inhabit the area and white-tailed prairie dogs are near the proposed access routes. These species are prey to badgers, skunks, bobcats, coyotes, foxes and raptors. Several species of lizards, snakes, and other reptiles are throughout the area, but no gamefish are in the vicinity.

The only species sighted while targetting the roads and drill sites were:

a single mule deer, chipmunks, squirrels, pinyon and Canadian jays, crows and the tracks of a coyote.

The property is located within Utah's 1,169,000 acre Game Unit 27B. As a result it is considered suitable for mule deer winter grazing, particularly at the lower elevations in the canyons.

Several of the wildlife species that could potentially occur within the B-Canyon permit area are listed on the Federal List of Endangered and Threatened Wildlife and Plants (50 CFR 1911). These species include the following: black-footed ferret, the bald eagle, and the peregrine falcon. The nearest black-footed ferret sightings have been to the southwest of the property on pediment slopes in prairie-dog towns. The likelihood of finding the black-footed ferret on the property is slim, as there are no prairie-dog towns.

Similarly, it is unlikely bald eagles will be found on this property as their preferred food-fish and, preferred roosts, trees are not available.

Peregrines have been sighted in the region but no active eyries have been identified with the property. Their preferred habitat is one which is within one mile of a stream or river, and as a result it is unlikely that this species will nest on the property.

One other species of high interest to both the federal and state authorities is the golden eagle. In a 1984 survey several nests were sited in the NW 1/4 of section 23. However, it would appear none of the nesting sites will be disturbed by the proposed exploration activities.

2.8 Land Use and Cultural Resources

The B-Canyon property which includes both Federal and State lands, lies within a mining and grazing zone. The zoning ordinance currently in force was adopted by the Board of County Commissioners of Carbon County 2/15/77.

In 1959 and 1960 Kaiser Coal Corp. developed a two entry test drivage system from the Sunnyside Mine into the center of the B-Canyon property, a total distance of 11,000 feet along the strike. In addition there was 2,000 feet of up-dip development which broke out into B-Canyon. This mining took place in the Lower Sunnyside Seam. To this day no other mining has taken place on the property.

The current exploration proposal will have no adverse impact on any future mine development.

Cattle from the Mud Springs Allotment have historically grazed on the gentler southwest slopes of the Book Cliffs as well as on the pediment slopes beyond. The browse is native Pinyon-Juniper type on the cliffs slopes, and grasses on the pediment. About 340 cattle use the allotment from Oct. 20 - Dec. 20 and April 10 - June 10. This type of land use activity will not be affected by the exploration program.

Recreation use is low (less than 500 visitor days annually) and potential is limited. The visual amenities are extensive, but not outstanding or unique. Hunting, particularly for mule deer, is carried out to a limited extent.

An archeological inventory of the proposed drill sites and associated access roads was recently carried out by A-K Nielson Associates of Orem, Utah. A copy of this report can be found in Appendix B. In addition, copies have been dispatched to the the following agencies:

BLM Price Area Resource Office : M.B. Miller, Archaeologist

BLM State Office : Ms. J. Moe, Archaeologist

Utah State Historic Preservation Office : Ms. D. Christensen,

Regulation Assistance Coordinator

The only cultural resources noted were modern historic trash which has no significance. There were no previously recorded sites, or isolated artifacts in the general vicinity. Also, the National Register of Historic Sites shows no sites are even being considered for inclusion in the Register.

As a result of his study Asa Nielson has recommended to the BLM and the Utah State Historic Presentation office that BP Coal America be extended a cultural resource clearance for the project.

3.0 PROPOSED EXPLORATION PLAN

3.1 Drilling

BP Coal America proposes to drill three wireline coreholes (3 1/2" diameter) in the southwest portion of Kaiser Coal Corporation's B-Canyon property. (See Map 1 for the location of drill sites and their associated access route).

Corehole A is located in the Left Fork of A-Canyon on an existing jeep-trail.

SE 1/4 NE 1/4 NW 1/4 NW 1/4 of Section 24. T14S R13E

Sunnyside Quadrangle, Utah, Carbon Co. 7.5 Minute Series Topographic Map.

Corehole B is located on the ridge between the Left Fork of A-Canyon and B-Canyon.

NE 1/4 NW 1/4 SE 1/4 SE 1/4 of Section 14 T14S R13E

Corehole C is located on the ridge north of B-Canyon

SW 1/4 NE 1/4 NE 1/4 NW 1/4 of Section 14 T14S R13E

The holes are expected to range in depth as follows:

A -	135 ft.
B -	1025 ft.
C -	<u>1040 ft.</u>
TOTAL	2200 ft.

All holes will be cored from the base of the unconsolidated deposits (about 20 feet) down to 10 feet below the Lower Sunnyside Seam. The unconsolidated material will be cased off. Non-toxic biodegradable foam and bentonitic mud compounds will be used where necessary.

All core will be boxed, centrally stored and cataloged. Core descriptions and sampling of coal sections will be carried out by a geologist. The driller will record data on lost circulation, as well as water bearing horizons.

Each of the drill holes will be professionally surveyed on completion.

The principal objectives for drilling these three coreholes are:

- (1) To upgrade the reserves in the southwest portion of the property to the "measured" category as defined by the USGS/USBM ie 1/2 mile spacing between data points.

- (2) Provide valuable samples for coal testing purposes. These samples will be given a comprehensive analytical test program.
- (3) Corehole A will not only provide information on the extent of the burnt coal zone, but will help define the Lower Sunnyside split-coal line.

3.2 Geophysical Logging

All three holes will be geophysically logged using a multi sonde designed for coal logging. That is one which has gamma, caliper and dual spaced density detectors. Results will be digitally recorded on tape for future data manipulation by BP's Logsolve computer program. The standard paper prints of the logs will also be available. They will be recorded at a scale of 1" = 10' over the total length of the hole, and 1" = 1' over the coal sections.

An outside contractor will provide this service using a mobile truck mounted unit.

3.3 Sampling and Analyses

A coal analytical program has been designed with the primary objective of addressing the shortage of clean coal data with an emphasis on coking coal tests. Coal core samples, outcrop samples (taken by hand trenching methods) and underground channel samples will be analyzed. (Map 1 shows the location of potential outcrop and underground samples)

3.4 Access Roads

Access to the drill sites will be via existing unimproved road and jeep-trails along the base of the Book Cliffs and up A-Canyon and by new road construction up to the ridge tops. (See Map 1)

Only minor upgrading will be required to access drill site A located on the A-Canyon jeep-trail. To access drill site B an approximate 1 mile stretch of new road will have to be constructed starting at the top end of A-Canyon. The most difficult aspect of this new construction will be the initial 500 feet where the road climbs over the Castlegate Sandstone horizon. Once this area is negotiated the road will be constructed with the minimal amount of grading and excavation. The road width will also be kept to a minimum, generally the width of the dozer-blade - about 12 to 15 feet.

Access to drill site C begins on the ridge line approximately 1,500 feet northeast of site B. It then proceeds to contour around the top end of B-Canyon, and out onto the ridge located between B and C Canyons a total distance of about 2.25 miles. Very steep cliffs made access to drill site C impossible from B-Canyon, therefore the longer, yet more reasonable "contour" route has been proposed.

Drill sites will probably average 50 x 100 feet in size, and will have one or two mud pits of 15 x 10 x 6 feet dimensions. If surficial material needs to be removed for site construction, it will be stockpiled for redistribution on those sites.

The total area to be disturbed including the 3 drill sites is 6.25 acres.

3.5 Equipment

To complete the program described in section 3.1, 3.2 and 3.4 the following equipment will be employed.

Road Construction:

The construction of approximately 3.25 miles of new road, and the minor upgrading of the A-Canyon road will be handled by a local heavy-equipment contractor using a D7/D8 dozer and a track mounted back-hoe. This equipment will also be used to construct the drill sites and associated sumps, as well as provide assistance to the rig during site moves. Reclamation work will be carried out by means of the back-hoe.

Drilling:

Drilling will be completed by one truck-mounted wireline rig, such as a Longyear 44, which will have the capability of producing a 3 inch core at depths of up to 1,200 feet.

Auxiliary equipment to the rig will consist of an F700 water truck or similar, two 4 x 4 pickups, a Bean 35 water pump, rods, casing, core barrels and a water line.

Drilling will take place 24 hours per day using two, two-man shifts. An addition crew member will operate the water truck and pumps.

Geophysical Logging:

One mobile (4 x 4) truck mounted geophysical logging unit equipped with digital equipment and single pass multi sonde coal tool will be used on a call-out basis.

In addition BP Coal America supervisory staff will use a 4 x 4 vehicle. It is estimated that the whole program will generate traffic on the new roads of some 7 round trips per day.

3.6 Non-Mechanical Sampling Program

In addition to the three core holes, BP will be taking seven underground channel samples, and from about thirteen outcrop trenches it is estimated no more than a total of six samples depending on the extent of existing weathered or burnt coal. (See Map 1)

No mechanical equipment will be used to access these location, expose the coal, or take the sample, and as a result this aspect of the exploration program meets the "Casual-Use" definition set by the BLM.

3.7 Timing

BP Coal America wishes to complete the program described in this proposal as soon as possible prior to the onset of winter.

Upon approval by the Bureau of Land Management the following time schedule is envisaged.

Site Preparation -

Site A - 1/2 day
Site B - 6 days
Site C - 6 days

Drilling -

Corehole A - 2 days
Corehole B - 11 days
Corehole C - 11 days

Site preparation to A and B will be completed prior to the commencement of drilling. Therefore the program will last approximately 30 days.

Drill site reclamation will commence as each hole is completed, ie holes will be cemented, sumps back-filled, and where necessary, surficial material redistributed.

Due to the nature of the layout, road reclamation will not take place until after the completion of the drill program. Dependent on the weather, and following approval by the BLM, this work will be carried out as promptly as conditions permit.

It is urgent to complete this program in 1988 and review the geological and coal quality results is necessary in order to make an accurate evaluation of the B-Canyon property with the view to a possible acquisition.

4.0 PROPOSED RECLAMATION PLAN

It is the objective of BP to conduct the proposed exploration program in a manner which promotes minimal disturbance of the natural environment. Unfortunately, only drill site A is located on existing access, and as a result roads and drillsites will have to be constructed to sites B and C. The lasting impact of this necessary disturbance on the natural environment will be minimized by the following responsible reclamation.

4.1 Hole Plugging

All three holes will be cemented from the bottom to at least 50 feet above the Upper Sunnyside Seam. The top of the hole down to a depth of five feet will also be cemented. The cementing process will be carried out while the rig is still on the site so that the rods can be used as a means of forcing the cement to the bottom of the hole.

In accordance with the stipulations covering surface drilling programs the District Mining Supervisor will be informed as to the time when the each hole is to be plugged.

A survey marker displaying hole number, date, lease and location will be set in the top of the cement.

4.2 Drill Sites

Drill sites have been selected which permit drilling operations without requiring extensive levelling and excavation. The only excavations envisaged are the two 15 x 10 x 6 feet sumps required at each site.

When drilling is completed at each site any liquid or mud left in the sump will be pumped out and removed prior to backfilling. Where surficial material was removed to produce a level site, it will be replaced to the original contour.

The sites will be cleaned and all materials such as drill cuttings and equipment removed.

4.3 Access Roads

Access shall be restricted to existing and designated new roads. Existing roads will be maintained in good condition throughout the life of the exploration program. At completion of the program, existing roads will be abandoned in a condition equal to or better than prior to the exploration activities. For drill sites B and C which are located away from existing roads, the access roads will be routed through those areas which will have minimal impact on the natural environment. Roads will be routed over the most stable slopes available to minimize erosion. Access roads will be located to the extent possible where vehicles and equipment can pass overland without grading or excavation being necessary. The overall grade of access routes will not exceed 10 percent. Access roads will meander to the extent necessary to avoid excessive damage to vegetation and other obstacles, and will not be located in wet, steep or unstable areas where complete restoration is not possible.

In those areas where development of access roads requires grading or excavation, surficial material will be removed and stockpiled. In the event it is necessary to cross flowing streams or wet areas, temporary culverts will be installed. All access roads will be maintained sufficiently to ensure minimal erosion for the life of the road.

Immediately after a constructed access road is no longer needed for operations or reclamation it will be closed to all vehicle traffic. Constructed access roads, including temporary culverts, will be completely removed and the land affected regraded and revegetated. Surficial material will be redistributed, and the area seeded. Access roads will be reclaimed as promptly as possible upon the completion of operations. All disturbed areas will be reclaimed prior to abandonment of the area. Reclamation will logically be delayed until late spring, or at least until the area is dry enough to achieve reclamation as directed by the BLM.

4.4 Reseeding

After the drill sites and roads have been reclaimed to original contour the disturbed areas will be seeded with a mixture of species which have a history of success in revegetation of disturbed lands, provide palatable forage for livestock, and have food and cover values for wildlife. Unless the BLM designates a different one, a seeding mixture similar to the following is proposed at the rates specified:

Fairway Crested Wheatgrass	2 lb./acre PLS
Standard Crested Wheatgrass	1 lb./acre PLS
Pubescent Wheatgrass	2 lb./acre PLS
Intermediate Wheatgrass	2 lb./acre PLS
Russian Wild Rye	2 lb./acre PLS
Smooth Broom	2 lb./acre PLS
Orchard Grass	1 lb./acre PLS
Yellow Sweet Clover	2 lb./acre PLS
Mountain Big Sage Brush	1 lb./acre PLS
Birch Leaf Mountain Mahogany	1 lb./acre PLS
Antelope Bitter Brush	1 lb./acre PLS
Saskatoon Seivice Bark	1 lb./acre PLS
Four Wing Salt Bush	2 lb./acre PLS
(Rincon var. or seed collected at high elevation)	
Alfalfa	2 lb./acre PLS
(Nomeo, rambler travois, ladak in equal parts)	
Northern Utah Sweet Vetch	2 lb./acre PLS
Small Buivet	2 lb./acre PLS
TOTAL	26 lb./acre PLS

Seeding will be done by hand. Fertilizer will be applied as determined necessary to successfully revegetate disturbed areas. Mulch will be applied as determined necessary to control erosion. Additional erosion control structures, such as water bars, will be installed if deemed necessary.

4.5 Environmental Impact

The exploration program outlined in this proposal will have a minimal effect on the environment in the B-Canyon area. The impacts associated with this program are as follows:

Air Quality

The proposed exploration program will have a negligible affect on the ambient air quality. The only source of potential pollution of any significance would be fugitive dust from vehicles traveling in the area. However, due to the minimal amount of travel in the study area, the low speeds which will be maintained this is considered to be a negligible impact.

Hydrology

The proposed exploration program has given careful consideration to protection of the hydrologic regime. Potential sources of pollution include open drill holes and erosion from disturbed areas. Drill holes will be sealed promptly upon completion of drilling to avoid contamination of ground-waters. Appropriate measures for erosion control will be incorporated as the program progresses. Therefore, impacts of the proposed exploration program on the hydrologic regime will be minimal.

Fish and Wildlife

Any impact of the proposed exploration program on the wildlife resources of the study area would result from increased activity in the area and disturbance of the natural vegetation. Any such impacts can be minimized by restricting exploration activity to those areas specified in the proposed exploration plan and revegetating disturbed areas as soon as possible with species of value to wildlife for food and cover.

The value of the lease area for winter range for mule deer will not be diminished. Exploration activities will be short in duration and localized. Therefore, the proposed activities should not have a significant impact on the winter deer herd.

As mentioned previously in chapter 2.7, there are no game fish in the vicinity of the property, and therefore there will be no adverse impact.

Endangered Species

From the discussion in chapter 2.7 it was concluded there was little chance of the three regionally endangered species being present within the study area. Therefore, the chances of impacting threatened or endangered species were remote.

Archaeology

The independent archaeological study found no historical sites, or artifacts. Also the National Register of Historic Sites show no sites being considered for inclusion in the Register from the study area. If any significant archeological or historical site is uncovered during the program, operations will cease and the BLM Archeologist notified immediately.

**KAISER
COAL**

KAISER COAL CORPORATION
Sunnyside Coal Mines
P.O. Box 10
Sunnyside, Utah 84539
Telephone (801) 888-4421

October 6, 1988

Mr. Jeff Cundick
Bureau of Land Management
900 North 700 East
Price, Utah 84501

Dear Jeff:

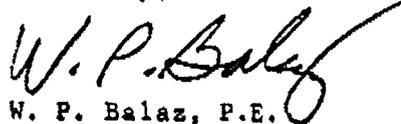
BP Coal America Inc. wishes to obtain coal samples from the Lower Sunnyside Seam located on Kaiser Coal Corporation's B-Canyon property. Samples will be taken from three wireline core holes as well as from underground channels and outcrop trenches. The accompanying "Exploration Plan" provides the details necessary to comply with 43 CFR, CH 11, Subpart 3482.

The non "casual-use" aspect of the proposed program will take place on Kaiser's U. S. Government Lease Serial No. 068754 - Utah 01215 located in T. 14S, R. 13E of the SLB and M.

With this letter, I am granting formal permission on behalf of Kaiser Coal Corporation for BP Coal America Inc. to carry out the program as described in the attached submission.

If you should have any questions regarding this matter, don't hesitate to contact me.

Sincerely,



W. P. Balaz, P.E.
Manager of Administration

WPB:th

Attachment

cc: Hal Lewis
Lou Kuchinic

RESEARCH REPORT U88-13

AN ARCHAEOLOGICAL INVENTORY OF THE PROPOSED BP COAL
DRILLING AND ACCESS PROGRAM, A & B CANYONS,
NEAR SUNNYSIDE, CARBON COUNTY, UTAH

By

Asa S. Nielson

For

B.P. Coal America Inc.
Cleveland, Ohio

A-K NIELSON ASSOCIATES
Orem, Utah

Federal Antiquities Permit 87-UT-57631
Utah State Project Authorization No. U-88-NP-487b

October 1, 1988

ABSTRACT

A-K Nielson Associates has completed an archaeological inventory of a proposed drilling and access program near A & B Canyons, Sunnyside, Carbon County, Utah. The program will be carried out by BP Coal American Inc, of Cleveland, Ohio. The only cultural resources noted were modern historic trash that is not significant. A cultural resource clearance is recommended for the project.

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AN ARCHAEOLOGICAL INVENTORY OF A PROPOSED BP COAL DRILL
AND ACCESS PROGRAM, A & B CANYONS, NEAR SUNNYSIDE,
CARBON COUNTY, UTAH

INTRODUCTION

On September 30, 1988, Asa S. Nielson of A-K. Nielson Associates (AKN) completed an archaeological inventory for BP (BP) Coal American Inc. near Sunnyside, Carbon County, Utah. BP will carry out a core drilling program with associated access road construction near A & B Canyons. The inventory was requested by Mr. Andy Bowler, Project Engineer for BP Coal. A special thanks is due to Mr. Bryon Allred who accompanied AKN on the inventory and Mr. Toni Siaperas for marking the access locations. Heavy vegetation obscured ground clearance along a portion of the access road, but otherwise, field conditions were excellent. The inventory was completed under Federal Antiquities Permit No. 87-UT-57631 and Utah State Project Authorization No. U-88-NP-487b.

LOCATION

The general project location is about 3 miles northwest of the community of Sunnyside, Carbon County, Utah (Figure 1). There are three drill locations, one with existing access and the other two requiring construction of new access (Figure 2).

Drill Area A is in the Left Fork of A Canyon, the SE $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 24, T.14S R.13E (Sunnyside Quadrangle Utah-Carbon Co. 7.5 Minute Series Topographic). Access to this location will be from an existing road.

Drill Area B is on a ridge between the Left Fork of A Canyon and B Canyon. It is in the NE $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 14, T. 14S R.13E (Figure 21). Access to this location will be from a new access road.

Drill Area C is on the ridge line north of B Canyon. It is in the SW $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 14, T.14S R.13E (Figure 2). Access to the location will be from a new access road.

Access to Drill Area B begins at the end of an existing access road in the bottom of the Left Fork of A Canyon (Figure 2) in the NW $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 13, T.14S R.13E. It proceeds east and north to about the NE $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 13, then west to about the NW $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 13. It turns south along the ridge line, ending Drill Area B. It is approximately .9 miles long.

Access to Drill Area C begins on the ridge line between the Left Fork of A Canyon and B Canyon in the NW $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 13 (Figure 2). It proceeds northeast along the steep, heavily vegetated slope of B Canyon about 4500 feet to the SW $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 12. It then turns northwest and

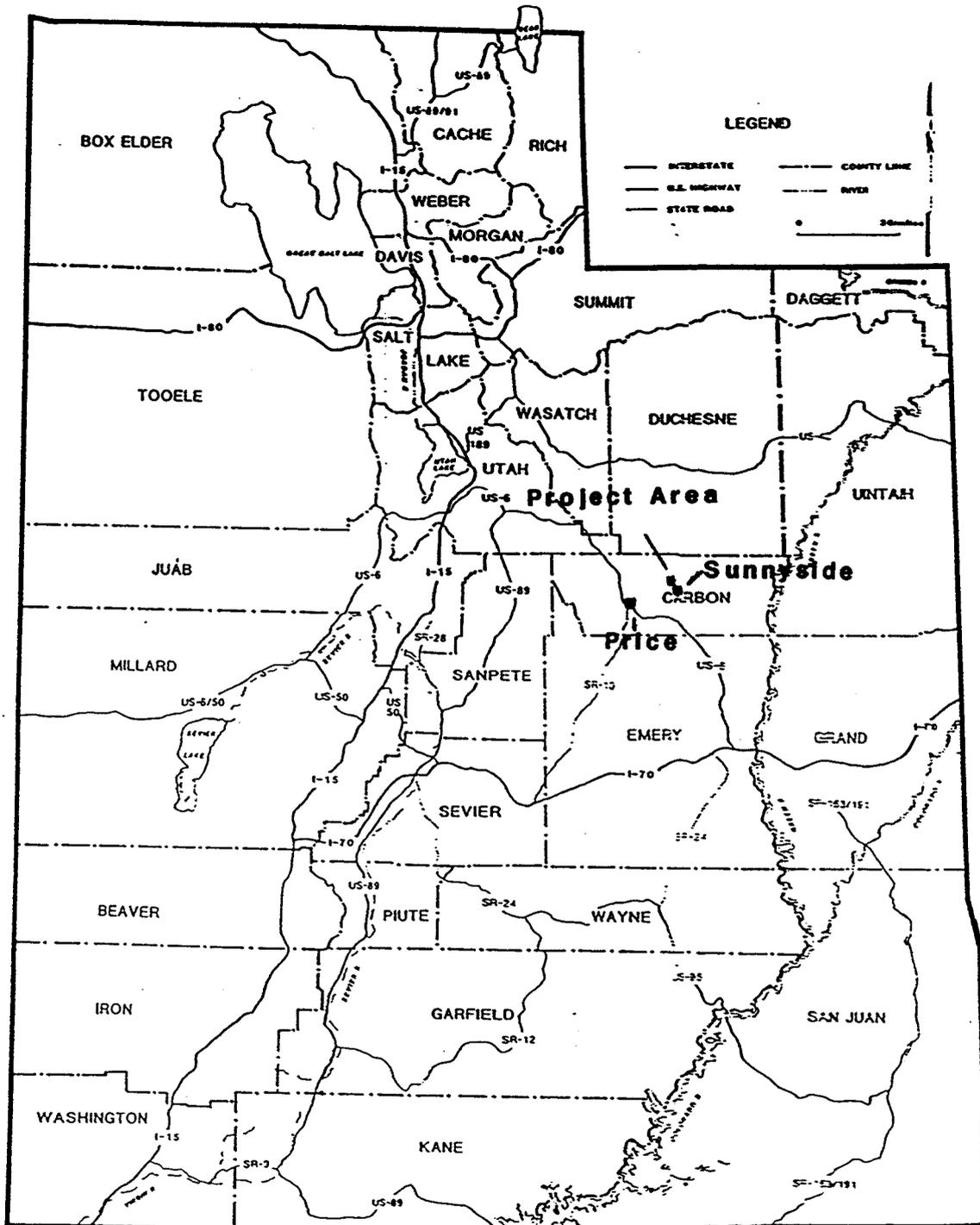


FIGURE-1
GENERAL PROJECT LOCATION

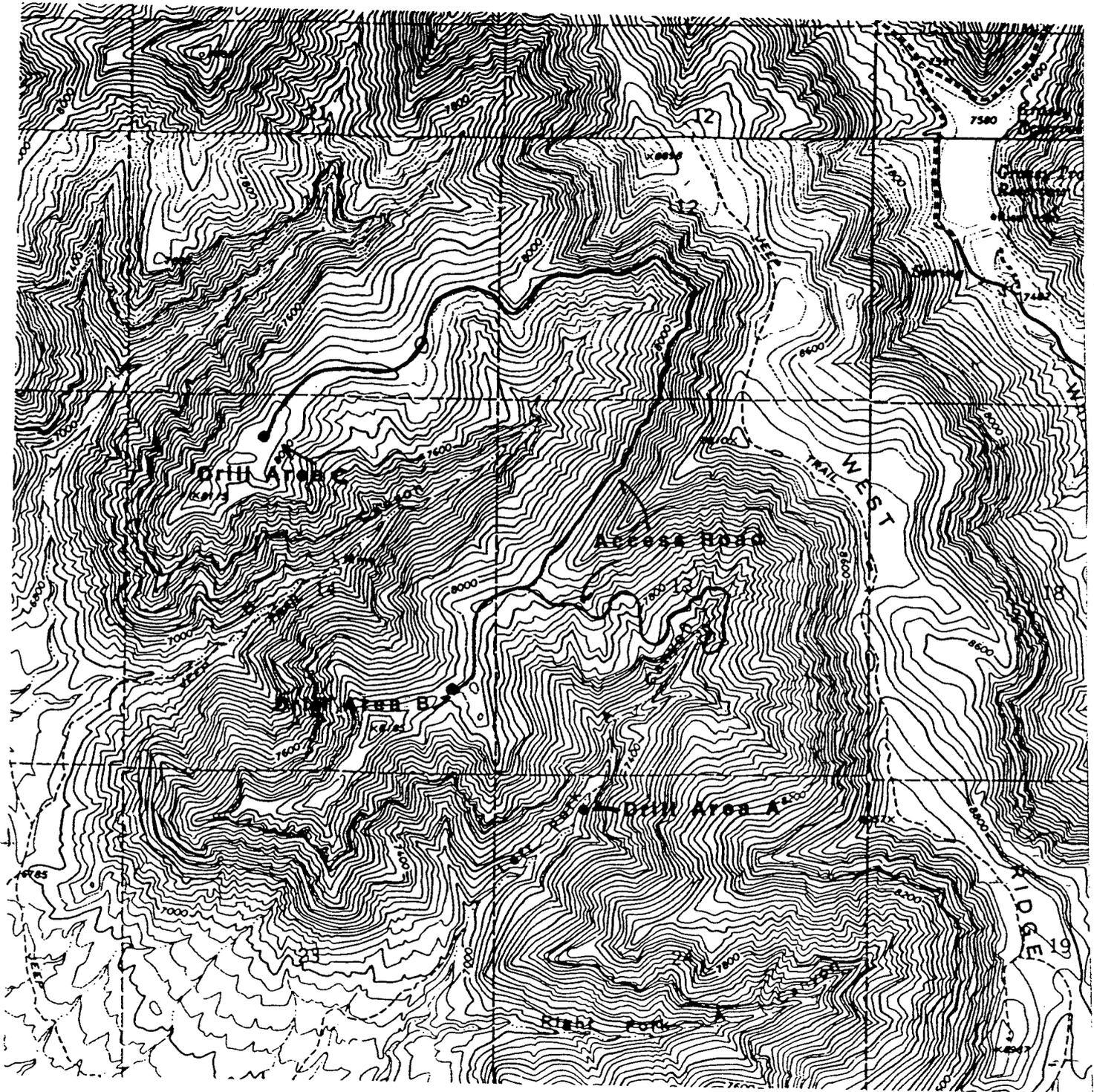


FIGURE-2
DRILL AND ACCESS LOCATIONS

west around the upper reaches of B Canyon, proceeding about 3900 feet to the ridge line in the SE1\4 NE1\4 NE1\4 SE1\4 of Section 11. The access than proceeds southwest along the ridge line, for a distance of about 3600 feet to Drill Area C.

In all, about 3.18 miles of access road were examined. Each drill area covered about 100 x 100 feet. All of the access roads and drill areas are on land administered by the Price Area Resource Office of the Bureau of Land Management.

ENVIRONMENT

Geology-The project area is within the Bookcliffs-Roan Cliffs Plateau of the Colorado Plateau (Stokes 1977). The project location is characterized by rugged exposure of Cretaceous Mesa Verde Group, Blackhawk Formation, Castlegate Sandstone and Price River Formation (Doelling 1972 and Hintze 1980). Drill Area A is on a colluvial/alluvial deposit of sand and gravel, which covers the upper shale member of the Blackhawk Formation. The access roads and Drill Areas B & C are on eroded exposures of Castlegate Sandstone. Soils in all area are thin, immature and heavily eroded.

Flora/Fauna-The project area is within the Pinyon/Juniper and Oak-Maple Shrubland Communities of the Transitional Live Zone. Vegetation varies greatly within the project area, with small pockets of mixed conifer that extends down the side of B Canyon. Vegetation observed includes Douglas Fir, Gamble's oak, mountain mahogany, pinyon, juniper, big sagebrush, rabbitbrush, squawbrush, wax current, raspberry, bitterbrush, Oregon grape, Mormon tea, cliffrose, plumed princes, lupine, cacti, and a variety of grasses. The vegetation of the area has been listed in detail elsewhere (Kaiser Coal 783.19:1-31, 1986).

The project location is within the Northern Great Plains Faunal Area: Uinta Basin Province-Dushesne Subcenter (Durrant 1952). Actual sighting of fauna was limited to a single mule deer, several chipmunks and squirrels, pinyon and Canadian jays, crows and tracks of coyote. The area is within Game Unit 27B, which is a summer grazing zone for deer, while the lower benches are winter grazing land for deer. Mule deer populations are considered to be low most of the time (Kaiser Coal 783.20-5).

PREVIOUS RESEARCH

Prior to beginning the actual field work, AKN conducted a Class I files search at the Utah State Historic Preservation Office and after the inventory at the Price Area Resource Office of the Bureau of Land Management. Brigham Young University has completed a brief examination of access roads and drill locations in A & B Canyons (Nielson 1986). Prior to this effort, the Utah State Historic Preservation Office (Nielson *et al* 1981), completed a cultural resource survey of portions of the Kaiser Coal Company Sunnyside Mine Lease. None of the sites noted

during the previous work will be impacted by the proposed drilling and access roads. Additional survey has been completed to the north and east by the Archaeological/Environmental Research Corporation (Hauck 1977), but again, none of the sites noted in that report will be affected by the present project. The history and prehistory of the project area has been adequately recited elsewhere and will not be repeated herein (Nielson et al 1981).

INVENTORY METHODS

BP marked the proposed drill areas and access roads with plastic flagging prior to the AKN inventory. AKN completed a single walking transect along the flagged routes, averaging a 20 meter wide corridor. Thick oak brush and mahogany hampered the efforts on the east side of B Canyon. Although an area of about 100 x 100 feet was requested for each drill location, AKN covered about 150 x 150 feet to insure plenty of coverage. Notes on the general flora, fauna, and geology were completed along the way. Isolated cultural resources were noted on project recording forms and plotted on a U.S.G.S. map. No artifacts were collected.

INVENTORY RESULTS

AKN noted the presence of two isolated, recent historic artifacts. One was a single crushed beverage can (pop top variety). The second was a scatter of about 6 cans and two screw lid jars that is probably the remains of recent herding activity. The cans are pry-top variety and the bottles clear, post 1940's style food containers. None of these materials are significant and neither were recorded as sites.

There were no previously recorded sites or isolated artifacts in the general vicinity or within the corridors of drill locations. AKN also consulted the National Register of Historic Site List. At the present time, there are not sites on or currently being studied for inclusion to, the National Register of Historic Sites in close proximity to the project area.

NATURE OF PROPOSED IMPACTS

BP will conduct a core drilling operation to assess coal production potential for the mine lease area. This will require the construction of the access roads by heavy equipment and leveling of drill pad locations. Numerous personnel will be involved. The drill locations and access roads will be rehabilitated upon completion of the drill program. It is likely that the two non-significant historic isolated resources will be impacted by the project.

PROJECT RECOMMENDATIONS

AKN recorded no significant cultural resources during the inventory. There are no National Register resources known in or

within close proximity of the access roads or drill locations. AKN recommends that the Bureau of Land Management and the Utah State Historic Preservation Office extend a cultural resource clearance to BP for the project, with the following restrictions:

- 1-that personnel and equipment associated with the project be restricted to those areas cleared for the project;
- 2-that personnel associated with the project refrain from collecting or otherwise disturbing cultural materials which may be encountered during development; and
- 3-that should unrecorded cultural materials be encountered during the development, activities in the affected area (s) should cease and the Price Resource Area Office of the Bureau of Land Management or the Utah State Historic Preservation Office be notified immediately.

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October 1, 1988

Mr. Andy Bowler
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Cleveland, Ohio 44114-2375

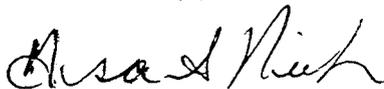
Mr. Bowler;

Please find enclosed your copy of "An Archaeological Inventory of the BP Coal Drilling and Access Program, A & B Canyons, Near Sunnyside, Carbon County, Utah" by Asa S. Nielson. Briefly, AKN recorded no significant new or previously reported cultural resources in or within close proximity of the proposed drill locations and access roads. We have recommended that BP Coal America, Inc. be granted a cultural resource clearance for the project.

For your information, copies of this report have been forwarded to Mr. Blaine Miller, Archaeologist-Price Area Resource Office Bureau of Land Management; Ms. Jeanne Moe, Archaeologist-State Bureau of Land Management; and Ms. Diana Christensen, Regulation Assistance Coordinator-Utah State Historic Preservation Office.

If you have any questions or concerns about the report or the recommendations, please feel free to contact us at any time.

Sincerely,



Asa S. Nielson
P.I.-AKN

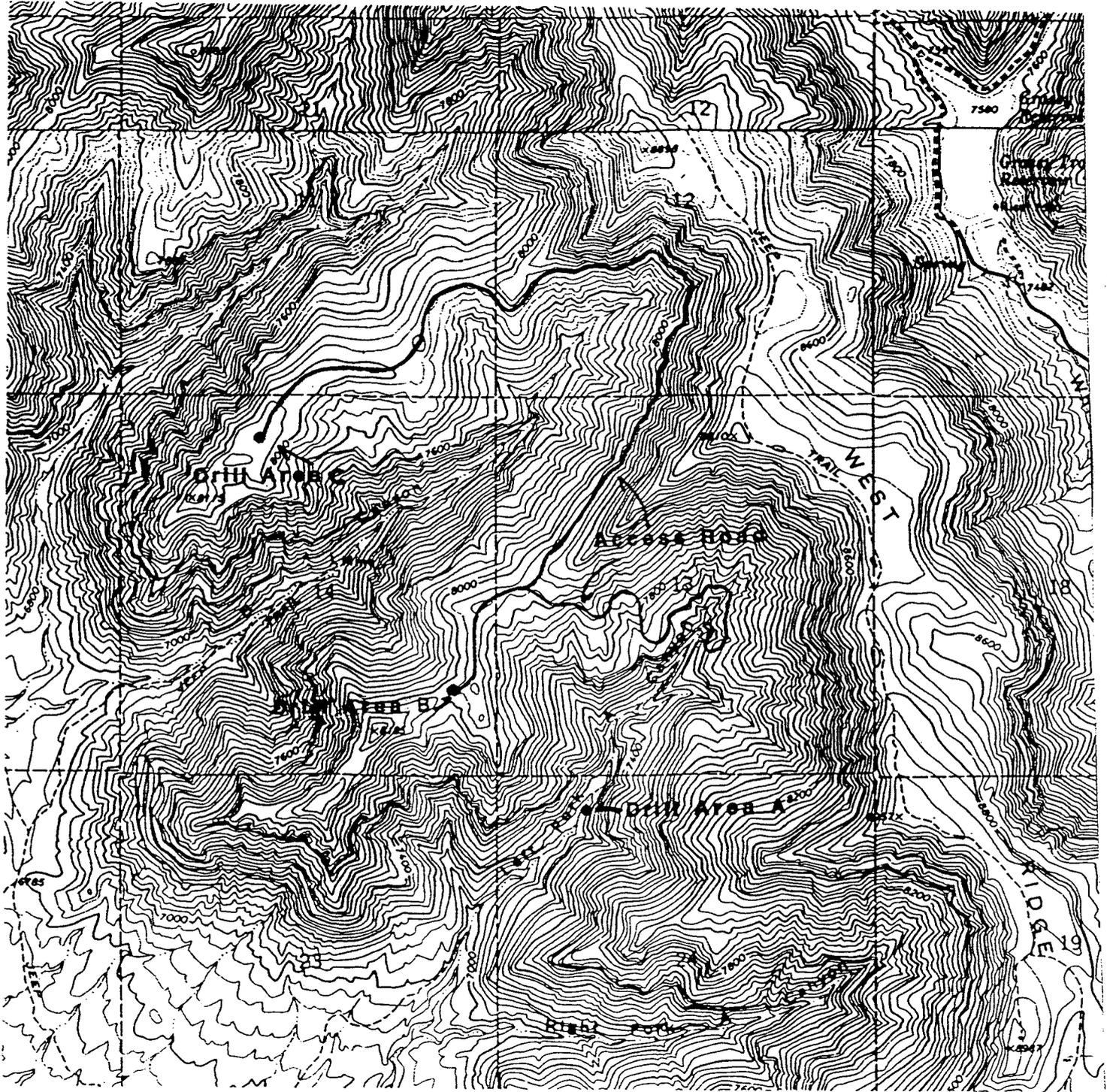


FIGURE-2
DRILL AND ACCESS LOCATIONS