

PERMIT CHANGE TRACKING FORM

DATE RECEIVED	1/24/94	PERMIT NUMBER	ACT/015/025
Title of Proposal:	Exploration	PERMIT CHANGE #	CEP-94A
Description:	Outside Permit Area Reconnaissance to BLM.	PERMITTEE	Co-Op
		MINE NAME	Ben Canyon

	DATE DUE	DATE DONE	RESULT
<input type="checkbox"/> 15 DAY INITIAL RESPONSE TO PERMIT CHANGE APPLICATION			<input type="checkbox"/> ACCEPTED <input type="checkbox"/> REJECTED
<input type="checkbox"/> Notice of Review Status of proposed permit change sent to the Permittee.			Permit Change Classification
<input type="checkbox"/> Request additional review copies prior to Division/Other Agency review.			<input type="checkbox"/> Significant Permit Revision
<input type="checkbox"/> Notice of Approval of Publication. (If change is a Significant Revision.)			<input type="checkbox"/> Permit Amendment
<input type="checkbox"/> Notice of request to modify proposed permit change prior to approval.			<input type="checkbox"/> Incidental Boundary Change

REVIEW TRACKING	INITIAL REVIEW		MODIFIED REVIEW		FINAL REVIEW AND FINDINGS	
DOGM REVIEWER	DUE	DONE	DUE	DONE	DUE	DONE
<input checked="" type="checkbox"/> Administrative <i>psj</i>		<i>jk</i>				
<input checked="" type="checkbox"/> Biology <i>SW</i>						
<input type="checkbox"/> Engineering						
<input type="checkbox"/> Geology						
<input type="checkbox"/> Soils						
<input checked="" type="checkbox"/> Hydrology <i>TM</i>						
<input type="checkbox"/> Bonding						
<input type="checkbox"/> AVS Check						

COORDINATED REVIEWS	DUE	DONE	DUE	DONE	DUE	DONE
<input type="checkbox"/> OSMRE						
<input type="checkbox"/> US Forest Service						
<input type="checkbox"/> Bureau of Land Management						
<input type="checkbox"/> US Fish and Wildlife Service						
<input type="checkbox"/> US National Parks Service						
<input type="checkbox"/> UT Environmental Quality						
<input type="checkbox"/> UT Water Resources						
<input type="checkbox"/> UT Water Rights						
<input type="checkbox"/> UT Wildlife Resources						
<input type="checkbox"/> UT State History						
<input type="checkbox"/> Other						

<input type="checkbox"/> Public Notice/Comment/Hearing Complete (If the permit change is a Significant Revision)	<input type="checkbox"/> Permit Change Approval Form signed and approved effective as of this date. <input type="checkbox"/> Permit Change Denied.
<input type="checkbox"/> Copies of permit change marked and ready for MRP.	<input type="checkbox"/> Notice of <input type="checkbox"/> Approval <input type="checkbox"/> Denial to Permittee.
<input type="checkbox"/> Special Conditions/Stipulations written for approval.	<input type="checkbox"/> Copy of Approved Permit Change to File.
<input type="checkbox"/> TA and CHIA modified as required.	<input type="checkbox"/> Copy of Approved Permit Change to Permittee.

SR/PR REC'D JAN 17 1994

RECEIVED

JAN 24 1994

DIVISION OF
OIL, GAS & MINING

EXPLORATION PLAN
GENTRY MOUNTAIN
EMERY COUNTY, UTAH

CO-OP MINING CO.
P.O. BOX 1245
HUNTINGTON, UTAH 84528
(801) 381-2450

INTRODUCTION

The following Exploration Plan has been prepared in accordance with the Code of Federal Regulations, Title 43, Chapter II, Subparts 3482 (Exploration Plans) and 3484 (Performance Standards) as well as the Code of Federal Regulations, Title 30, Chapter VII, Part 815 (Permanent Program Performance Standards, Coal Exploration) and the Utah Mining Code Rules for Coal Exploration UMC R645-201-200 (Minor Coal Exploration, Less than 250 Tons).

The format of this Exploration Plan follows that of 43 CFR 3482.1(a)(3).

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4	Letter From C.O.P. Coal Development Co.

3482.1(a)(3)(i)

APPLICANT, OPERATOR, LESSEE

(A) Applicant:

CO-OP MINING CO.
P.O. Box 1245
Huntington, Utah 84528
(801) 381-2450

Note: C.W. Mining Co. is doing business as (DBA) Co-Op Mining Company (Co-Op).

Resident Agent: Mr. Wendell Owen
P.O. Box 1245
Huntington, Utah 84528
(801) 381-2450

(B) Operator:

CO-OP MINING CO.
P.O. Box 1245
Huntington, Utah 84528
(801) 381-2450

(C) Lessee - The lessee of the Federal Leases is:
C.O.P. Coal Development Co,
3212 So. State Street
Salt Lake City, Utah 84115
(801) 466-3361

3482.1(a)(3)(ii)

**REPRESENTATIVE RESPONSIBLE FOR
EXPLORATION**

Representative - The representative of Co-Op Mining Company who will be present during and be responsible for conducting the exploration is:

Mr. Charles Reynolds
P.O. Box 1245
Huntington, Utah 84528
(801) 381-2450

3482.1(a)(3)(iii) NARRATIVE DESCRIPTION OF EXPLORATION AREA

The Bear Canyon mining facility is located in the Wasatch Plateau of Emery County, Utah. It is situated approx. 11 miles west of Huntington, Utah on State Highway 31.

The proposed exploration area lies within T16S R7E, sections 10, 11, and 14 (McCadden Hollow) north of the existing permit area, and T16S R8E, section 30 (Wild Horse Ridge), east of the existing permit area. The proposed exploration drill sites are shown in figure 1.

Federal Lease Serial Numbers

The proposed exploration is to be conducted on Federal Lease areas U-024316, U-46484, U-020668, and U-38727. The Leases include the following area:

U-024316:

T16S, R7E SLBM

Sec 13: $W\frac{1}{2}W\frac{1}{2}$

Sec 14: $NE\frac{1}{4}, E\frac{1}{2}NW\frac{1}{4}$

U-46484:

T16S, R7E SLBM

Sec 10: $N\frac{1}{2}, N\frac{1}{2}S\frac{1}{2}, S\frac{1}{2}SE\frac{1}{4}, SE\frac{1}{4}SW\frac{1}{4}$

Sec 11: ALL

Sec.12: $W\frac{1}{2}W\frac{1}{2}$

U-020668:

T16S, R7E SLBM

Sec 25: $SE\frac{1}{4}NE\frac{1}{4}, NE\frac{1}{4}SE\frac{1}{4}$

T16S, R8E SLBM

Sec 30: $W\frac{1}{2}, W\frac{1}{2}NE\frac{1}{4}, NW\frac{1}{4}SE\frac{1}{4}$

Sec 31: $NE\frac{1}{4}NW\frac{1}{4}, NW\frac{1}{4}NE\frac{1}{4}$

U-38727:

T16S, R7E SLBM

Sec 24: $SE\frac{1}{4}NE\frac{1}{4}, E\frac{1}{2}SE\frac{1}{4}$

Sec 25: $N\frac{1}{2}NE\frac{1}{4}, SW\frac{1}{4}NE\frac{1}{4},$

$NW\frac{1}{4}SE\frac{1}{4}, S\frac{1}{2}SE\frac{1}{4}$

$SW\frac{1}{4}NW\frac{1}{4}, NW\frac{1}{4}SW\frac{1}{4}$

T16S, R8E SLBM

Sec 19: $S\frac{1}{2}NW\frac{1}{4}, SW\frac{1}{4}, SW\frac{1}{4}SE\frac{1}{4}$

SURFACE TOPOGRAPHY

The topography is generally rugged, with elevations varying from 7,000 to about 10,000 ft above sea level. Slopes vary from more than 210 pct (65 deg.) to less than 4 pct (2 deg.) on Gentry Ridge.

Three of the drill holes will be north (near McCadden Hollow) and one will be south east (Wild Horse Ridge) of the existing permit area.

Geology

Table 1 gives the generalized Stratigraphic sequence and unit description of the Wasatch Plateau.

The proposed exploration areas lie near the eastern face of the Wasatch Plateau Coal Field within the Hiawatha U.S.G.S. 7½ minute quadrangle map (see figure 1).

The exposed geologic column, in ascending order, consists of the Mancos Shale, the Star Point Sandstone, the coal-bearing Blackhawk Formation, the Castlegate Sandstone, the Price River Formation, and the North Horn Formation which caps Gentry Mountain (Doelling, 1972). All of these Geologic units are Cretaceous in age with the exception of the North Horn Formation, which is Tertiary. The Star Point Sandstone through the Price River Formation composes the Mesaverde Group in this locality. The minable coal seams are located in the upper Cretaceous Blackhawk Formation.

The Blackhawk Formation is composed of alternating sandstones, shales, mudstones and coal representing marine, transitional and terrestrial varieties of sedimentation. Depositional environments of the Blackhawk Formation include littoral, lagoonal, estuarine and swamp type environments. The Blackhawk outcrops to form a step and slope topography slightly less resistant than the Star Point below and the Castlegate above. Multiple coal seams are found within the lower 350 ft of the Blackhawk.

Structurally, strata in the Eastern Wasatch Plateau generally dip southerly (sometimes slightly southeast of southwest) at low angles of 1 to 3 deg. Locally, near faults, the dip increases to about 20 deg. Three major north-south trending fault zones have been defined in the Wasatch Plateau Coal Field (Figure 2). Each zone is the product of a high angle block fault with extensive minor fracturing within the graben. The Joes Valley Fault is the largest zone. As shown in Figure 2, the zone lies several miles west of the existing permit area. The Pleasant Valley Fault Zone is vertical with between a few ft to 100 ft displacement (Doelling, 1972), although greater displacement occurs locally. The North Gordon Fault Zone, which occurs near the eastern boundary of the Wasatch Plateau field, is the least extensive of the zones. The trends of the faults have a complex pattern. Displacement is generally less than 800 ft.

Water Resources

The San Rafael River Basin of the Upper Colorado River Region is generally classified as an arid basin. The upper drainages along the Wasatch Plateau receive enough snow precipitation

to be classified as semi-arid to sub-humid due to the amount of precipitation increase with altitude.

Various springs, seeps, and streams occur in the adjacent and surrounding area, see attachments 1A and 1B (from appendix 7M of the Bear Canyon Mine, Mining and Reclamation Plan, CO-OP Mining Co.). The major streams in the area are Bear Creek (a perennial stream) and Trail Creek (an intermittent stream). These discharge into Huntington Creek, a perennial stream. The primary source of water for the streams in the area is snow melt (Danielson, 1981). Hence, peak flows generally occur in the late spring and early summer.

The Star Point Sandstone has been identified as a potential regional aquifer. Other ground water occurring above the Star Point aquifer is contained in perched, discontinuous aquifers in the upper Blackhawk Formation, the Castlegate Sandstone, the Price River Formation, and the North Horn Formation.

Vegetation & Soil

The vegetation types in the area consist of Pinyon-Juniper, Conifer, Grass, and Sagebrush. No threatened or endangered plant species have been identified in the exploration area.

*needs
literature
cite*

Soils in the exploration areas come from the North Horn and Price River formations and consist of sandstone, shale, and limestone conglomerates. By limiting the size of the drill site, retaining any existing topsoil for reclamation, and reseeding with an appropriate mix, revegetation can be achieved.

Wildlife

The exploration area is classified as high priority elk and mule deer summer range. Other wildlife in the area include cougar, bobcat, black bear, rabbit, skunks and other fur bearers, rodents and other small mammals, amphibians and reptiles. There are golden eagle nests on adjacent areas but not within one half mile of the proposed drill sites.

Threatened Or Endangered Species

No threatened or endangered plant or animal species have been found in the proposed exploration areas (see attachment 2).

Land Use

The land in the exploration and adjacent areas is used for mining, grazing, timber, recreation, and wildlife. Co-op's current permit area for coal mining is adjacent to the proposed exploration areas.

Historical and Cultural Resources

On October 22, 1993 an archeological survey was performed by John Senulis of SENCO-PHENIX for proposed exploration sites; SDH-2, SDH-3, and SDH-4. A previous survey done in July, 1990 by SENCO-PHENIX encompassed sites; SDH-1 and SDH-1 Alternate. No cultural resources of National Register significance were located. These survey reports are on file at:

State of Utah
Division of State History
Utah State Historic Preservation Office
300 Rio Grande
Salt Lake City, Utah 84101-1182

and

US Department of Agriculture
US Forest Service
Manti-LaSal National Forest
Price District Office
599 West Price River Drive
Price, Utah 84501

3482.1(a) (3) iv NARRATIVE DESCRIPTION OF COAL EXPLORATION METHODS

Pre-Exploration Activities

On October 13, 1993 an onsite visit of the drill sites was done by representatives from the BLM, US Forest Service, and Co-op Mining Co. Site SDH-1 ALTERNATE was added because of a possible goshawk nest territory in the vicinity of SDH-1. The US Forest Service will conduct another visit in the spring of 1994 to confirm or deny its existence. Either SDH-1 or SDH-1 ALTERNATE will be drilled, but not both.

As stated previously in this exploration plan, on October 22, 1993 an archeological survey was also performed by SENCO-PHENIX.

The Chief of the Price Coal Office will be notified 48 hours prior to any site construction or drilling equipment being moved on site. A copy of the exploration permit will be available for inspection on-site. Any proposed changes to the approved exploration plan will be reviewed with the Chief of the Price Coal Office and/or the appropriate agencies before they are implemented.

Drill Site Construction

Three of the drill sites and one alternate site are located immediately off existing USFS roads. The fourth site will be accessed by helicopter. Therefore no new road construction will be required. The drill sites will be approximately one half acre, or the minimum size necessary for efficient drilling operations. Any topsoil that is present will be removed from the drill site and stockpiled. A mud pit may be dug at the site to contain drill cuttings. If required, water for drilling operations will be obtained from Cedar Creek. Co-op Mining Co. has permission from United States Fuel Co. to use water from Cedar Creek for this purpose (see Attachment 3). The approximate amount of water that would be required is 168,000 gallons or 0.52 acre-feet.

Site preparation will be minimal, with one bulldozer and one backhoe. Brush or tree clearing will not be required at the sites (with the exception of sagebrush). If topsoil occurs it will be stockpiled before pad construction is begun. The drill site and adjacent area will be sized to allow sufficient space for all necessary drilling equipment. Material will be made available for protection of topsoil as needed.

Methods and Equipment for Drilling

Rotary Drilling and/or coring will be done by a rubber-tired truck-mounted drilling rig. Support equipment will consist of a water truck, a rig-up or support truck, a fuel truck, a pipe truck or trailer, a truck-mounted air compressor or booster, and 4x4 pickups for the crews and company representatives. A truck mounted geophysical logging unit will be used on the hole location after drilling but prior to monitor well completion.

For the drill site to be accessed by helicopter the required equipment will be flown in and assembled on site.

The hole will be drilled with air if possible. If water is encountered, and cutting return is lost, water may also be used for drilling. It is not anticipated that other drilling fluids will be required, however, only a non-petroleum based

fluid would be used in any event. Any recirculation will be within a closed system, using a tank or pit for total containment. Care will be taken to ensure that the prevailing hydrologic balance will not be adversely affected by the drilling methods used. Drilling operations will be conducted in such a manner to protect the water resources in the area.

Plugging of Drill Holes

The drill holes will not be plugged but will be modified into water monitoring wells.

Estimated Size and Depth of Holes

The holes will be rotary drilled (approximately 8 inch diameter) or cored (approximately 3 inch diameter). The estimated depth of each hole is shown in table 2. The bottom of the holes will be approximately 50 ft below the Hiawatha seam and into the Spring Canyon Tongue of the Starpoint Sandstone. Casing will be installed as required to keep the hole open and to prevent drilling and circulation problems. Cuttings will be sampled and logged. The three coal seams and their immediate roof and floor strata (20 to 40 ft above and below) may be cored after which reaming and rotary drilling will resume to the bottom of the hole. After the total depth is reached, the holes will be logged with a standard suite of geophysical coal logs. The holes will then be completed with installation of materials to construct a ground water monitoring well.

Modification of Drill Hole to Monitoring Well

Figure 3 shows the proposed well design. A PVC well screen will be installed at the bottom of the hole below the Hiawatha seam and will be surrounded by gravel. Bentonite pellets will be used above this to seal off the Star Point aquifer. Most of the hole will be filled with a standard gravel pack consisting of drill cuttings or a bentonite grout. Any overlying aquifers will be sealed off above and below with bentonite pellets to keep the Star Point Aquifer isolated. The top of the well will be fitted with a steel casing and locking cap.

Reclamation Plan

Reclamation activities will immediately follow the completion of the well.

1. Upon completion of drilling activities at each site, all debris, trash, and drilling related equipment will be removed from the site.
2. If needed, the mud pit will be reclaimed when the mud pit is sufficiently dry, it will be filled with stored soil material and compacted to minimize any settling.
3. A backhoe and a bulldozer will redistribute material on and around the drill pad to achieve as closely as is practicable the original contour of the site.
4. Stored topsoil will be distributed as evenly as possible over the disturbed pad area. The topsoil will be roughened to aid in the retention of seed and moisture.
5. The drill pad area will be re-seeded using an appropriate seed mix (same as used in existing permit area for similar reclaimed areas) at the rate specified.

3482.1(a) (3) v ESTIMATED TIMETABLE FOR CONSTRUCTION, DRILLING, AND RECLAMATION

The anticipated start of exploration activities is on or around July 5, 1994. It is estimated that it will take from four to six weeks for construction, drilling, and reclamation activities to be completed.

3482.1(a) (3) vi AMOUNT OF COAL TO BE REMOVED

The coal seems will either be cored (approximately 3 inch diameter) or rotary drilled (approximately 8 inch diameter). Assuming a coal thickness of 25 feet (total) for all coal seems, the amount of coal removed will be less than 500 pounds. Any coal that is cored will be tested for various parameters. Any rotary drilled coal would be lost.

3482.1(a) (3) vii MEASURES TO BE USED TO COMPLY WITH PERFORMANCE STANDARDS FOR EXPLORATION (43 CFR II 3484.1(a)), 30 CFR 815.15, AND UTAH PROGRAM RULES

3484.1(a) (1)

This exploration plan addresses all applicable parts of Performance Standards for Exploration as well as 30 CFR 815.15 and the Utah Mining Code Rules for Coal Exploration UMC R645-201-200.

3484.1(a) (2)

Casing will be set as needed to maintain hole integrity and to prevent circulation problems. Blowout prevention will not be required since the location and depth of drill holes are not in the area of known oil, gas, or geothermal resources.

3484.1(a) (3)

The drill holes will be used as water monitoring wells and therefor will not be plugged.

3484.1(a) (4)

Co-op Mining Co. will retain for 1 year all drill and geophysical logs and shall make them available to an authorized officer, if requested. Any unanalyzed drill cores will be retained by Co-op Mining Co. if requested, and made available to an authorized officer.

3484.1(a) (5)

The exploration drill holes will be modified and used as water monitoring wells for the purpose of monitoring the quantity and quality of ground water.

3482.1(a) (3) viii MAP OF EXPLORATION AREA

Figure 1 shows a map of the proposed exploration area with the existing access roads to be used. This is at a scale of 1:24,000 (1" = 2,000') and is taken from the USGS Hiawatha Quadrangle (7.5 minute)

3482.1(a) (3) ix SURFACE AND SUBSURFACE OWNERS OF RECORD

Surface Owner

US Department of Agriculture
US Forest Service
Manti-LaSal National Forest
Price District Office
599 West Price River Drive
Price, Utah 84501

Subsurface Owner

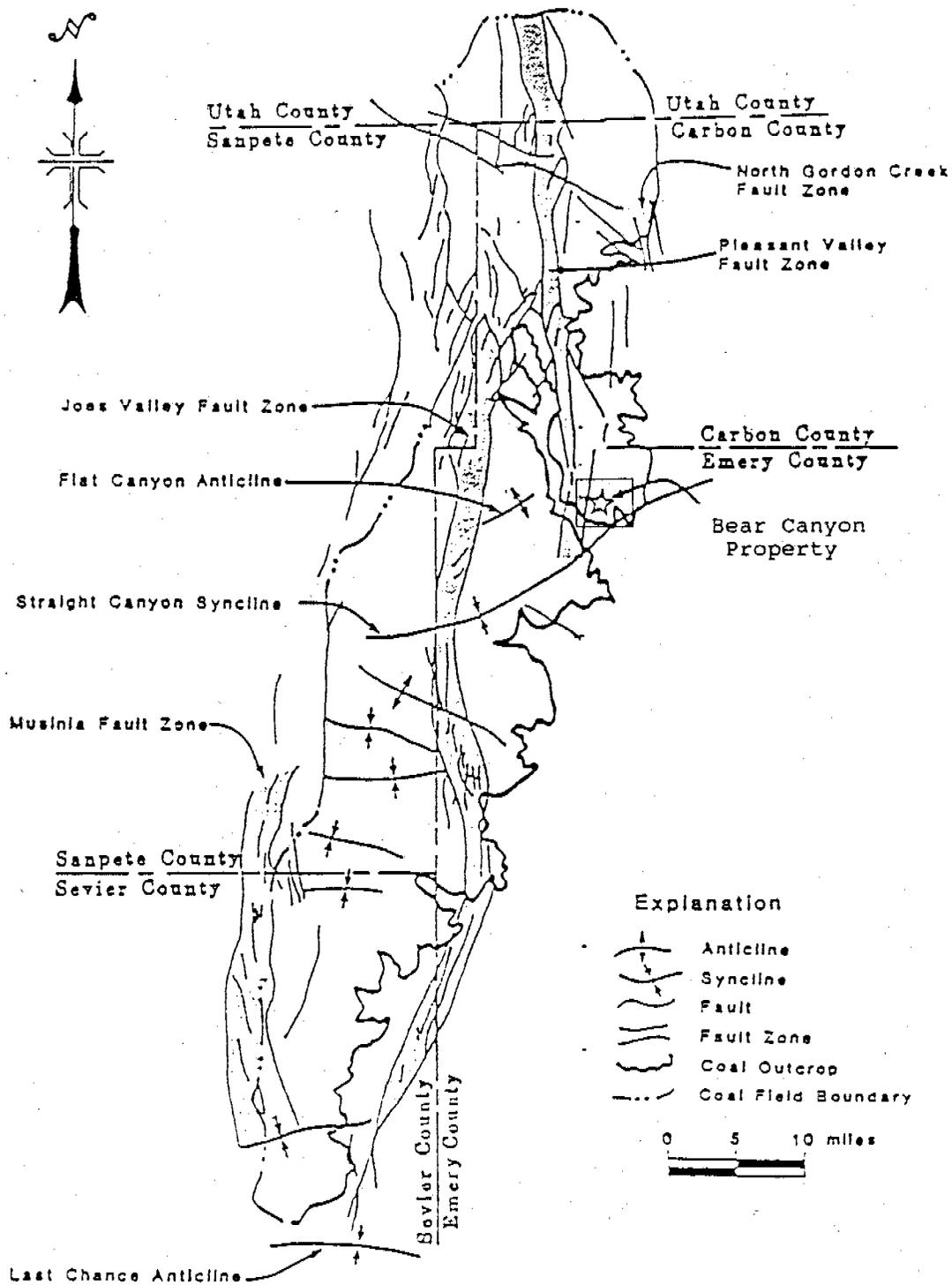
US Department of Interior
Bureau of Land Management
Utah State Office
324 South State Street
Suite 301
Salt Lake City, Utah 84111-2303

The applicant has permission from the owner of the federal leases to enter the property as required to perform the work necessary to this exploration plan (see Attachment 4).

FIGURES

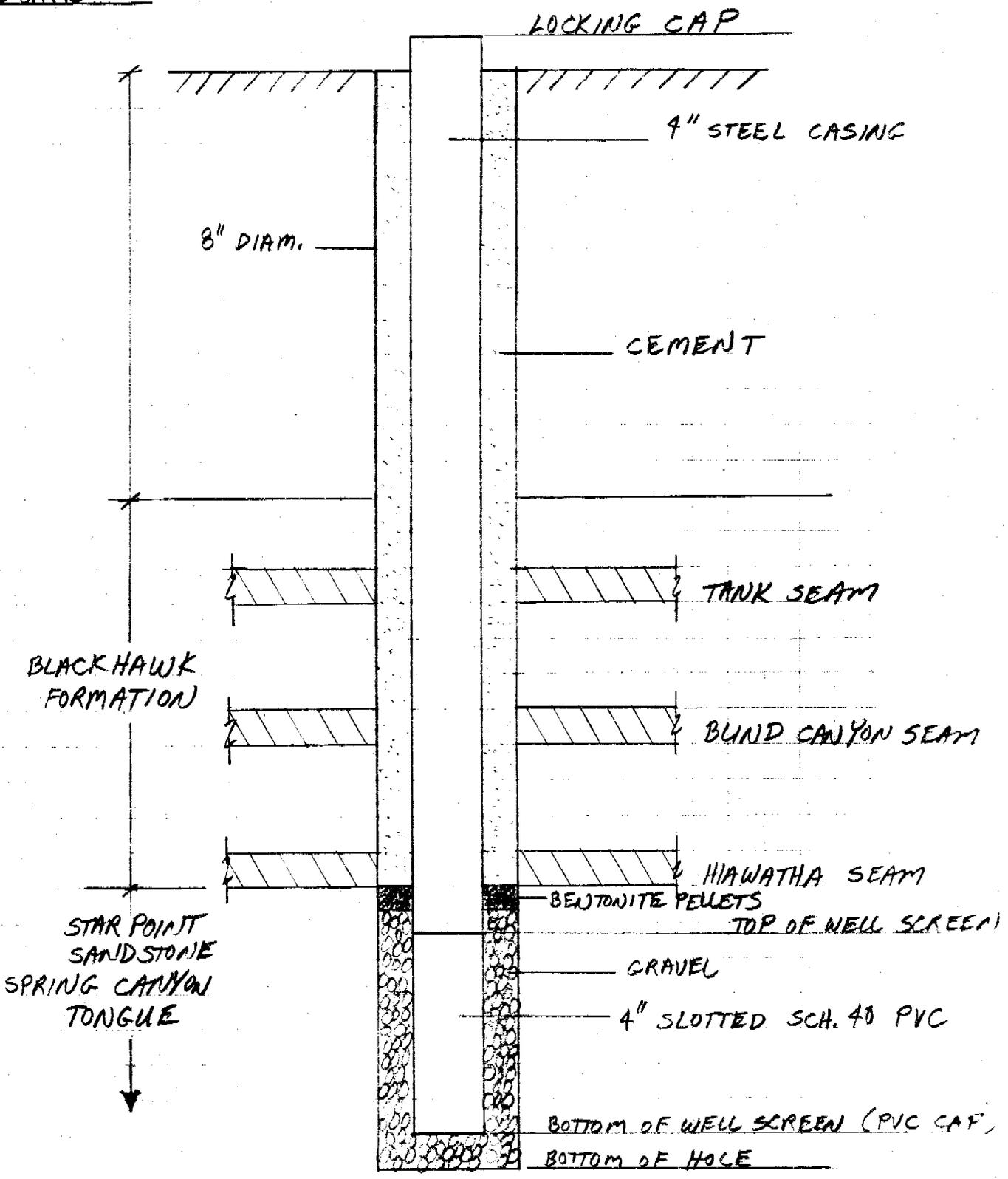
Figure 2

Principle Structural Features in the Wasatch Plateau



Reference: Davis and Doelling, 1977

FIGURE 3



WATER MONITORING WELL

TABLES

TABLE 1 Generalized Section of Rock Formations, Wasatch Plateau Coal Field¹

System	Series	Stratigraphic Unit	Thickness (feet)	Description	
TERTIARY	Eocene	Green River Formation	-	Chiefly greenish lacustrine shale and siltstone.	
	Paleocene	Wasatch Group	Colton Formation	300-1,500	Varicolored shale with sandstone and limestone lenses, thickest to the north.
		Flagstaff Limestone	200-1,500	Dark yellow-gray to cream limestone, evenly bedded with minor amounts of sandstone, shale and volcanic ash, ledge former.	
CRETACEOUS	?	Wasatch Group	North Horn Formation (Lower Wasatch)	500-2,500	Variegated shales with subordinate sandstone, conglomerate and freshwater limestone, thickens to north, slope former.
	Maestrichtian		Price River Formation	600-1,000	Gray to white gritty sandstone interbedded with subordinate shale and conglomerate, ledge and slope former.
	Campanian	Mesaverde Group	Castlegate Sandstone	150- 500	White to gray, coarse-grained often conglomeratic sandstone, cliff former, weathers to shades of brown
			Blackhawk Formation <i>MAJOR COAL SEAMS</i>	700-1,000	Yellow to gray, fine- to medium-grained sandstone, interbedded with subordinate gray and carbonaceous shale, several thick <i>coal</i> seams.
			Star Point Sandstone	90-1,000	Yellow-gray massive cliff-forming sandstone, often in several tongues separated by Masuk Shale, thickens westward.
	Santonian	Mancos Shale	Masuk Shale	300-1,300	Yellow to blue-gray sandy shale, slope former, thick in north and central plateau area, thins southward
			Emery Sandstone <i>COAL (?)</i>	50- 800	Yellow-gray friable sandstone tongue or tongues, cliff former, may contain <i>coal</i> (?) in south part of plateau if mapping is correct, thickens to west and south. <i>Coal</i> may be present in subsurface to west.
	Coniacian	Mancos Shale	Blue Gate Member	1,500-2,400	Pale blue-gray, nodular and irregularly bedded argillaceous mudstone and siltstone with several argillaceous beds, weathers into low rolling hills and badlands, thickens northerly.
	Turonian		Ferron Sandstone Member <i>MAJOR COAL SEAMS</i>	50- 950	Alternating yellow-gray sandstone, sandy shale and gray shale with important <i>coal</i> beds of Emery coal field, resistant cliff former, thickens to the south.
	Cenomanian	Mancos Shale	Tununk Shale Member	400- 650	Blue-gray to black sandy marine slope forming mudstone.
	Albian		Dakota Sandstone	0- 60	Variable assemblages of yellow-gray sandstone, conglomerate shale and <i>coal</i> . Beds lenticular and discontinuous.
				<i>MINOR COAL</i>	

¹(Doelling, 1972, pg. 68)

SR / PR REC JAN 13 1994

TABLE 2

<u>Drill Hole</u>	<u>Location</u>	<u>Elevation</u>	<u>Estimated Depth</u>
SDH-1	1600'S 100'W OF NE CORNER SEC 14 T16S R7E	9320'	1970'
SDH-1 ALT.	2300'S 1100'W OF NE CORNER SEC 14 T16S R7E	9388'	2040'
SDH-2	600'S 1300'W OF NE CORNER SEC 11 T16S R7E	9490'	2140'
SDH-3	2100'S 1100'W OF NE CORNER SEC 10 T16S R7E	9080'	1730'
SDH-4	2500'N 900'E OF SW CORNER SEC 30 T16S R8E	8760'	1410'

ATTACHMENTS

Table 7M-2. 1991 Survey

<u>ID#</u>	<u>Description</u>	<u>Flow</u>	<u>pH</u>	<u>Cond.</u>	<u>Date</u>
#1	Fish Creek	120	7.9	800	7/30/91
#2 (WHR-1)	L.F. Fish Creek	2.5	7.6	500	7/31/91
#3	Rt. F. Fish Creek	80	7.6	500	7/31/91
#4 (WHR-3)	Head of L.F. Fish Creek	20.	8.3	1050	7/30/91
#5 (WHR-4)	West Side Fish Creek L.F.	31	8.2	600	7/30/91
#6 (WHR-7)	West Side Fish Creek L.F.	40	8.2	450	7/30/91
#7 (WHR-8)	East Side Wild Horse Ridge	5	8.1	500	7/31/91
#8 (WHR-2)	East Side Fish Creek L.F.	10	8	500	7/31/91
#9 (WHR-6)	R.F., R.F. Bear Canyon	4.7	8.1	510	8/08/91
#10 (WHR-5)	L.F., R.F. Bear Canyon	<.2	8	1450	7/31/91
#11 (FBC-1)	McCadden Hollow Creek	1.5	7.9	800	7/31/91
#12 (FBC-2)	McCadden Hollow Below Fence	12	8.05	550	8/01/91
#13 (FBC-3)	South Side McCadden Hollow	1.5	8	450	8/01/91
#14 (FBC-4)	McCadden Hollow Above Fence	8.7	7.5	500	8/01/91
#15 (FBC-5)	L.F. McCadden Hollow Trough	8.5	8	550	8/02/91
#16 (FBC-6, 6A)	L.F. McCadden Hollow	9.8	8.4	500	8/02/91
#17 (FBC-7)	Trail Canyon Trough	2.1	8.2	700	7/30/91
#18 (FBC-8)	West Side Trail Canyon	5	7.6	450	8/07/91
#19 (FBC-9)	East Side Trail Canyon	22.4	7.6	480	8/07/91
#20	Tie Fork Creek	120	8	500	8/08/91
#21 (FBC-11)	East Side Huntington Canyon	15	8.4	300	8/08/91
#22 (FBC-10)	Trail Creek	9	7.8	450	8/07/91
#23	Huntington Creek Seepage	2.4	7.8	2000	8/08/91
(WHR-9)	Wild Horse Trough	4	8.1	450	8/08/91
#25 (FBC-12)	Head Bear Creek	7.8	8.2	2000	8/08/91

Figure 7M-2. 1991 Survey

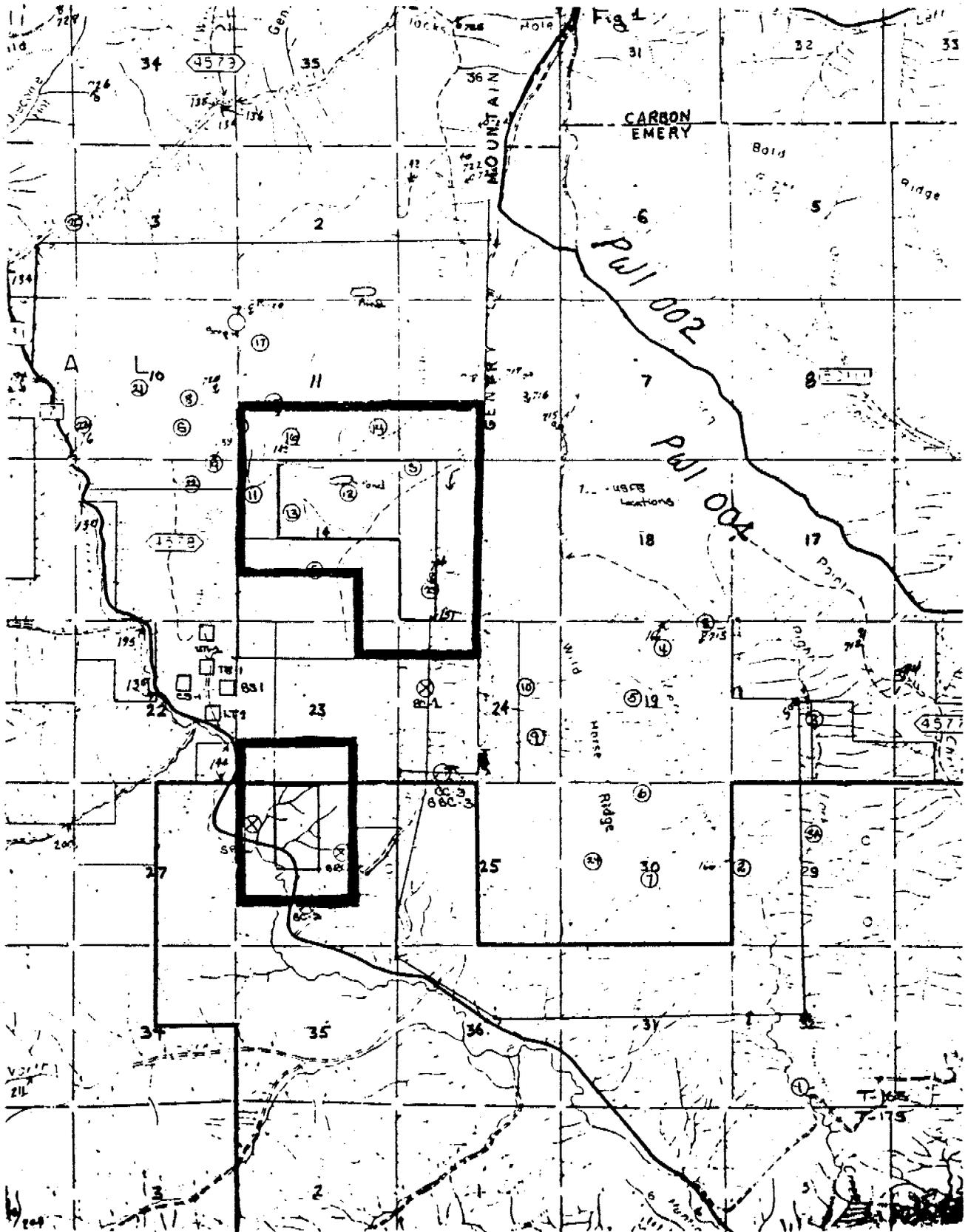


TABLE 1

THREATENED, ENDANGERED AND SENSITIVE SPECIES
OCCURRING IN THE PRICE AND FERRON DISTRICTS
OF THE MANTI-LA SAL NATIONAL FOREST¹

	COMMON NAME	SPECIES	STATUS ²		LOCATION AND HABITAT
			USFS ³	USFS ⁴	
MAMMALS	Spotted bat	<i>Euderma maculatum</i>	C2	S	Ponderosa pine, desert scrub, pinyon-juniper, open pasture state-wide. Roost in crevices on cliff faces.
	Western big-eared bat	<i>Plecotus townsendii</i>	None	S	Pinyon-juniper forests, shrub/steeps grasslands, deciduous and mixed-conifer forests from sealevel to 10,000 ft. elevation. Winter roosting in caves, mine shafts, rocky outcrops and buildings.
BIRDS	Bald Eagle	<i>Haliaeetus leucocephalus</i>	E	E	Winter visitor, open water and upland areas.
	Flammulated owl	<i>Otus flammeolus</i>	None	S	Mature ponderosa pine-Douglas fir forests with open canopies and large diameter dead trees.
	Three-toed woodpecker	<i>Picoides tridactylus</i>	None	S	Coniferous and mixed forests to 9,000 ft. elevation.
REPTILES/ AMPHIBIANS	Spotted frog	<i>Rana pretiosa</i>	None	S	Marshy edges of permanent ponds and lakes, algae-grown overflow pools of streams, near springs with emergent vegetation.
PLANTS	Heliotrope milkvetch	<i>Astragalus montii</i>	I	I	Flagstaff limestone formation in the subalpine mixed grass-forb community above 10,500 feet elevation. Presently known to occur only on 3 sites on South end of the Wasatch Plateau in Sevier and Sanpete counties.
	Canyonlands sedge	<i>Carex curatorum</i>	C3	S	Scad Valley and South side of Ferron Mtn. in Current Creek area.
	Creutzfeldt flower	<i>Cryptantha creutzfeldtii</i>	C2	S	Open, dry Mancos shale; open pinyon-juniper and salt desert shrub plant communities between 5,500 to 6,500 feet elevation.
	Carrington daisy	<i>Erigeron carringtonae</i>	C2	S	Meadows and escarpment margins on Flagstaff limestone between 10,000 and 11,000 feet elevation.

Sedge fescue	Festuca desyclada	3c	S	Open slopes and ridges in sagebrush, mountain brush, and juniper communities on Green River Shale formation and limestone gravels between 6,990 and 10,000 feet elevation.
Canyon Sweetvetch	Hedysarum occidentale var. canone	C2	S	Alluvium or outwash deposited material; pinyon-juniper, sagebrush communities between 5,000 and 8,000 feet elevation.
Low hymenoxys	Hymenoxys depressa	C2	S	Ephedra, sagebrush, shadescale and pinyon-juniper communities on very rocky, shallow fine silty clay to clay loam soils between 4,400 and 8,000 feet elevation.
Selenium hymenoxys	Hymenoxys helenioides	Jb	S	Mountain brush, sagebrush, aspen, and dry meadow communities on clay loam soils between 8,000 to 10,700 feet elevation.
Maguire campion	Silene petersonii	C2	S	Ponderosa pine, Rocky Mountain juniper, bristlecone pine, spruce-fir and aspen-sagebrush communities on open calcareous and igneous gravels between 6,955 to 11,200 feet elevation.
Ute ladies'-tresses	Spiranthes diluvialis	C1	T	Low, wet or mesic riparian meadows or in understory meadows of riparian woodlands in the Colorado River drainage of Eastern Utah. "No known population or habitat has been found on the forest to date, 3/92". (Mr. Bob Thompson, USFS Price)

1 Spahr, et al. 1991
Atwood, et al. 1991

2 S=Sensitive, T=Threatened, E=Endangered, see page 21

3 Endangered Species Act Listing

4 Forest Service Region 4 Status

CEDAR CREEK WATER USE

THIS AGREEMENT, made and entered into as of the 23rd day of November 1979, by UNITED STATES FUEL COMPANY, herein called "U.S. Fuel" and CO-OP MINING COMPANY, herein called "Co-op".

WITNESSETH:

Co-op desires to use water from Cedar Creek, which is owned and controlled by U.S. Fuel, for the purpose of drilling exploratory holes and monitoring wells on the Century Mountain.

NOW WHEREFORE, in consideration of Co-op paying to U.S. Fuel (\$1.00) and sharing all drill information with U.S. Fuel acquired and compiled as a result of this exploration, U.S. Fuel, hereby grants Co-op permission to use such water subject to the following conditions as set forth below.

CO-OP, in consideration of said grant, agrees:

1. That the water use will be for the period beginning June 1, 1979 and ending October 31, 1980.
2. That only water necessary for the drilling will be removed from Cedar Creek.
3. That it will at all times protect, indemnify, save harmless and defend U.S. Fuel from any and all claims, actions, demands, judgments, costs, expenses and damages of every kind and nature of any person whatsoever based upon or resulting from injury to or death of any person, and damage to any property in any manner arising out of or caused by anything done or omitted by Co-op in the exercise of the rights and privileges granted.
4. That it will share any information generated as result of such drilling as stated above, including interpretive data, for which Co-op shall not be responsible for the use thereof by U.S. Fuel.

The parties hereto shall cause this Agreement to be executed, by the below authorized signatures.

UNITED STATES FUEL COMPANY

By: Michael W. Brown
Its:

CO-OP MINING COMPANY

By: Bill W. Stoddard
Its:

CEDAR CREEK WATER USAGE

THIS AGREEMENT, made and entered into as of the _____ day of _____, 1993, by UNITED STATES FUEL COMPANY, herein called "U.S. Fuel" and CO-OP MINING COMPANY, herein called "Co-op".

WITNESSETH:

Co-op desires to use water from Cedar Creek, which is owned and controlled by U.S. Fuel, for the purpose of drilling exploratory holes and monitoring wells on the Gentry Mountain.

NOW THEREFORE, in consideration of Co-op paying to U.S. Fuel (\$1.00) and sharing all drill information with U.S. Fuel acquired and compiled as a result of this exploration, U.S. Fuel, hereby grants Co-op permission to use such water subject to the following conditions as set forth below.

CO-OP, in consideration of said grant, agrees:

1. That the water use will be for the period beginning June 1, 1994 and ending October 31, 1994.
2. That only water necessary for the drilling will be removed from Cedar Creek.
3. That it will at all times protect, indemnify, save harmless and defend U.S. Fuel from any and all claims, actions, demands, judgements, costs, expenses and damages of every kind and nature of any person whomsoever based upon or resulting from injury to or death of any person, and damage to any property in any manner arising out of or caused by anything done or omitted by Co-op in the exercise of the rights and privileges granted.
4. That it will share any information generated as result of such drilling as stated above, including interpretive data, for which Co-op shall not be responsible for the use thereof by U.S. Fuel.

The parties hereto shall cause this Agreement to be executed, by the below authorized signatures.

UNITED STATES FUEL COMPANY

CO-OP MINING COMPANY

By: _____
Its:

By: _____
Its:

C.O.P. Development Co.
3212 South State Street
Salt Lake City, Utah 84115

January 3, 1994

Wendell Owen
Co-op Mining Co.
P.O. Box 1245
Huntington, Utah 84528

Dear Mr. Owen:

C.O.P. Coal Development Co. hereby grants Co-op Mining Co. permission to construct and maintain exploration drill holes/monitor wells as required on Federal Leases:

U-38727, U-46484, U-020668, U-024316.

Very truly yours,



Joseph O. Kingston, President
C.O.P. Coal Development Co.

SR/PR REC'D JAN 11 1994

EXPLORATION PLAN
GENTRY MOUNTAIN
EMERY COUNTY, UTAH

CEP-94A

CO-OP MINING CO.
P.O. BOX 1245
HUNTINGTON, UTAH 84528
(801) 381-2450

INTRODUCTION

The following Exploration Plan has been prepared in accordance with the Code of Federal Regulations, Title 43, Chapter II, Subparts 3482 (Exploration Plans) and 3484 (Performance Standards) as well as the Code of Federal Regulations, Title 30, Chapter VII, Part 815 (Permanent Program Performance Standards, Coal Exploration) and the Utah Mining Code Rules for Coal Exploration UMC R645-201-200 (Minor Coal Exploration, Less than 250 Tons).

The format of this Exploration Plan follows that of 43 CFR 3482.1(a)(3).

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2	Hole Location and Depth

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2	Threatened or Endangered Species
3	Letter From United States Fuel Co. For Water Usage
4	Letter From C.O.P. Coal Development Co.

3482.1(a)(3)(iii) NARRATIVE DESCRIPTION OF EXPLORATION AREA

The Bear Canyon mining facility is located in the Wasatch Plateau of Emery County, Utah. It is situated approx. 11 miles west of Huntington, Utah on State Highway 31.

The proposed exploration area lies within T16S R7E, sections 10, 11, and 14 (McCadden Hollow) north of the existing permit area, and T16S R8E, section 30 (Wild Horse Ridge), east of the existing permit area. The proposed exploration drill sites are shown in figure 1.

Federal Lease Serial Numbers

The proposed exploration is to be conducted on Federal Lease areas U-024316, U-46484, U-020668, and U-38727. The Leases include the following area:

U-024316:

T16S, R7E SLBM

Sec 13: $W\frac{1}{2}W\frac{1}{2}$

Sec 14: $NE\frac{1}{4}, E\frac{1}{2}NW\frac{1}{4}$

U-46484:

T16S, R7E SLBM

Sec 10: $N\frac{1}{2}, N\frac{1}{2}S\frac{1}{2}, S\frac{1}{2}SE\frac{1}{4}, SE\frac{1}{4}SW\frac{1}{4}$

Sec 11: ALL

Sec.12: $W\frac{1}{2}W\frac{1}{2}$

U-020668:

T16S, R7E SLBM

Sec 25: $SE\frac{1}{4}NE\frac{1}{4}, NE\frac{1}{4}SE\frac{1}{4}$

T16S, R8E SLBM

Sec 30: $W\frac{1}{2}, W\frac{1}{2}NE\frac{1}{4}, NW\frac{1}{4}SE\frac{1}{4}$

Sec 31: $NE\frac{1}{4}NW\frac{1}{4}, NW\frac{1}{4}NE\frac{1}{4}$

U-38727:

T16S, R7E SLBM

Sec 24: $SE\frac{1}{4}NE\frac{1}{4}, E\frac{1}{2}SE\frac{1}{4}$

Sec 25: $N\frac{1}{2}NE\frac{1}{4}, SW\frac{1}{4}NE\frac{1}{4},$

$NW\frac{1}{4}SE\frac{1}{4}, S\frac{1}{2}SE\frac{1}{4}$

$SW\frac{1}{4}NW\frac{1}{4}, NW\frac{1}{4}SW\frac{1}{4}$

T16S, R8E SLBM

Sec 19: $S\frac{1}{2}NW\frac{1}{4}, SW\frac{1}{4}, SW\frac{1}{4}SE\frac{1}{4}$

SURFACE TOPOGRAPHY

The topography is generally rugged, with elevations varying from 7,000 to about 10,000 ft above sea level. Slopes vary from more than 210 pct (65 deg.) to less than 4 pct (2 deg.) on Gentry Ridge.

Three of the drill holes will be north (near McCadden Hollow) and one will be south east (Wild Horse Ridge) of the existing permit area.

Geology

Table 1 gives the generalized Stratigraphic sequence and unit description of the Wasatch Plateau.

The proposed exploration areas lie near the eastern face of the Wasatch Plateau Coal Field within the Hiawatha U.S.G.S. 7½ minute quadrangle map (see figure 1).

The exposed geologic column, in ascending order, consists of the Mancos Shale, the Star Point Sandstone, the coal-bearing Blackhawk Formation, the Castlegate Sandstone, the Price River Formation, and the North Horn Formation which caps Gentry Mountain (Doelling, 1972). All of these Geologic units are Cretaceous in age with the exception of the North Horn Formation, which is Tertiary. The Star Point Sandstone through the Price River Formation composes the Mesaverde Group in this locality. The minable coal seams are located in the upper Cretaceous Blackhawk Formation.

The Blackhawk Formation is composed of alternating sandstones, shales, mudstones and coal representing marine, transitional and terrestrial varieties of sedimentation. Depositional environments of the Blackhawk Formation include littoral, lagoonal, estuarine and swamp type environments. The Blackhawk outcrops to form a step and slope topography slightly less resistant than the Star Point below and the Castlegate above. Multiple coal seams are found within the lower 350 ft of the Blackhawk.

Structurally, strata in the Eastern Wasatch Plateau generally dip southerly (sometimes slightly southeast of southwest) at low angles of 1 to 3 deg. Locally, near faults, the dip increases to about 20 deg. Three major north-south trending fault zones have been defined in the Wasatch Plateau Coal Field (Figure 2). Each zone is the product of a high angle block fault with extensive minor fracturing within the graben. The Joes Valley Fault is the largest zone. As shown in Figure 2, the zone lies several miles west of the existing permit area. The Pleasant Valley Fault Zone is vertical with between a few ft to 100 ft displacement (Doelling, 1972), although greater displacement occurs locally. The North Gordon Fault Zone, which occurs near the eastern boundary of the Wasatch Plateau field, is the least extensive of the zones. The trends of the faults have a complex pattern. Displacement is generally less than 800 ft.

Water Resources

The San Rafael River Basin of the Upper Colorado River Region is generally classified as an arid basin. The upper drainages along the Wasatch Plateau receive enough snow precipitation

to be classified as semi-arid to sub-humid due to the amount of precipitation increase with altitude.

Various springs, seeps, and streams occur in the adjacent and surrounding area, see attachments 1A and 1B (from appendix 7M of the Bear Canyon Mine, Mining and Reclamation Plan, CO-OP Mining Co.). The major streams in the area are Bear Creek (a perennial stream) and Trail Creek (an intermittent stream). These discharge into Huntington Creek, a perennial stream. The primary source of water for the streams in the area is snow melt (Danielson, 1981). Hence, peak flows generally occur in the late spring and early summer.

The Star Point Sandstone has been identified as a potential regional aquifer. Other ground water occurring above the Star Point aquifer is contained in perched, discontinuous aquifers in the upper Blackhawk Formation, the Castlegate Sandstone, the Price River Formation, and the North Horn Formation.

Vegetation & Soil

The vegetation types in the area consist of Pinyon-Juniper, Conifer, Grass, and Sagebrush. No threatened or endangered plant species have been identified in the exploration area.

Soils in the exploration areas come from the North Horn and Price River formations and consist of sandstone, shale, and limestone conglomerates. By limiting the size of the drill site, retaining any existing topsoil for reclamation, and reseeding with an appropriate mix, revegetation can be achieved.

Wildlife

The exploration area is classified as high priority elk and mule deer summer range. Other wildlife in the area include cougar, bobcat, black bear, rabbit, skunks and other fur bearers, rodents and other small mammals, amphibians and reptiles. There are golden eagle nests on adjacent areas but non within one half mile of the proposed drill sites.

Threatened Or Endangered Species

No threatened or endangered plant or animal species have been found in the proposed exploration areas (see attachment 2).

The Chief of the Price Coal Office will be notified 48 hours prior to any site construction or drilling equipment being moved on site. A copy of the exploration permit will be available for inspection on-site. Any proposed changes to the approved exploration plan will be reviewed with the Chief of the Price Coal Office and/or the appropriate agencies before they are implemented.

Drill Site Construction

Three of the drill sites and one alternate site are located immediately off existing USFS roads. The fourth site will be accessed by helicopter. Therefore no new road construction will be required. The drill sites will be approximately one half acre, or the minimum size necessary for efficient drilling operations. Any topsoil that is present will be removed from the drill site and stockpiled. A mud pit may be dug at the site to contain drill cuttings. If required, water for drilling operations will be obtained from Cedar Creek. Co-op Mining Co. has permission from United States Fuel Co. to use water from Cedar Creek for this purpose (see Attachment 3). The approximate amount of water that would be required is 168,000 gallons or 0.52 acre-feet.

Site preparation will be minimal, with one bulldozer and one backhoe. Brush or tree clearing will not be required at the sites (with the exception of sagebrush). If topsoil occurs it will be stockpiled before pad construction is begun. The drill site and adjacent area will be sized to allow sufficient space for all necessary drilling equipment. Material will be made available for protection of topsoil as needed.

Methods and Equipment for Drilling

Rotary Drilling and/or coring will be done by a rubber-tired truck-mounted drilling rig. Support equipment will consist of a water truck, a rig-up or support truck, a fuel truck, a pipe truck or trailer, a truck-mounted air compressor or booster, and 4x4 pickups for the crews and company representatives. A truck mounted geophysical logging unit will be used on the hole location after drilling but prior to monitor well completion.

For the drill site to be accessed by helicopter the required equipment will be flown in and assembled on site.

The hole will be drilled with air if possible. If water is encountered, and cutting return is lost, water may also be used for drilling. It is not anticipated that other drilling fluids will be required, however, only a non-petroleum based

fluid would be used in any event. Any recirculation will be within a closed system, using a tank or pit for total containment. Care will be taken to ensure that the prevailing hydrologic balance will not be adversely affected by the drilling methods used. Drilling operations will be conducted in such a manner to protect the water resources in the area.

Plugging of Drill Holes

The drill holes will not be plugged but will be modified into water monitoring wells.

Estimated Size and Depth of Holes

The holes will be rotary drilled (approximately 8 inch diameter) or cored (approximately 3 inch diameter). The estimated depth of each hole is shown in table 2. The bottom of the holes will be approximately 50 ft below the Hiawatha seam and into the Spring Canyon Tongue of the Starpoint Sandstone. Casing will be installed as required to keep the hole open and to prevent drilling and circulation problems. Cuttings will be sampled and logged. The three coal seams and their immediate roof and floor strata (20 to 40 ft above and below) may be cored after which reaming and rotary drilling will resume to the bottom of the hole. After the total depth is reached, the holes will be logged with a standard suite of geophysical coal logs. The holes will then be completed with installation of materials to construct a ground water monitoring well.

Modification of Drill Hole to Monitoring Well

Figure 3 shows the proposed well design. A PVC well screen will be installed at the bottom of the hole below the Hiawatha seam and will be surrounded by gravel. Bentonite pellets will be used above this to seal off the Star Point aquifer. Most of the hole will be filled with a standard gravel pack consisting of drill cuttings or a bentonite grout. Any overlying aquifers will be sealed off above and below with bentonite pellets to keep the Star Point Aquifer isolated. The top of the well will be fitted with a steel casing and locking cap.

Reclamation Plan

Reclamation activities will immediately follow the completion of the well.

1. Upon completion of drilling activities at each site, all debris, trash, and drilling related equipment will be removed from the site.
2. If needed, the mud pit will be reclaimed when the mud pit is sufficiently dry, it will be filled with stored soil material and compacted to minimize any settling.
3. A backhoe and a bulldozer will redistribute material on and around the drill pad to achieve as closely as is practicable the original contour of the site.
4. Stored topsoil will be distributed as evenly as possible over the disturbed pad area. The topsoil will be roughened to aid in the retention of seed and moisture.
5. The drill pad area will be re-seeded using an appropriate seed mix (same as used in existing permit area for similar reclaimed areas) at the rate specified.

3482.1(a) (3) v ESTIMATED TIMETABLE FOR CONSTRUCTION, DRILLING, AND RECLAMATION

The anticipated start of exploration activities is on or around July 5, 1994. It is estimated that it will take from four to six weeks for construction, drilling, and reclamation activities to be completed.

3482.1(a) (3) vi AMOUNT OF COAL TO BE REMOVED

The coal seams will either be cored (approximately 3 inch diameter) or rotary drilled (approximately 8 inch diameter). Assuming a coal thickness of 25 feet (total) for all coal seams, the amount of coal removed will be less than 500 pounds. Any coal that is cored will be tested for various parameters. Any rotary drilled coal would be lost.

3482.1(a) (3) vii MEASURES TO BE USED TO COMPLY WITH PERFORMANCE STANDARDS FOR EXPLORATION (43 CFR II 3484.1(a)), 30 CFR 815.15, AND UTAH PROGRAM RULES

3484.1(a) (1)

This exploration plan addresses all applicable parts of Performance Standards for Exploration as well as 30 CFR 815.15 and the Utah Mining Code Rules for Coal Exploration UMC R645-201-200.

3484.1(a) (2)

Casing will be set as needed to maintain hole integrity and to prevent circulation problems. Blowout prevention will not be required since the location and depth of drill holes are not in the area of known oil, gas, or geothermal resources.

3484.1(a) (3)

The drill holes will be used as water monitoring wells and therefor will not be plugged.

3484.1(a) (4)

Co-op Mining Co. will retain for 1 year all drill and geophysical logs and shall make them available to an authorized officer, if requested. Any unanalyzed drill cores will be retained by Co-op Mining Co. if requested, and made available to an authorized officer.

3484.1(a) (5)

The exploration drill holes will be modified and used as water monitoring wells for the purpose of monitoring the quantity and quality of ground water.

3482.1(a) (3) viii MAP OF EXPLORATION AREA

Figure 1 shows a map of the proposed exploration area with the existing access roads to be used. This is at a scale of 1:24,000 (1" = 2,000') and is taken from the USGS Hiawatha Quadrangle (7.5 minute)

3482.1(a) (3) ix SURFACE AND SUBSURFACE OWNERS OF RECORD

Surface Owner

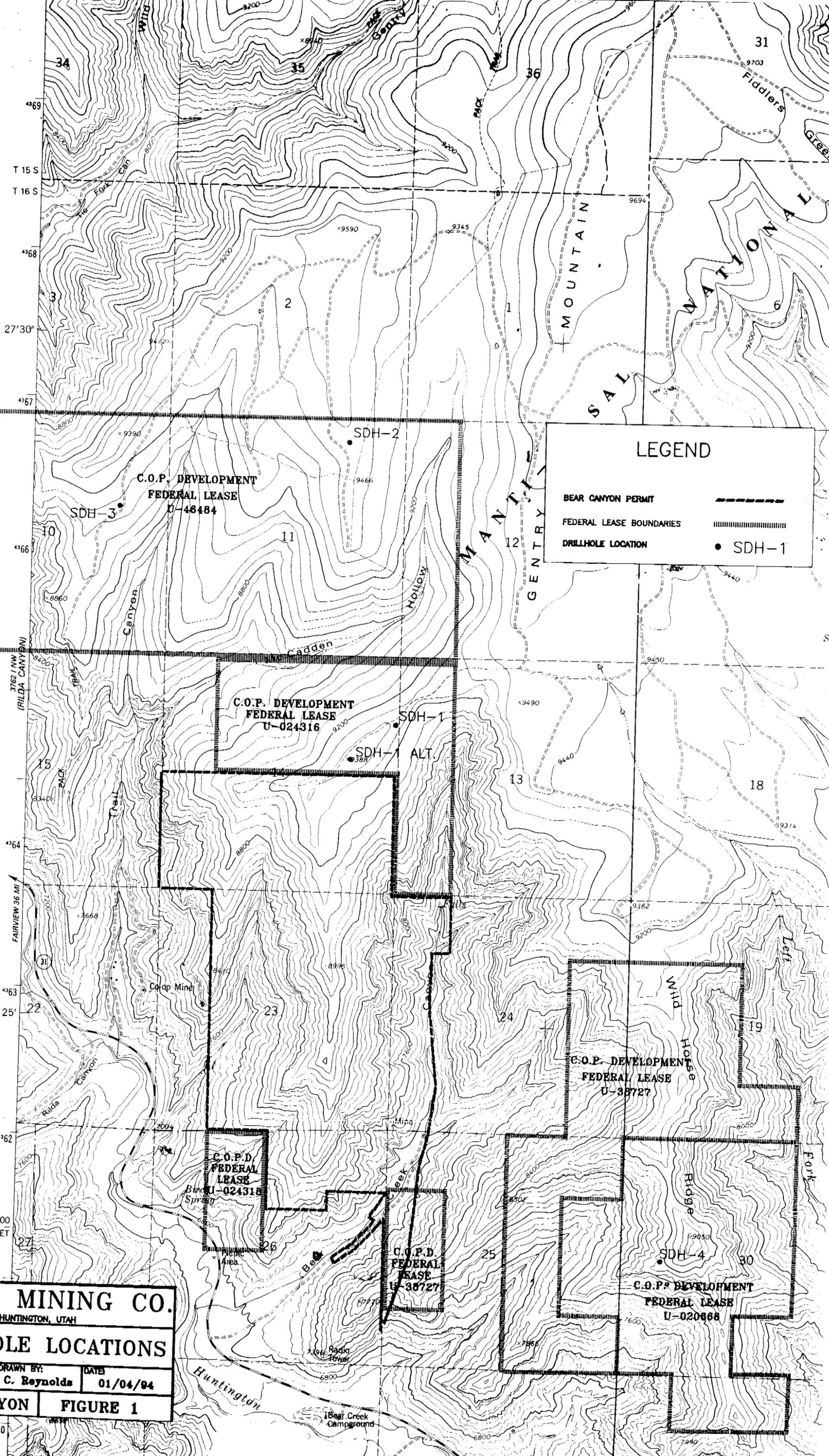
US Department of Agriculture
US Forest Service
Manti-LaSal National Forest
Price District Office
599 West Price River Drive
Price, Utah 84501

Subsurface Owner

US Department of Interior
Bureau of Land Management
Utah State Office
324 South State Street
Suite 301
Salt Lake City, Utah 84111-2303

The applicant has permission from the owner of the federal leases to enter the property as required to perform the work necessary to this exploration plan (see Attachment 4).

FIGURES



LEGEND

BEAR CANYON PERMIT	-----
FEDERAL LEASE BOUNDARIES	
DRILLHOLE LOCATION	● SDH-1

CO-OP MINING CO.
 HUNTINGTON, UTAH

DRILLHOLE LOCATIONS

SCALE: 1" = 2000' DRAWN BY: C. Reynolds DATE: 01/04/94

BEAR CANYON FIGURE 1

390 000
FEET

T 15 S
T 16 S

27'30"

4366

4364

4363

4362

4360

3762.1 NW
(RILDA CANYON)

FAIRVIEW 36 MI

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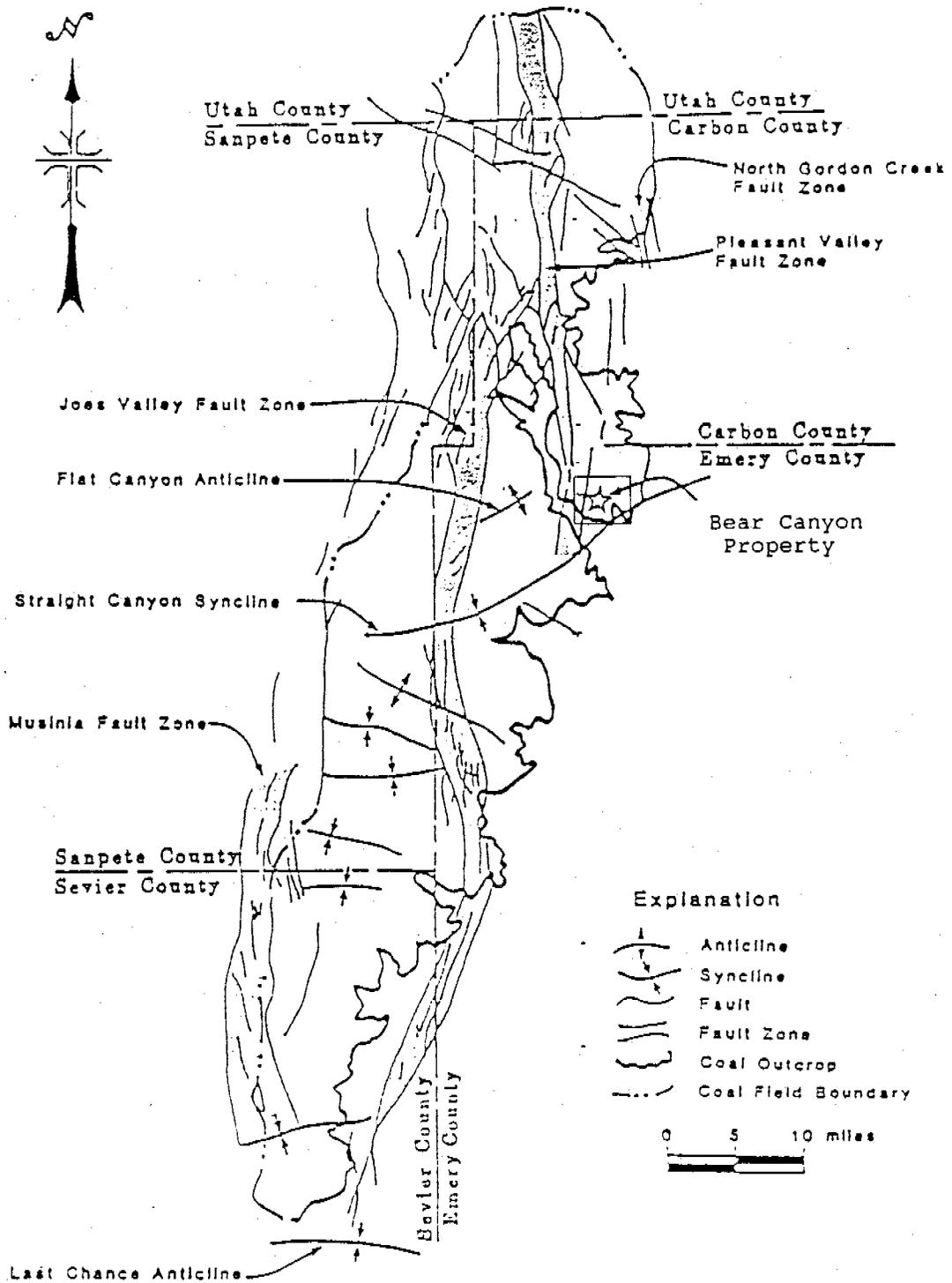
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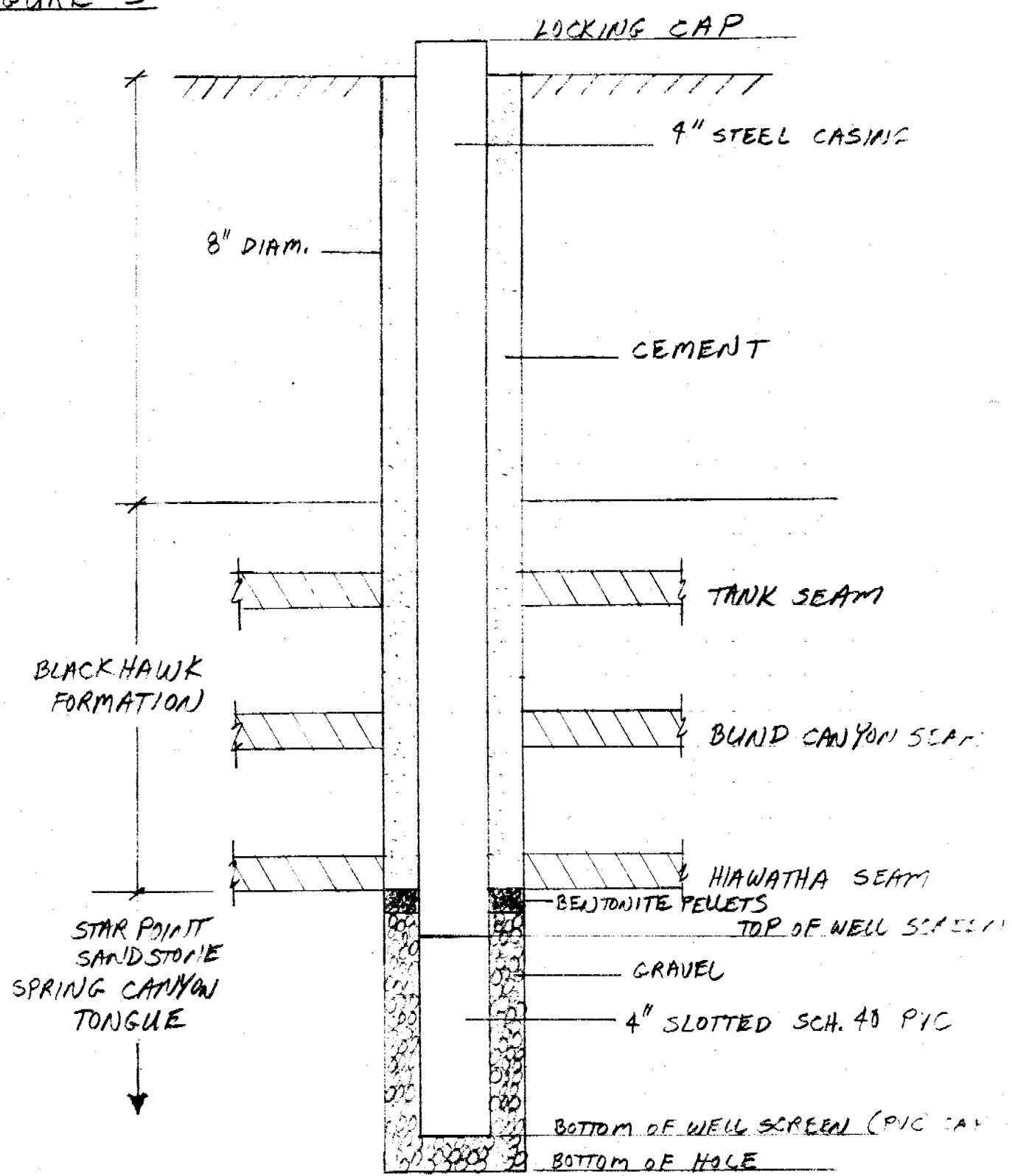
Figure 2

Principle Structural Features in the Wasatch Plateau



Reference: Davis and Doelling, 1977

FIGURE 3



WATER MONITORING WELL

TABLES

TABLE 1 Generalized Section of Rock Formations, Wasatch Plateau Coal Field¹

System	Series	Stratigraphic Unit		Thickness (feet)	Description
TERTIARY	Eocene	Green River Formation		-	Chiefly greenish lacustrine shale and siltstone.
		Wasatch Group	Colton Formation	300-1,500	Varicolored shale with sandstone and limestone lenses, thickest to the north.
	Flagstaff Limestone		200-1,500	Dark yellow-gray to cream limestone, evenly bedded with minor amounts of sandstone, shale and volcanic ash, ledge former.	
	North Horn Formation (Lower Wasatch)		500-2,500	Variegated shales with subordinate sandstone, conglomerate and freshwater limestone, thickens to north, slope former.	
CRETACEOUS	?				
	Maestrichtian	Mesaverde Group	Price River Formation	600-1,000	Gray to white gritty sandstone interbedded with subordinate shale and conglomerate, ledge and slope former.
			Castlegate Sandstone	150- 500	White to gray, coarse-grained often conglomeratic sandstone, cliff former, weathers to shades of brown
			Blackhawk Formation <i>MAJOR COAL SEAMS</i>	700-1,000	Yellow to gray, fine- to medium-grained sandstone, interbedded with subordinate gray and carbonaceous shale, several thick <i>coal</i> seams.
	Campanian		Star Point Sandstone	90-1,000	Yellow-gray massive cliff-forming sandstone, often in several tongues separated by Masuk Shale, thickens westward.
	Santonian		Masuk Shale	300-1,300	Yellow to blue-gray sandy shale, slope former, thick in north and central plateau area, thins southward
			Emercy Sandstone <i>COAL (?)</i>	50- 800	Yellow-gray friable sandstone tongue or tongues cliff former, may contain <i>coal</i> (?) in south part of plateau if mapping is correct, thickens to west and south. <i>Coal</i> may be present in subsurface to west.
	Coniacian	Mancos Shale	Blue Gate Member	1,500-2,400	Pale blue gray, nodular and irregularly bedded marine mudstone and siltstone with several arenaceous beds, weathers into low rolling hills and badlands, thickens northerly.
			Ferron Sandstone Member <i>MAJOR COAL SEAMS</i>	50- 950	Alternating yellow-gray sandstone, sandy shale and gray shale with important <i>coal</i> beds of Emercy coal field, resistant cliff former, thickens to the south.
	Turonian		Tununk Shale Member	400- 650	Blue-gray to black sandy marine slope forming mudstone.
	Cenomanian		Dakota Sandstone	0- 60'	Variable assemblages of yellow-gray sandstone, conglomerate shale and <i>coal</i> . Beds lenticular and discontinuous.
	Albian		<i>MINOR COAL</i>		

¹(Doelling, 1972, pg. 68)

SR / PR REC JAN 13 1994

TABLE 2

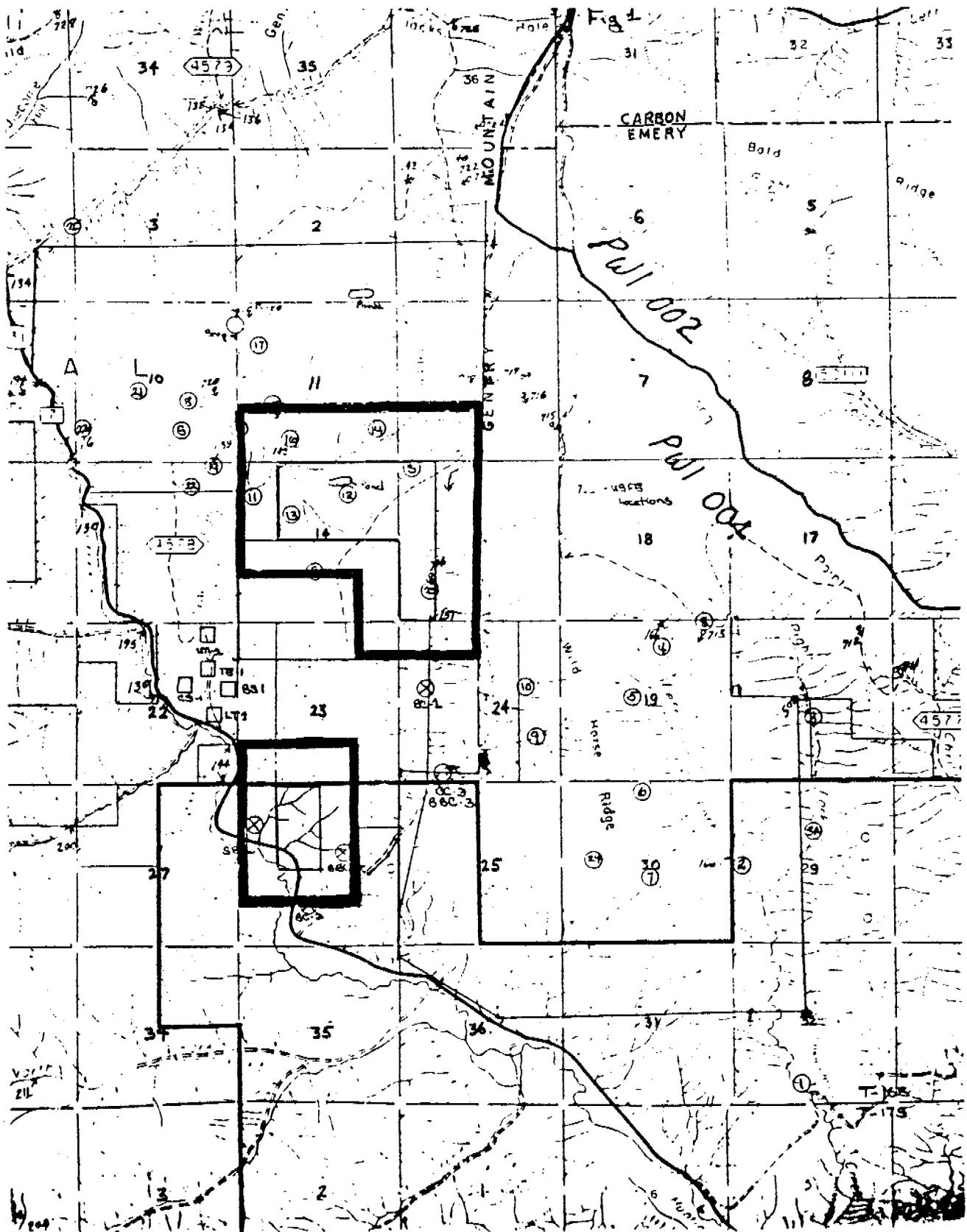
<u>Drill Hole</u>	<u>Location</u>	<u>Elevation</u>	<u>Estimated Depth</u>
SDH-1	1600'S 100'W OF NE CORNER SEC 14 T16S R7E	9320'	1970'
SDH-1 ALT.	2300'S 1100'W OF NE CORNER SEC 14 T16S R7E	9388'	2040'
SDH-2	600'S 1300'W OF NE CORNER SEC 11 T16S R7E	9490'	2140'
SDH-3	2100'S 1100'W OF NE CORNER SEC 10 T16S R7E	9080'	1730'
SDH-4	2500'N 900'E OF SW CORNER SEC 30 T16S R8E	8760'	1410'

ATTACHMENTS

Table 7M-2. 1991 Survey

<u>ID#</u>	<u>Description</u>	<u>Flow</u>	<u>pH</u>	<u>Cond.</u>	<u>Date</u>
#1	Fish Creek	120	7.9	800	7/30/91
#2 (WHR-1)	L.F. Fish Creek	2.5	7.6	500	7/31/91
#3	Rt. F. Fish Creek	80	7.6	500	7/31/91
#4 (WHR-3)	Head of L.F. Fish Creek	20.	8.3	1050	7/30/91
#5 (WHR-4)	West Side Fish Creek L.F.	31	8.2	600	7/30/91
#6 (WHR-7)	West Side Fish Creek L.F.	40	8.2	450	7/30/91
#7 (WHR-8)	East Side Wild Horse Ridge	5	8.1	500	7/31/91
#8 (WHR-2)	East Side Fish Creek L.F.	10	8	500	7/31/91
#9 (WHR-6)	R.F., R.F. Bear Canyon	4.7	8.1	510	8/08/91
#10 (WHR-5)	L.F., R.F. Bear Canyon	<.2	8	1450	7/31/91
#11 (FBC-1)	McCadden Hollow Creek	1.5	7.9	800	7/31/91
#12 (FBC-2)	McCadden Hollow Below Fence	12	8.05	550	8/01/91
#13 (FBC-3)	South Side McCadden Hollow	1.5	8	450	8/01/91
#14 (FBC-4)	McCadden Hollow Above Fence	8.7	7.5	500	8/01/91
#15 (FBC-5)	L.F. McCadden Hollow Trough	8.5	8	550	8/02/91
#16 (FBC-6, 6A)	L.F. McCadden Hollow	9.8	8.4	500	8/02/91
#17 (FBC-7)	Trail Canyon Trough	2.1	8.2	700	7/30/91
#18 (FBC-8)	West Side Trail Canyon	5	7.6	450	8/07/91
#19 (FBC-9)	East Side Trail Canyon	22.4	7.6	480	8/07/91
#20	Tie Fork Creek	120	8	500	8/08/91
#21 (FBC-11)	East Side Huntington Canyon	15	8.4	300	8/08/91
#22 (FBC-10)	Trail Creek	9	7.8	450	8/07/91
#23	Huntington Creek Seepage	2.4	7.8	2000	8/08/91
(WHR-9)	Wild Horse Trough	4	8.1	450	8/08/91
#25 (FBC-12)	Head Bear Creek	7.8	8.2	2000	8/08/91

Figure 7M-2. 1991 Survey



Sedge fescue	<i>Festuca dasyclada</i>	3c	S	Open slopes and ridges in sagebrush, mountain brush, and juniper communities on Green River Shale formation and limestone gravels between 6,990 and 10,000 feet elevation.
Canyon Sweetvetch	<i>Hedysarum occidentale</i> var. <i>canonae</i>	C2	S	Alluvium or outwash deposited material; pinyon-juniper, sagebrush communities between 5,000 and 8,000 feet elevation.
Low hymenoxys	<i>Hymenoxys depressa</i>	C2	S	Ephedra, sagebrush, shadescale and pinyon-juniper communities on very rocky, shallow fine silty clay to clay loam soils between 4,400 and 8,000 feet elevation.
Helenium hymenoxys	<i>Hymenoxys helenioides</i>	3b	S	Mountain brush, sagebrush, aspen, and dry meadow communities on clay loam soils between 8,000 to 10,700 feet elevation.
Maguire campion	<i>Silene petersonii</i>	C2	S	Ponderosa pine, Rocky Mountain juniper, bristlecone pine, spruce-fir and aspen-sagebrush communities on open calcareous and igneous gravels between 6,955 to 11,200 feet elevation.
Ute ladies'-tresses	<i>Spiranthes diluvialis</i>	C1	T	Low, wet or mesic riparian meadows or in understory meadows of riparian woodlands in the Colorado River drainage of Eastern Utah. "No known population or habitat has been found on the forest to date, 3/92". (Mr. Bob Thompson, USFS Price)

1 Spahr, et al. 1991
Atwood, et al. 1991

2 S=Sensitive, T=Threatened, E=Endangered, see page 21

3 Endangered Species Act Listing

4 Forest Service Region 4 Status

CEDAR CREEK WATER USE

THIS AGREEMENT, made and entered into as of the 23rd day of November 1993, by UNITED STATES FUEL COMPANY, herein called "U.S. Fuel" and CO-OP MINING COMPANY, herein called "Co-op".

WITNESSETH:

Co-op desires to use water from Cedar Creek, which is owned and controlled by U.S. Fuel, for the purpose of drilling exploratory holes and monitoring wells on the Century Mountain.

NOW THEREFORE, in consideration of Co-op paying to U.S. Fuel (\$1.00) and sharing all drill information with U.S. Fuel acquired and compiled as a result of this exploration, U.S. Fuel, hereby grants Co-op permission to use such water subject to the following conditions as set forth below.

CO-OP, in consideration of said grant, agrees:

1. That the water use will be for the period beginning June 1, 1994 and ending October 31, 1994.
2. That only water necessary for the drilling will be removed from Cedar Creek.
3. That it will at all times protect, indemnify, save harmless and defend U.S. Fuel from any and all claims, actions, demands, judgments, costs, expenses and damages of every kind and nature of any person whatsoever based upon or resulting from injury to or death of any person, and damage to any property in any manner arising out of or caused by anything done or omitted by Co-op in the exercise of the rights and privileges granted.
4. That it will share any information generated as result of such drilling as stated above, including interpretive data, for which Co-op shall not be responsible for the use thereof by U.S. Fuel.

The parties hereto shall cause this Agreement to be executed, by the below authorized signatures.

UNITED STATES FUEL COMPANY

By:

Michael W. Brown
Its:

CO-OP MINING COMPANY

By:

Bill W. Stoddard
Its:

CEDAR CREEK WATER USAGE

THIS AGREEMENT, made and entered into as of the _____ day of _____, 1993, by UNITED STATES FUEL COMPANY, herein called "U.S. Fuel" and CO-OP MINING COMPANY, herein called "Co-op".

WITNESSETH:

Co-op desires to use water from Cedar Creek, which is owned and controlled by U.S. Fuel, for the purpose of drilling exploratory holes and monitoring wells on the Gentry Mountain.

NOW THEREFORE, in consideration of Co-op paying to U.S. Fuel (\$1.00) and sharing all drill information with U.S. Fuel acquired and compiled as a result of this exploration, U.S. Fuel, hereby grants Co-op permission to use such water subject to the following conditions as set forth below.

CO-OP, in consideration of said grant, agrees:

1. That the water use will be for the period beginning June 1, 1994 and ending October 31, 1994.
2. That only water necessary for the drilling will be removed from Cedar Creek.
3. That it will at all times protect, indemnify, save harmless and defend U.S. Fuel from any and all claims, actions, demands, judgements, costs, expenses and damages of every kind and nature of any person whomsoever based upon or resulting from injury to or death of any person, and damage to any property in any manner arising out of or caused by anything done or omitted by Co-op in the exercise of the rights and privileges granted.
4. That it will share any information generated as result of such drilling as stated above, including interpretive data, for which Co-op shall not be responsible for the use thereof by U.S. Fuel.

The parties hereto shall cause this Agreement to be executed, by the below authorized signatures.

UNITED STATES FUEL COMPANY

CO-OP MINING COMPANY

By: _____
Its: _____

By: _____
Its: _____

C.O.P. Development Co.
3212 South State Street
Salt Lake City, Utah 84115

January 3, 1994

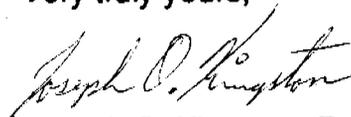
Wendell Owen
Co-op Mining Co.
P.O. Box 1245
Huntington, Utah 84528

Dear Mr. Owen:

C.O.P. Coal Development Co. hereby grants Co-op Mining Co. permission to construct and maintain exploration drill holes/monitor wells as required on Federal Leases:

U-38727, U-46484, U-020668, U-024316.

Very truly yours,



Joseph O. Kingston, President
C.O.P. Coal Development Co.



State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
James W. Carter
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

February 4, 1994

TO: File

FROM: Susan M. White, Senior Reclamation Biologist *SMW*

RE: Exploration Plan, CEP - 94A, Co-Op Mining Co., Bear Canyon Mine, ACT/015/025, Emery County, Utah

SYNOPSIS

Co-Op Mining Company proposes to drill four exploration drill holes. The drill holes are adjacent to but not within the current permit area. Less than 250 tons of coal will be removed in the proposed exploration. This review pertains only to items relating to biology and revegetation.

ANALYSIS

Several deficiencies in the application were noted as listed below.

1. The proposal refers to the use of a seed mixture that is used within the permit area for similar reclaimed areas. The exploration permit is a stand alone document and must include the seed mixture that the operator is proposing to use.
2. The proposal does not state the methods of seeding.
3. The proposal states that golden eagle nests occur adjacent to the proposed drilling areas but not within a half mile. The operator must cite the source of this information.
4. The proposal states that no threatened or endangered plant species have been identified in the exploration area. The proposal must state how this was determined.

RECOMMENDATION

A Minor Coal Exploration Permit cannot be issued by the Division until the above noted deficiencies are resolved.





State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor

Ted Stewart
Executive Director

James W. Carter
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

February 7, 1994

Mr. Bill Stringer, District Manager
Bureau of Land Management
Moab District
P.O. Box 970
Moab, Utah 84532

Re: Exploration Drill Holes (U-46484, U-024316, and U-020668), Co-Op Mining Company, Bear Canyon Mine, ACT/015/025-CEP-94A, Emery County, Utah

Dear Mr. Stringer:

The Division has reviewed the exploration proposal from Co-Op Mining Company (received January 24, 1994) and has found four deficiencies relative to biology and revegetation in this proposal.

The deficiencies are:

- 1) The proposal refers to the use of a seed mixture that is used within the permit area for similar reclaimed areas. The exploration permit is a stand-alone document and must include the proposed seed mixture.
- 2) The proposal does not state the methods of seeding.
- 3) The proposal states that golden eagle nests occur adjacent to the proposed drilling areas but not within a half mile. The operator must cite the source of this information.
- 4) The proposal states that no threatened or endangered plant species have been identified in the exploration area. The proposal must state how this was determined.

Exploration Proposal
Co-Op Mining Company
ACT/015/025-CEP-94A
Page 2

The above-noted deficiencies must be resolved prior to the Division recommendation for approval. Please forward updates for Division review. If you have any questions, please let me know.

Sincerely,

A handwritten signature in black ink, appearing to read "Pamela Grubaugh-Littig". The signature is fluid and cursive, with a large initial "P" and "G".

Pamela Grubaugh-Littig
Permit Supervisor

pgl

cc: Tom Rasmussen, BLM, Price

```
*****  
*  
*          **  TRANSMIT CONFIRMATION REPORT  **  
*  
*      Journal No.   : 003  
*      Receiver      : 13815238  
*      Transmitter   : DIV OIL GAS & MINING  
*      Date          : Feb 10,94 11:29  
*      Document      : 03 pages  
*      Time          : 01'48"  
*      Mode          : G3 NORMAL  
*      Result        : OK  
*  
*****
```



State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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355 West North Temple
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Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

February 4, 1994

TO: File

FROM: Susan M. White, Senior Reclamation Biologist *SMW*

RE: Exploration Plan, CEP - 94A, Co-Op Mining Co., Bear Canyon Mine, ACT/015/025, Emery County, Utah

SYNOPSIS

Co-Op Mining Company proposes to drill four exploration drill holes. The drill holes are adjacent to but not within the current permit area. Less than 250 tons of coal will be removed in the proposed exploration. This review pertains only to items relating to biology and revegetation.

ANALYSIS

Several deficiencies in the application were noted as listed below.

1. The proposal refers to the use of a seed mixture that is used within the permit area for similar reclaimed areas. The exploration permit is a stand alone document and must include the seed mixture that the operator is proposing to use.
2. The proposal does not state the methods of seeding.
3. The proposal states that golden eagle nests occur adjacent to the proposed drilling areas but not within a half mile. The operator must cite the source of this information.
4. The proposal states that no threatened or endangered plant species have been identified in the exploration area. The proposal must state how this was determined.

RECOMMENDATION

A Minor Coal Exploration Permit cannot be issued by the Division until the above noted deficiencies are resolved.



United States Department of the Interior



BUREAU OF LAND MANAGEMENT

Moab District
P.O. Box 970
Moab, Utah 84532

IN REPLY REFER TO:

3482
U-024316
U-46484
U-020668
(UT-066)

Ms. Pamela Grubaugh-Littig
Permit Supervisor
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 150
Salt Lake City, Utah 84180-1203

RECEIVED

JAN 21 1994

JAN 24 1994

ACT 1018/025

CEP-94A

DIVISION OF
OIL, GAS & MINING

Dear Ms. Grubaugh-Littig:

Co-OP Mining Company (Co-OP) proposes to drill three truck-mounted rotary coal exploration drill holes on Gentry Mountain, and one helicopter drill hole on Wildhorse Ridge. All of these coal exploration drill holes will be completed as water monitoring wells. All four coal exploration drill holes are located on Federal coal leases (U-46484, U-024316 and U-020668) outside of a permit area.

Please review this exploration plan (two copies enclosed), and provide any recommended conditions of approval to this office.

If you have any questions regarding this matter, contact Tom Rasmussen at the Price River Resource Area (637-4584).

Sincerely,

William C. Stunz

District Manager

Acting

Enclosure
Exploration Plan (29 pp), two copies

cc: UT-066, Price River Resource Area (wo/Enclosures)
UT-921, Branch of Mining Law and Solid Minerals, Utah State Office (wo/Enclosures)