

CO-OP MINING COMPANY
BEAR CREEK CANYON MINE
MINING AND RECLAMATION PLAN

CHAPTER I
INTRODUCTION AND SUMMARY OF PERMIT APPLICATION

INTRODUCTION

The purpose of this volume is to consolidate the material from the original version of the Co-op Mining Company Bear Canyon permanent regulation MRP that was submitted March 23, 1981 and subsequent submittals that were made in response to Apparent and Technical Completeness Reviews made by the Division. Also to update and upgrade the information presented in the written material and maps, and to improve the format to better conform to the Division guidelines. Should the reviewer encounter any disparity in information presented herein as compared to previous submittals, this is to be considered the correct version.

The information contained herein is true and correct to the best of my knowledge.

Wendell Owen

10-26-83

*Leona Stowell, Notary Public
Residing in Salt Lake, Utah
Commission Expires 12-11-86*

The following material constitutes a Mining and Reclamation Plan to obtain an underground coal mining permit for the Bear Canyon Mine operated by Co-op Mining Company.

This Amendment is submitted under the Utah Regulations of Coal Mining and Reclamation Operations Act (Title 40, Chapter 10, Utah Code Annotated 1953, as amended), the Surface Mining Control and Reclamation Act of 1977 (P.L. 95-87), the Cooperative Agreement between the State of Utah and the United States Department of the Interior, the Federal Land Policy and Management Act of 1976, regulations of the U.S. Geological Survey, the Permanent Regulatory Program regulations of the Surface Mining Reclamation and Enforcement, and the regulations for the State of Utah Department of Oil, Gas, and Mining.

1.1 SCOPE OF OPERATION

This section describes, in general terms, the scope of operations conducted by Co-op Mining Company at the Bear Canyon Mine. This general treatment orients the reader to the mine operation and provides an overall framework for understanding the specific details presented in the subsequent chapters of this application.

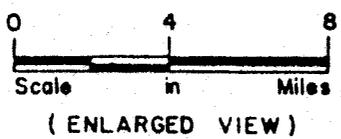
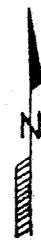
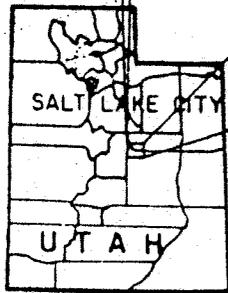
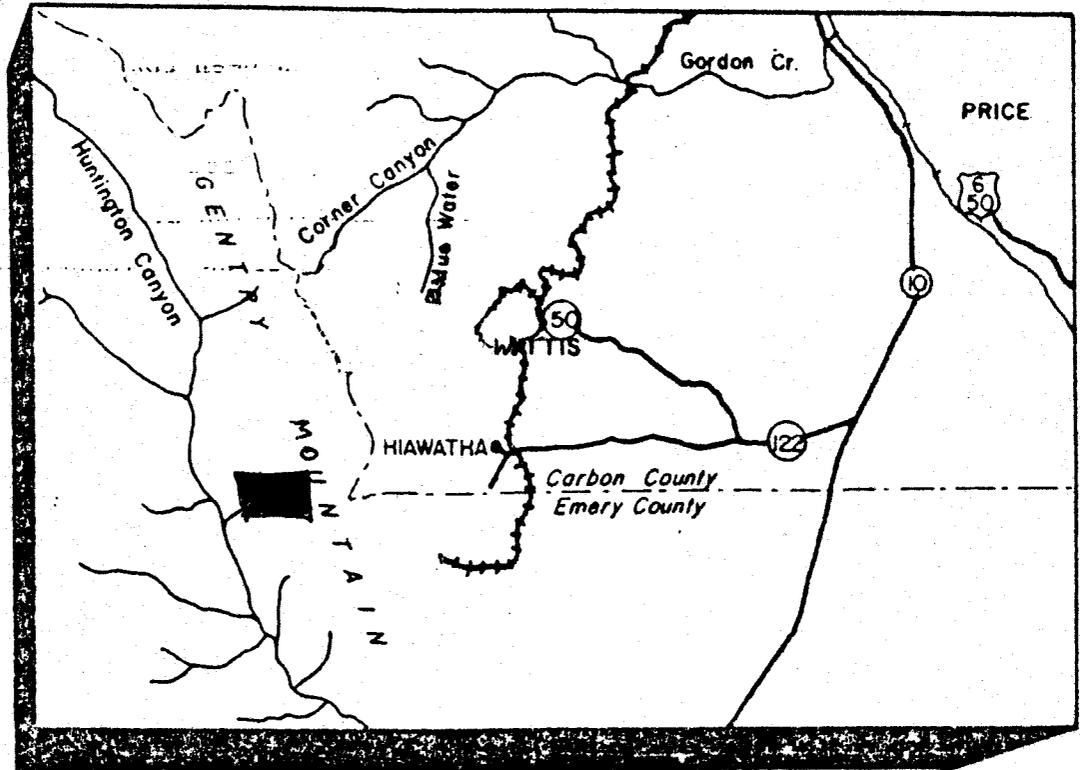


FIGURE 1-1
LOCATION MAP

CO-OP MINING COMPANY
 EMERY COUNTY

CHAPTER I

Table of Contents

- 1.1 Scope of Operation
- 1.2 Summary of Environmental Impacts
- 1.3 Introduction to Document Organization and
Reviewers Checklist

Mining Plans

Co-op Mining Company controls 1,115 acres in Emery County Utah, (900 acres in Bear Canyon, 215 acres in Trail Canyon; see Figure 1-1). Mining has been conducted on this site from 1938 to the present time and 20 million tons of new, minable coal are estimated to remain in the Blackrock Bed within the permit application area. Production during the first five-year period will total 1 million to 1.5 million tons, with an average full capacity production of 200,000 ton/year reached by the fourth year. The exact figure will depend on market conditions, of course, (all figures are for raw tons).

Access to the reserves on the property is made through 3 portal. The middle seam portal (referred to as Portal 1) and the original Bear Canyon seam portal (Portal 2) are used primarily to recover coal from previously worked areas.

Since the mining in many areas involves working in the proximity of the old mine, main entry pillars will be columnized to provide vertical support and prevent "punching" by the pillars, which would produce unsafe working conditions and cause the loss of recoverable coal.

All portals will be sealed when workings cease. Surface breakouts from the seam for ventilation will be made in Bear Canyon and may be made in Trail Canyon. Mining conditions in the future may warrant additional ventilation.

The current mining system employs room and pillar mining with continuous miners. Pillars are removed wherever possible. In the virgin coal areas, development will allow use of either room and pillar or Long-wall methods or a combination of both, with room and pillar preferred wherever feasible.

As the mine develops, main entries will be driven in two sets of either four, five, or six, with barrier pillars separating each set. These main entries will run East to West, to the property boundary. Submain entries will run at right angles from the main entries to the limits of the property.

Overall, an advance-retreat mining system is projected for this mine with retreat mining employed prior to abandonment of each section.

Barrier Pillars

Barrier pillars will be left to protect entries within

the permit area. The subsidence wave caused by maximum coal recovery will cause only minor and easily repairable damage above the coal outcrops. Mining will usually be stopped a minimum of 200 feet from the surface to maintain stability of the surface in the places where coal outcrops occur. Barrier pillars will be left in place to protect the steep escarpments.

Conservation of Coal Reserves

Mining of this area provides for maximum recovery of the coal reserves, about 60 percent overall. This high recovery is due both to known mining conditions and Co-op Mining Company's engineering and production practices. The main entry system will allow access to the reserves West of the permit area. Reserves to the North can be entered through outcrops.

Equipment

The equipment used to mine the permit area is listed in Section 3.4.5. Additional equipment will be acquired as needed.

Mine Safety

The Bear Canyon Mine will comply with all federal, state, and local regulations for safety, security, and fire control in matters pertaining to signs, fences, hazardous and flammable materials, explosives, fire protection, monitoring of coal and refuse piles, routine and accident reports, corrective actions, good housekeeping, and mine maps and records.

Operations Schedule

Annual production is scheduled to increase from 200,000 tons in 1983 to 300,000 tons by 1987. The mine operates three shifts per day for 240 days per year and employs 30 to 40 salaried and hourly workers. If production rises to 500,000 ton/year, employment will increase by a maximum of 10.

Permit Area

The permit area comprises lands owned by COP Development Company. At present, there is no land leased by the company from the state and federal governments.

1.2 SUMMARY OF ENVIRONMENTAL IMPACTS

Impacts on Current and Future Land Use

Hydrology - Soil disturbance during the life of the mine will increase erosion, but required sediment control measures will reduce impact on lowlands. There will be minimal discharge of ground water from the mine.

Vegetation, Range Management, and Soils - Temporary disturbances will remove vegetation and increase erosion, but revegetation will return desired vegetation, decrease erosion, and increase forage production.

Minerals - There is oil and gas potential in the area; however, there should be no conflict between coal mining and development of this resource.

Archaeology - No sites warranting preservation are located within the permit boundaries.

Timber, Fire, and Transportation - No merchantable timber exists within the permit area. Some

shrubs will be removed during operation, but it will be replaced by revegetation growth and yield. Access roads will provide for easier fire control and will allow removal of any fire hazards.

Recreation and Scenic Resources - In the short term the mine will reduce the recreational values of the permit area. Recontouring and grading of disturbed areas wherever possible will restore scenic values and revegetation will improve wildlife habitats.

Human Values

No public parks nor historical sites lie within the permit area. There are no historical, archeological or paleontological resources either.

Hydrologic Balance

The Bear Canyon Mine will have no impact on the quantity of ground water. Subsidence caused by the mine will have no effect on springs; the mine will intercept only miniscule quantities of water destined for the Huntington Creek drainage; the mine will not affect water supply for vegetation or creek flow.

Sediments and other impurities will be removed from surface water before discharge. Acid drainage will not occur because of the low sulfur content of the coal. Ground water discharged from the mine is not anticipated, due to the mines utilization of all water, once the mine is in full operation. Suspended sediments will increase in streams adjacent to construction areas, but this effect will be mitigated by required sediment control.

Soil Resources

Because the mine lies underground, the impact on soils is minimal overall. Surface operations and mining facilities will cover soil; disturbed soil in construction areas add to erosion because of removal vegetation and reduce forage and livestock capacity. These impacts will be mitigated by the reclamation plan. Before disturbance on virgin areas the topsoil will be removed, stockpiled and stabilized temporarily. Disturbed surface areas will be backfilled, compacted and graded to return them to as near their original contour as possible. Topsoil will be redistributed and stabilized. Re-vegetation will control erosion and increase forage and wildlife capacity.

Vegetative Resources

Impacts on vegetative resources will not be major since the Bear Canyon Mine is underground. Vegetation will be removed from areas of construction, erosion will increase and plant species will be reduced. These impacts will be mitigated by revegetation of disturbed areas with a suitable, permanent and diverse vegetative cover.

Fish and Wildlife

Since the mine will impact such a small area, the future impact of continued mining operations is expected to be minimal.

Impact on large game species will be minimized by the location and timing of surface activities. Impact on small burrowing mammals in areas of subsidence will be locally great but only temporary. All species are of adequate density, and any losses will be made up by contiguous breeding populations.

Impact on nesting birds will be minimal and local. No endangered species nest in the area.

No impact on amphibians and reptiles is expected because of the species' widespread distribution.

Huntington Creek is the only quality stream in the area and it is unlikely to be affected by sediment or subsidence. Thus, no adverse impact on aquatic wildlife is expected.

Air Quality

The only potential air pollutant produced by the mine will be particulates.

Total annual controlled emissions should be less than the 250 ton/year, controlled emission PSD cut-off. Therefore the mine does not qualify as a "major source" under the Prevention of Significant Deterioration (PSD) requirements.

Dust from road use will be reduced by water or chemical treatment of roads, vehicle use restrictions, speed limits, soil stabilization and periodic grading where appropriate. Coal dust will be controlled by spray, compaction and non-toxic dust suppressing chemicals.

Subsidence

Maximum removal of the coal resource could result in surface subsidence over the long term.

No damage will occur to manmade structures due to the topography of the area and its inaccessibility-precluding the existence of any structures. No damage is expected to result to power lines that exist within the permit area. If damage should prove to be greater than expected, such facilities could be moved to more stable sites. Subsidence effects in the unmined eastern portion of the permit area will have to be anticipated on a site-specific basis; however, the 1,000 foot of overburden in the area should minimize surface impacts. Monitoring of ground and surface impacts. Monitoring of ground and surface water will be conducted and mitigating measures employed if any significant impact occurs.

Waste Disposal

There is no refuse disposal in the mine plan area.

1.3 INTRODUCTION TO DOCUMENT ORGANIZATION AND
REVIEWER'S CHECKLIST

This Mining and Reclamation Plan follows the "General Guideline for Organizational Format and Content- -Permit Applications" revised November 3, 1980 by the Division of Oil, Gas, and Mining of the State of Utah. This organization is pursuant to U.C.A. 40-10-10(2) and UMC 771.23(a.). The table of contents for the overall mine plan, located at the front of this first volume, lists the chapters and appendices. A detailed chapter outline precedes each chapter and lists the chapter headings, plates, figures, tables and appendixes and attachments.

Tables appear with the chapter text following the reference to them. Tables are double-numbered; thus, Table 2-1 is the first table in Chapter 2, Table 2-2 the second, and so forth. Figures, which are normalized (8-1/2 x 11 or 11 x 17) illustrations, are double-numbered (Figure 2-1, 2-2, etc.) and also appear on following pages. Plates are oversized illustrations. Numbered with the same system as tables and figures, they are folded and enclosed in sleeves at the end of the chapter in sequential order.

References within the text are made by author's last name and the date of publication. References are listed alphabetically by author in the bibliography at the end of the chapter.

CHAPTER 2

OWNERSHIP AND CONTROL

CHAPTER 2

Table of Contents

2.1 Scope

2.2 Identification of Interests

2.2.1 Owners of record

2.2.2 Holders of leasehold interest

2.2.3 Purchase of record

2.2.4 Operator

2.2.5 Resident agent

2.2.6 Business designation

2.2.7 Coal mining permits

2.2.8 Owners of contiguous areas

2.2.9 Mine name and M.S.H.A ID

2.2.10 Applicant's interest in contiguous areas

2.3 Compliance information

2.4 Right of entry

2.4.1 Identification of legal rights

2.4.3 Map of legal boundaries

2.5 Relationship to unsuitable areas

2.5.1 Information on area suitability

2.5.2 Waiver

2.5.3 Waiver of owners of dwellings

Table of contents (cont.)

2.6 Permit term information

2.6.1 Starting date

2.6.2 Termination date

2.6.3 Surface acres affected

2.6.4 Horizontal Extent of mining

2.6.5 Vertical extent

2.6.6 Mining in excess of five years

2.7 Personal injury and property damage

2.8 Performance bond

2.9 Other licenses and permits

2.10 Location of public office for filing

2.11 Newspaper advertisement

2.1 SCOPE

This chapter provides all relevant and required information about the ownership and control of persons operating the Bear Canyon Mine, ownership and control of lands in the permit area, compliance status and history of the mines and their owners and operators, insurance and performance bonds, applicable licences and status of permits and fillings and public notices of this application. Also a portfolio of comments received to this date. (Appendix 2-1)

2.2 IDENTIFICATON OF INTERESTS (UMC 782.13)

Permit Applicant

CO-OP MINING CO.

53 West Angelo Ave.
Salt Lake City, Utah 84115
Tele. 801-486-5047

2.2.1 Owners of Record of Surface Area and Coal Rights

Land and Coal owner

C O P Coal Development Co.
3140 South Main St.
Salt Lake City, Utah 84115

Plate 2-1 shows the property within and contiguous to the permit boundaries. The initials COP on this

2.2.3 Purchase of Record Under a Real Estate Contract
for Surface Area Coal

See Appendix 2-B Title Insurance Policy

2.2.4 Operator, if Different from Applicant

Same as above.

2.2.5 Resident Agent of the Applicant

Wendell Owen
P.O. Box 300
Huntington, Utah 84528

2.2.6 Business Designation (partnership)

Officers and Directors of the Applicant

Ellery Kingston
140 East 30 South
Sandy, Utah 84070

Earl W. Stoddard
P.O. Box 300
Huntington, Utah 84528

Elden Kingston
991 East 3825 South
Salt Lake City, Utah 84106

John Gustafson
1815 South 1100 West
Woods Cross, Utah 84087

2.2.7 Current, Pending or Previous Coal Mining Permits
in the U.S. held by Applicant and Principal
Shareholder Subsequent to 1970

Act/015/021 Oil, Gas, and Mining Div.
Act/015/025 Oil, Gas, and Mining Div.

2.2.8. Owners of Record of Surface and Subsurface
Areas Contiguous to the Proposed Permit Area

Plate 2-1 displays the parcels of land contiguous to the permit boundaries. The parcels are designated with lower case letters.

The names and addresses of the owners of record are listed below:

The same as the General Partners.

2.2.9 Mine Name and M.S.H.A. Identification

The name of the mining operation for which this application is submitted is:

Bear Canyon Mine-Co-op Mining Company

The M.S.H.A. Identification Number is:

MSHA #42-00081-0

2.2.10 Applicant's Interest in Areas Contiguous
to Proposed Permit Area

2.3 COMPLIANCE INFORMATION (UMC 782.14)

See Appendix A.

2.4 RIGHT OF ENTRY AND OPERATION INFORMATION (UMC 782.15)

The applicant's right to enter the lands and

to conduct operations in the permit area is based on the documents listed in Section 2.4.1. It should be noted that the applicant's right is not subject to any pending litigation.

2.4.1 Document Description

The following documents support Co-op Mining Company's right of Entry and Operation. (see Appendix 2-B)

- A - - Title or Title Insurance Policy
- B - - Deed or Trust Deed
- C - - Utah Business License
- D - - County Business License
- E - - Tax Commission License
- F - - Coal Leases
- G - - Etc.

2.4.2 Identification and Explanation of Legal Rights or Agreements for Lands to be Affected by Mining Activities

Not Applicable

2.4.3 Map Showing Legal Boundaries

Legal boundaries of the permit area and contiguous areas are shown on Plates 2-1 and 2-2.

2.5 RELATIONSHIP TO AREAS DESIGNATED UNSUITABLE TO
MINING

2.5.1 Information on Area Suitability for Sur-
face and Underground Disturbance

No portion of the area to be permitted is within an area designated as unsuitable for mining under the provision of 30 CFR 764 and 765. To the best of the applicant's knowledge, no portion of the area to be permitted is under study of designation as unsuitable for mining in an administrative proceeding under 30 CFR 764 and 765.

In preparing this application, Co-op Mining Co. has conducted the most comprehensive study known to date of the suitability of the permit area. That study makes up the following chapters of this report.

State and federal regulations allow an area to be unsuitable for the mining of coal if:

- o Reclamation is not economically or technologically feasible.

Reclamation at the Bear Canyon Mine is

economically and technologically feasible. Reclamation plans are detailed in Section 3.6.

- o Coal mining is incompatible with state and local land use.

Coal mining is compatible with present and future land use of the permit area. Section 4.4 describes land use in detail.

- o Mining would affect fragile or historical lands and significantly damage historical, cultural, scientific, or esthetic values of natural systems.

The permit area is neither historically significant nor fragile. There are only ten archeological sites, primarily contiguous to the permit area, none warranting nomination to the National Register (see Section 5.5.1) Damage to natural systems will be minimal and will be mitigated (see Section 3.5). The area contains no endangered animal or plant species (see Section

3.5.5 and 3.5.6 and Chapters 9 and 10).

- o Mining would affect renewable-resource lands and result in substantial losses of food, fiber, or water supply.

The permit area contains no prime farmland (see Section 4.4.2.4) or merchantable timber (Section 4.4.2.1). The mine will have only minor impact, some of it beneficial, on water resources (see Sections 3.5.3, 7.15, and 7.2.5).

- o Mining would affect natural-hazard lands and thereby endanger life and property.

The permit lands are not natural-hazard lands.

In addition, the permit area includes no cemeteries, no national trails, no wild and scenic rivers, no wilderness study areas, and no significant harvestable forest cover.

2.5.2 Waiver Under UMC 786.19(d)(2)

Not Applicable

2.5.3 Waiver of Owners of Nearby Occupied Dwellings

Applicant does not propose to conduct or locate surface facilities within 300 feet of an occupied dwelling.

2.6 PERMIT TERM INFORMATION - ANTICIPATED FOR EACH PHASE

2.6.1 Starting Date

Starting dates anticipated for each phase of mining are dependent on permit approvals, however, it is hoped that work could commence by early spring 1981 and the mine could theoretically be in production by mid summer that same year.

2.6.2 Termination Dates

Termination dates anticipated for each phase of mining are nebulous at this time although a detailed estimate of production and reserves are included in the Geology Section and a projection of 50-years appears realistic.

The final termination date for the mining operation is expected to be 2030.

2.6.3 Numbers of Surface Acres Affected

The anticipated disturbance by the Bear Canyon Mine totals about 10 acres. Plate 2-2 shows potential property expansion and future facilities of the mine.

2.6.4 Horizontal Extent of Underground Working for Each Phase

Section 3.4.8.3 tabulates the horizontal extent of underground working.

2.6.5 Vertical Extent for Each Phase

Plate 2-3 shows the mine development plan by seam during each of the next five years, then for each five-year period thereafter for the life of the mine.

Between 1983 and 1988, all production will be from the Middle Seam (see Section 3.4.1, Mining Plans).

In 1983 ----1988 recovery of the Middle Seam will occur on the Co-op fee land (see Plate 2-3)

2.6.6 Mining in Excess of Five Years

The amount of reserves within the permit area is not minable in five years. The Co-op Coal Company anticipates continuing operations at the Bear Canyon Mine at least through the remainder of the twentieth century. Investments have accordingly been made and will continue to be made in facilities, equipment, property, and mineral and mining leases. Investment in much of the equipment and facilities will not have been recovered within five years. Furthermore, associated reclamation costs for disturbed areas will be substantial. For these reasons a permit term of 20 years is requested.

The information included in this application deals with the effects of the entire 20-year period of proposed mining (see Plate 2-3) New and updated information will be supplied as required.

2.7 PERSONAL INJURY AND PROPERTY DAMAGE INFORMATION

Co-op Coal Company carries public liability and

property damage insurance in due force. In response to OSM's completeness statement, this policy has been increased to comply with the requirements of 30 CFR 806.14 and UMC 806.14. The policy bears a rider requiring the insurer to notify OSM and DOGM if the policy is cancelled. A copy of the certificate of insurance and rider is supplied to the Utah Division of Oil, Gas, and Mining. (see Appendix 2-C)

2.8 PROPOSED PERFORMANCE BOND

As required by UMC 800.11 and 30 CFR 800.11, the applicant has filed copies of a Performance Bond conforming to 30 CFR 805 and 806 and UMC 805 and 806. Reclamation costs relevant to this bond are detailed in Section 3.6.7.

2.9 OTHER LICENSES AND PERMITS

Section 2.2.8 lists coal mining permits applied for by the applicant and principal shareholder. The other permits and licenses dealing with land use, air and water quality, water rights and health and safety laws and regulations are listed in Table 2-4.

Table 2-4
 APPARENT COMPLETENESS REVIEW
 ATTACHMENT
 OTHER PERMITS AND LICENSES
 BEAR CREEK CANYON MINE

Agency	Permit/License	Reference	Identification #	Date of Application	Date of Approval
Utah Division of Oil, Gas and Mining	Surface Mining Control and Reclamation Permit	Interim Permit	ACT/015/021	May 16, 1978	March 7, 1979
U. S. Environmental Protection Agency	National Pollution Discharge Elimination System (NPDES)	Federal Water Pollution Control Act	UT-0023612	Apr 15, 1979	July 8, 1979
	Spill Prevention Control & Counter Measure Plan	Federal Water Pollution Control Act		Pending	
	Prevention of Significant Deterioration Permit (PSD)	Clean Air Act Amendments of 1977			Potential emissions less than 100 tons per year. PSD not required.
Utah Division of Water Rights	Approval Order Small Structures	Section 73-5-5 of Utah Water Code		none	
Dam Safety	Dam Design Review	Section 73-5-5 of Utah Water Code		none	
Utah Division of Environmental Health	Approval Order Air Quality	Utah Air Conservation Act		May 5, 1980	June 17, 1980
	Approval Order-Culinary Water Wastewater & Solid Waste Disposal Site Facilities	Utah State Water Pollution Control Act		Pending	Solid waste not required. See exhibit 'a'.
	Construction Permit for Sedimentation Ponds				Construction is complete at present.
	Driveway Permit for Each Location Where a Private Road Enters a County or State Road				Have valid existing rights. (UMC 761.5 (b))

Agency	Permit/License	Reference	Identification #	Date of Application	Date of Approval
Utah Division of Water Rights	Water Rights Appropriation of Record of Diversion			none	
Mine Safety & Health Administration	Mine Permit	Mine Safety & Health Act	42-00081-0 42-0697	Dec 10, 1978 Sept 24, 1980	Dec 22, 1978 Sept 27, 1980
Industrial Commission of Utah	Notice of Intent to Mine Coal	General Safety Orders Utah Coal Mines			
Bureau of Land Management	Right-of-Ways/ Special Use Permits	Federal Land Policy & Management Act of 1976			Permit area on Fee land.
Utah Division of State Lands	Right-of-Ways/ Special Use Permits				Permit area on Fee land.
U. S. Forest Service, etc.	Right-of-Ways/ Special Use Permits				Permit area on Fee land.
County Zoning Commission		Zoning approval		Jan 30, 1980	Apr 7, 1980

Appendix 2-1

No comments have been received as of this date.

Appendix 2-A

VIOLATION LIST NUMBER (1)

<u>Violation Number</u>	<u>Violation</u>	<u>Reg. No.</u>	<u>Location</u>	<u>Status</u>
N78-V- 1-1-1-A <u>11/9/78</u>	Opening & developing a site for surface coal mining operations without a State permit. Violation 30-USC-502(a)	USC 502 (a)	Entire Operation	Abated, Assessments made and paid
1-B	All surface drainage from disturbed areas is not passing through a sedimentation pond. No surface runoff collection system on sedimentation ponds exists at this site.	717.17	All portions of surface disturbance at the minesite.	
1-C	Failure to post mine permit identification signs.	30 CFR 712.12	All public access points to the minesite, namely public access to minesite from St. Highway 31.	
1-D	Failure to monitor ground water.	30 CFR 717.17	Entire Operation	
1-E	Failure to develop and implement a surface water monitoring program.	30 CFR 717.17	Entire Operation	
1-F	Failure to treat or bury and compact combustible material	PL 95.87 Sec 515 (b) 914 + 30 CFR 717.14	1. Waste Pile area under conveyor belt that leads to the coal stockpile area from the tippable site. 2. Area that borders the coal stockpile site about 100 ft. downstream from the stream crossing that enters the stockpile area over Trail Creek.	Abated, Assessments made and paid

VIOLATION LIST NUMBER (1)

Violation Number	<u>Violation</u>	<u>Reg. No.</u>	<u>Location</u>	<u>Status</u>
1-G	All access roads at this mine are not constructed so as to prevent additional contribution of suspended solids to streamflow.	717.17	Notice applies to all access roads used at this minesite in Trail Creek Canyon.	Abated, Assessments made and paid

VIOLATION LIST NUMBER (1)

<u>Violation Number</u>	<u>Violation</u>	<u>Reg. No.</u>	<u>Location</u>	<u>Status</u>
2 of 4	Failure to pass surface drainage from a disturbed area through a sediment control structure.	MC 717.17 (a) Title 40-10-17 (i) (ii) (a)	Reclaimed area between haul road and Huntington Canyon Highway.	
3 of 4	Failure to maintain ditches, culverts, and other structures serving to drain access and haul road.	MC 717.17 (i) (3) (ii) Title 40-10-17 (q)	1. Culverts of upper access road to portal area. 2. Upper culvert of mainstream drainage. 3. Diversion ditch between lower shop area and stockpile. 4. Diversion ditch between coal stockpile & sed. pond.	
4 of 4	Failure to segregate stockpile and protect topsoil from wind and water erosion or contaminants.	MC 717.20 (a) Title 40-10-17 (e)	Refuse extension area above sediment pond diversion channel.	
N80-1-15- 2 1 of 2 12/4/80	Failure to mine in accordance with approved plan. Failure to monitor ground water as required by the Regulatory Authority.	MC 715.11 (a) MC 717.11 (a) MC 717.17 (h) (2)	Groundwater monitoring plan.	Abated, Assessments made and paid.

VIOLATION LIST NUMBER (1)

<u>Violation Number</u>	<u>Violation</u>	<u>Reg. No.</u>	<u>Location</u>	<u>Status</u>
N79-5-5-27-2 <u>9/18/79</u> 1 of 2	Failure to dispose of waste within an area not approved by the Regulatory Authority	30 CFR 715.15 of the rules and regulations PL 95-87 Sec. 516	Head of hollow behind Mr. Owens trailer adjacent to supply road to the portal.	Abated, Assessments made and paid
N79-5-5-27 <u>9/18/79</u> 2 of 2	Failure to have a copy of all current permits licenses, approved plans, or other authorizations to operate the mine shall be available for inspection at or near the mine-site.	30 CFR 717 11b of the rules and regulations PL 95-87, Sec. 517 (b) (1).	Entire operation	
<u>11/27/79</u>	Cessation Order			
<u>5/6/80</u>	Failure to maintain diversion so as to permit additional contribution of suspended solids to overland flow.	MC 717.17 (c)		
N80-1-14-4 1 of 4	Operating without a permit	40-10-9-(1) Utah code Annotated 1953	Recent development of truck turnaround area above scalehouse.	Abated, Assessments made and paid

VIOLATION LIST NUMBER (1)

<u>Violation Number</u>	<u>Violation</u>	<u>Reg. No.</u>	<u>Location</u>	<u>Status</u>
N81-2-8-2 2 of 2 <u>8/6/81</u>	Failure to place and store noncoal waste in a controlled manner in a designated portion of the permit area.	UMC 817.89(a)	Entire Operation	
N81-3-16-1 1 of 1 8/16/81	Failure to submit surface and ground water data according to interim surface and groundwater monitoring plans as required by the Division in 3/5/81 certified letter.	UMC 771.19	Entire Operation	Abated, Assessments made and paid
N81-2-13-4 1 of 4 10/14/81	Failure to notify Division of structural weakness in sediment pond. Failure to comply with terms and conditions of permit. Failure to comply with Federal and State water quality standards, and effluent limitations.	UMC 817.41(c) UMC 771.19 UMC 817.46(t)	Sediment pond discharge due to breach in embankment.	
N81-2-13-4 2 of 4 10/14/81	Failure to pass disturbed area drainage through a desimentation pond or treatment facility before leaving the permit area to prevent additional contaminations of sediment to streamflow or to runoff outside the permit area. Failure to place waste in a controlled manner to ensure that leachate & runoff do not degrade surface or groundwater. Failure to identify toxicity of waste.	UMC 817.42 (c)(1) UMC 817.45 UMC 817.71 (c)(1) UMC 817.48(a) 40-10-18(2)(D) Utah Code Annotated 1953	Reclaimed site across the stream from sediment pond used for disposal of sediment waste from sediment pond.	

VIOLATION LIST NUMBER (1)

<u>Violation Number</u>	<u>Violation</u>	<u>Reg. No.</u>	<u>Location</u>	<u>Status</u>
N80-1-15-2 2 of 2	Failure to mine in accordance with approved plan. Failure to monitor surface water as required by the Regulatory Authority	MC 715-11 (a) MC 717-11 (a) MC-717(b)(1) (v)	Surface water monitoring plan	
N81-3-5-1 2/4/81	Failure to clearly mark stockpiled soil.	UMC 817.11(g)	Trail Canyon topsoil stockpile adjacent to newly constructed refuse disposal extension. Bear Creek - topsoil stockpile at intersection of upper pad access road and lower pad.	
N81-3-1-1	Failure to maintain ditches, culverts and other structures serving access and haul road.	MC 717.17 (j) (3)(ii) revised UMC 817.165(a)(b) Title 40-10-17(q)		Abated, Assessments made and paid
N81-2-8-2 1 of 2 8/6/81	Failure to maintain designed sediment control measures so as to prevent additional contributions of sediment to streamflow or to runoff outside the permit area.	UMC 817.45 UMC 817-165 40-10-18(2)(i) Utah code Annotated 1953	Entire operation	

VIOLATION LIST

<u>Violation Number</u>	<u>Violation</u>	<u>Reg. No.</u>	<u>Location</u>	<u>Status</u>
82-1-2-10 4 of 10	Failure to remove topsoil	UCA-40-10-17(e)	West 3rd Main Access Road	Terminated
82-5-2-10 4 of 10	Failure to mark permit mine identification sign	UCA-40-10-19(4) UMC 817.11(d) UMC 817.11(c-1,2,3)	Entire Operation Area	Terminated
82-5-2-10 2 of 10	Operating without a permit	UCA 40-10-9(1)	¼ mile south scalehouse	Vacated
82-5-2-10	Failure to place noncoal waste permitted area	UCA 40-1--9(1) UMC771.19 UMC817.89 UCA-40-10-20(5) UCA 40-10-22(2) (a)(i)	Uppermost Pad	Terminated
82-1-5-1	Failure to operate in ac- cordance of approved plan	UMC 771.19 817.43 B,C,F 817.45 817.100 817.170-176	Power Pole Line	Terminated
82-1-3-1	Failure to store noncoal waste in approved manner	UCA 40-10-22(1)(c) UMC 817.89 a,b,c,	Permit Area	Terminated
Cessation Order 82-1-3-1	Same as above failure to abate			Vacated

VIOLATION LIST

<u>Violation number</u>	<u>Violation</u>	<u>Reg. no.</u>	<u>Location</u>	<u>Status</u>
82-5-2-10 10 of 10	Failure to construct sediment control measures	UCA-40-10-18, 2 i (ii) UMC 817.41 UMC 817.42(a) (1)(6) UMC 817.43 c UMC 817.45(1)	Sed. pond west side of Bear Creek	Terminated
82-5-2-10 9 of 10	Failure to construct diversions	UCA-40-10-15 (2)(i)(ii) 817.43c 817.42 a(1) 817.41	Access haul road	Terminated
82-6-2-10 8 of 10	Failure to conduct coal mining to safeguard hydrology	UCA 40-10-18 2 (i) UMC817.41(a) UMC817.46(a) (1)	Access haul road ¼ mile south P-A	Vacated
82-5-2-10 6 of 10	Failure to maintain sediment control-erosion.	UMC 817.45 (iiie)	Downslope Bear Canyon Mine Area	Terminated
82-5-2-10 6 of 10	Failure to conduct coal mining to safeguard hydrology	UCA 40-10-18 (2)(i) UMC 817.41 (a) UMC 817.44 UMC 817.45	Bear Creek Stream Channel	Terminated
82-5-2-10 5 of 10	Failure to protect topsoil	UCA-40-10-17 (e)UMC 817.23	Sed. Pond Topsoil Pile	Terminated

VIOLATION LIST NUMBER (1)

<u>Violation no.</u>	<u>Violation</u>	<u>Reg. no.</u>	<u>Location</u>	<u>Status</u>
N81-2-13-4 3 of 4 10/14/81	Failure to place underground development waste in a designated disposal area within the permit area as authorized in the approved permit conducting surface operations without a permit.	UMC 817.71 40-10-9(1) Utah Code Annotated 1953	Reclaimed site across the stream from the sediment pond.	Abated, Assessments made and paid
N81-2-13-4 4 of 4 10/14/81	Failure to maintain sediment pond to prevent short circuiting. Failure to maintain sediment control measures to prevent additional contribution of sediment to streamflow and to runoff outside the permit area	UMC 817.45 UMC 817.46(e) 40-10-18-2 (1)(ii) Utah Code Annotated 1953	Breach in sediment pond.	

VIOLATION LIST NUMBER (2)

<u>Violation Number</u>	<u>Violation</u>	<u>Reg. No.</u>	<u>Location</u>	<u>Status</u>
82-1-3-4 1 of 4	Failure to pass runoff from disturbed area through a sediment control structure.	817.42(a)(1)	Main access and haul road.Upper end of main stockpile pad.	Terminated
82-1-3-4 2 of 4	Failure to divert runoff away from disturbed area	817.45(i) 817.45(d)	Diversion ditch adjacent to main access and haul road.	Terminated
82-1-3-4 3 of 4	Failure to store non-coal waste in an approved manner	817.89(a)(b) (c)	Entire operation	Terminated
82-1-3-4 4 of 4	Failure to eliminate fire hazards and otherwise eliminate conditions which constitute a hazard to the health and safety of the public.	40-10-18(2) (h)	Coal fires on down-slope below crusher facility	Terminated

VIOLATION LIST

Violation Number	Violation	Reg. No.	Location	Status
83-5-3-1	Failure to control runoff-diversions & sediment	UCA 40-10-18(i)(ii) UMC 817.41 UMC 817.42(a)(1) UMC 817.43(c)	Trail Canyon along access road	Terminated
83-5-1-4 1 of 4	Operating without a permit	UCA 40-10-9(1)	Out of permit area	Vacated
2 of 4	Failure to remove topsoil	UCA 40-10-17(e) UMC 817.21-23	Failure to abate 82-5-10	Terminated
3 of 4	Failure to maintain sediment control-erosion	UMC 817.45(iii)(e)	Failure to abate 83-5-2-10 7 of 10	Vacated
4 of 4	Failure to protect hydrologic balance	UCA 40-10-18(2)(i) UMC 817.41 (a) UMC 817.42 (a)(1)	Failure to abate 83-5-2-10 8 of 10	Vacated
83-5-9-1	Conduct reclamation activities without a permit	UMC 771.19 UMC 817.11	Upper Switchback Trail Canyon	Vacated
83-5-7-1	Operating without a permit	UCA 40-10-9 UCA 40-10-22(i)(c)	Bear Canyon Scale Area	Terminated
83-5-6-1	Failure to control runoff	UCA 40-10-18(2)(i)(ii) UMC 817.41 UMC 817.42(a)(1) UMC 817.43(e)	Upperroad Trail Canyon	Terminated

VIOLATION LIST

<u>Violation Number</u>	<u>Violation</u>	<u>Reg. No.</u>	<u>Location</u>	<u>Status</u>
83-1-2-3 1 of 3	Mining Activity-danger to public	UCA 40-10-22(1)(6) UCA 40-10-1(2)	Haul Road Bear Canyon Mine	Terminated
2 of 3	Operating without a permit	UCA-40-10-9	Haul Road Bear Canyon Mine	Terminated
3 of 3	Class I haul road and failure to operate	UMC 771.19 UMC 771.13 (b)(3) UMC 817.150-155	Haul Road Bear Canyon Mine	Terminated
83-1-2-1	Failure to design and maintain diversions; failure to abate 83-5-2-2	UCA 40-10-9(1) UMC 817.43 a,b,c, UMC 817.45(i)	See 85-5-2-2	Terminated
83-5-2-2 1 of 2	Failure to operate under approved permit	UCA-40-10-18(i) UMC 771.11 UMC 771.19	Bear Canyon Scale Septic Tank	Terminated
2 of 2	Failure to construct diversion	UCA 40-10-18(i) UMC 817.43(a)(b)(c) UMC 817.45(i)	Bear Canyon Fan and Crusher	Terminated
83-5-8-3 2 of 3	Failure to operate under approved plan.	UMC 771.13 UMC 771.14	New Truck Loadout Bear Canyon	Pending -DOGM approval
3 of 3	Failure to construct sed. pond as approved	UMC 817.46-47	Sediment Pond Bear canyon	Pending
3 of 3	Failure to control runoff-diversions	UCA-40-10-18 (2)(i) UMC 817.43 UMC 817.43	Drainage area-Fan	Terminated

VIOLATION LIST

<u>Violation Number</u>	<u>Violation</u>	<u>Reg. No.</u>	<u>Location</u>	<u>Status</u>
83-5-5-3 1 of 3	Failure to adequately protect topsoil	UCA 40-10-17(e)	Entire operation	Terminated
2 of 3	Failure to construct sediment control	UCA 40-10-18(2)(i)(ii) UMC 817.45 & 46	Catch basin Scalehouse	Terminated
3 of 3	Failure to conduct mining to protect hydrologic balance	UCA 40-10-18(2)(i)(ii) UMC 817.41 UMC 817.45	Bear Creek	Terminated

Appendix 2-B

First American Title Insurance Company
611 A Union Street
Framingham, MA 01901
(Amended by 1/1/71)
(Standard Form 100)

OWNER'S
POLICY

POLICY OF TITLE INSURANCE

FILED UNDER THE OFFICE OF

SOUTHERN EASTERN UTAH TITLE COMPANY



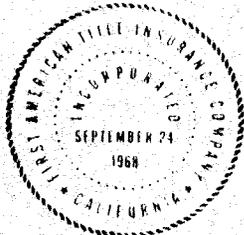
1100 S. STATE BUILDING • PRICE, UTAH 84501
(801) 637-1245

SUBJECT TO THE EXCLUSIONS FROM COVERAGE, THE EXCEPTIONS CONTAINED IN SCHEDULE B AND THE PROVISIONS OF THE CONDITIONS AND STIPULATIONS HEREOF, FIRST AMERICAN TITLE INSURANCE COMPANY, a California corporation, herein called the Company, insures, as of Date of Policy shown in Schedule A, against loss or damage, not exceeding the amount of insurance stated in Schedule A, and costs, attorneys' fees and expenses which the Company may become obligated to pay hereunder, sustained or incurred by the insured by reason of

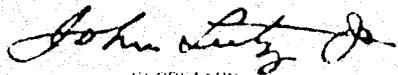
1. title to the estate or interest described in Schedule A being vested otherwise than as stated therein;
2. any defect in or lien or encumbrance on such title;
3. lack of a right of access to and from the land; or
4. unmarketability of such title.

IN WITNESS WHEREOF, First American Title Insurance Company has caused this policy to be signed and sealed by its duly authorized officers as of Date of Policy shown in Schedule A

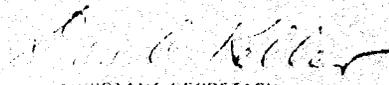
First American Title Insurance Company



BY 
PRESIDENT

ATTEST 
SECRETARY

COUNTERSIGNED


ASSISTANT SECRETARY

SCHEDULE A

Total Fee for Title Search, Examination
and Title Insurance 
Order No. 3596-E

Amount of Insurance: 

Policy No. 11,830-7

Date of Policy: September 25, 1970 at 3:10 p.m.

1. Name of Insured:

C.O.P. COAL DEVELOPMENT COMPANY,
a Utah corporation.

2. The estate or interest referred to herein is at Date of Policy vested in:

C.O.P. COAL DEVELOPMENT COMPANY,
a Utah corporation.

3. The estate or interest in the land described in Schedule C and which is covered by this policy is:

FEE SIMPLE

SCHEDULE C

The land referred to in this policy is situated in the County of Emery, State of Utah, and is described as follows:

T16S, R7E, SLBM

Section 26: E $\frac{1}{2}$ NW $\frac{1}{4}$ and all that part of SE $\frac{1}{4}$ NE $\frac{1}{4}$ and the SE $\frac{1}{4}$ lying West of a Northeast-Southwest fault line.

EXCEPTING THEREFROM all coal.

- 14: S $\frac{1}{2}$
- 22: E $\frac{1}{2}$ NE $\frac{1}{4}$, NW $\frac{1}{4}$ SE $\frac{1}{4}$, NE $\frac{1}{4}$ SE $\frac{1}{4}$
- 23: All
- 24: NW $\frac{1}{4}$ NW $\frac{1}{4}$ and all that part of the SW $\frac{1}{4}$ NW $\frac{1}{4}$ and the W $\frac{1}{2}$ SW $\frac{1}{4}$ lying West of a Northeast-Southwest fault line.
- 25: All that part of the NW $\frac{1}{4}$ NW $\frac{1}{4}$ lying West of a northeast-Southwest fault line.
- 26: W $\frac{1}{2}$ NE $\frac{1}{4}$, NW $\frac{1}{4}$ PW $\frac{1}{4}$, and all that part of the NE $\frac{1}{4}$ NE $\frac{1}{4}$ lying West of a Northeast-Southwest fault line.

* * *

AGREEMENT

This agreement made and entered into this 3rd day of August 1983, by and between Emery County, a body corporate and politic (County), and Co-Op Mining Company, a Utah general partnership (Co-Op),

WHEREAS, there is an existing road in Emery County known as Bear Creek Road, and

WHEREAS, Co-Op requires extensive use of said road, and

WHEREAS, due to said extensive use, said road should be relocated for the health, safety and welfare of the citizens of County as well as others who may have occasion to use said road,

NOW, THEREFORE, be it agreed as follows:

1. The parties hereto agree and acknowledge that the southern 0.65 miles of the road known as Bear Creek Road is a County road. Said County road runs from State Road 31 in a northerly direction for approximately 0.65 miles to a presently existing gate. Thereafter the road is a private road.
2. That Co-Op will relocate the Bear Creek Road according to the plans and specifications prepared by the Emery County Engineer and described on the document entitled Bear Canyon County Road Relocation dated October 12, 1982.
3. Co-Op will relocate the Road according to the plans and specifications referred to above at their expense. Co-Op will reimburse County for engineering costs incurred by County concerning the preparation of said plans and specifications and site inspections up to One Thousand (\$1,000.00) Dollars.
4. Co-Op will indemnify and defend County for any damage caused, or loss incurred to or claim made by any public or private individual, firm, group, association, partnership or corporation as a result of the construction conducted to relocate Bear Creek Road. Said indemnification will continue until such time as County approves the completed roadway and accepts the construction thereof.
5. Co-Op acknowledges and accepts the easements of North Emery Water Users and Huntington City which exist in, along and across the relocate Bear Creek Road. Said easements are in existence on the ground. Co-Op's acknowledgment thereof herein recognizes and preserves said easements.
6. Co-Op agrees to encase water lines of North Emery Water Users and Huntington City in nestable corrugated pipe pursuant to plans and specifications prepared by the Emery County Engineer.

7. Co-Op agrees to allow access to other property served by the relocated Bear Creek Road. Said access shall be allowed to the owner of the property, their successor in interest or any other individual, firm, group, association, partnership or corporation who requires access due to their association with the owner or because the owner has granted permission to the individual, firm, group, association, partnership or corporation to go upon his property. Co-Op will not withhold access due to the type of activity which the then owner or his agents, employees or invitees intend or in fact conduct.

8. Co-Op will provide a completion and performance bond to Emery County upon the execution hereof in the amount of Twenty-Five Thousand (\$25,000.00) Dollars which will remain in force and effect for twelve (12) months after the date said road is accepted by County as indicated in paragraph 4 above.

9. Co-Op will provide liability insurance in an amount not less than Five Hundred Thousand (\$500,000.00) Dollars to be in force during the construction of said road. Said policy will name County as an insured.

10. Co-Op agrees to complete said road in a timely manner not to exceed eighteen (18) months from the date of this agreement. County may make demand upon the bonding company under the bond provided pursuant to paragraph 8 above and secure completion of the relocation in the event construction is not completed within the agreed upon eighteen (18) months.

11. It is further understood that any additional improvements of the relocated Bear Creek Road will be at the expense of all primary users.

12. The Co-Op agrees to reclaim that portion of the old Bear Creek Road according to the specifications and requirements of the Bureau of Land Manager (BLM).

13. That the Co-Op agrees to provide Emery County with the necessary easement agreements with the Utah Department of Transportation.

14. Co-Op acknowledges and agrees to comply with standard number 6.3.8 "Protection Zone" of the Utah State Health Drinking Water Standards as it applies to supplies of drinking water in Bear Canyon.

15. County agrees to inspect the relocated Bear Creek Road within ten (10) days after notification by Co-Op of the completion thereof. County must within five (5) working days of said inspection accept the road or notify Co-Op of any deficiencies which must be then corrected by Co-Op within the time period outlined in paragraph 10 above. Should County fail to notify Co-Op of any deficiencies within five (5) working days, the road is deemed accepted by County and the twelve (12) month period indicated in paragraph 8 above begins to run from the sixth (6th) day after inspection.

IN WITNESS WHEREOF, this agreement is executed the day and year above first written, at Castle Dale, Utah, pursuant to a resolution of the Emery County Board of Commissioners at a regularly scheduled meeting of the Board.

EMERY COUNTY, a body politic and corporate,

ATTEST

Bruce A. Smith
County Clerk

By *Rice P. Ware*
Chairman of the Emery County
Board of Commissioners

IN WITNESS WHEREOF this agreement is executed at Huntington, Utah.

DATED this *3rd* day of *August*, 1983.

CO-OP MINING COMPANY, a Utah general partnership

By *B. W. Stoddard*
a General Partner

PERMIT

10844

District No. 4 Date October 1, 1982 Application of Co-op Mining Company
, By Wendell Owen, Title Manager

Address P.O. Box 1245, Huntington, Utah, Phone 746-5238, in Emery County
is hereby granted, subject to the Regulations for the Control and Protection of State Highway Rights-
of-Way, Standard Specifications for Road and Bridge Construction, Specifications for Excavation on
State Highways, General Safety Orders of the Industrial Commission, Safety Manual for Road and
Bridge Construction, Instructions to Flagmen, the approved plans, and any special limitations set
forth herein, permission for the purpose of excavate to construct an approach 30' wide for a
coal haul road.

within right-of-way limits of Highway No. 31, State Maintenance Section No. 06-31-01,
Milepost No. 32, in the following location:
About 12 miles northwest of the jct. of SR-10 & SR-31 on the east side
of the highway.

Receipt of \$5.00 permit fee is hereby acknowledged (delete where not applicable). The work permit-
ted herewith shall commence October 2, 1982 and shall diligently be prosecuted to completion. The
work shall be completed and all disturbed surfaces or objects restored on or before October 30,
1982. In the event work is commenced under this permit, the applicant agrees to prosecute the same
to completion by the date herein above specified. In the event the applicant fails or refuses to complete
the work the Utah Department of Transportation may, at its election, fill in or otherwise correct any
existing impediments at the expense of and subject to immediate payment by the applicant.

Applicant shall execute a bond in the minimum amount of \$1000, increased by multiples thereof as
determined by the District Director, to insure faithful performance of the permittee's obligation.
The bond shall remain in force for three years after completion of the work.

Before work permitted herewith is commenced, the applicant shall notify: John Cox at Huntington
687-9969 and commencement of said work is understood to indicate that the applicant
will comply with all instructions and regulations of the Utah Department of Transportation with respect
to performance of said work, and that he will properly safeguard said work to prevent accident and
shall indemnify and hold harmless the Utah Department of Transportation from all damages arising
out of any and all operations performed under this Permit.

Permittee shall not perform any work on State highway right-of-way beyond those areas or operations
stipulated on the permit.

If applicant fails to comply with Utah Department of Transportation regulations, specifications, or
instructions pertinent to this permit, the District Director or his duly authorized representative
may by verbal order suspend the work until the violation is corrected. If the applicant fails or refuses
to comply promptly, the District Director or his authorized representative may issue a written order
stopping all or any part of the work. When satisfactory corrective action is taken, an order permitting
resumption of work may be issued.

Special Limitations: Per agreement with the B.L.M. & attached map.

(Signature of Applicant)

Approved by: [Signature]
District Director



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Moab District
San Rafael Resource Area
P. O. Drawer AB
Price, Utah 84501

IN REPLY
REFER TO:

9230
UT-060-6434
UT-060-6438
(U-067)

SEP 19 1983

Mr. Wendell Owen
CO-OP Mining Company
P. O. Box 1245
Huntington, Utah 84528

Dear Mr. Owen:

Right-of-way U-52411 was issued to Emery County on September 15, 1983, for the Bear Canyon Road. A copy of the agreement between your company and the County has been received. We are therefore closing Trespasses UT-060-6434 and UT-060-6438.

Sincerely yours,

Samuel R. Ramsey
Area Manager

cc: Joe Helfrich, Utah Div. of Oil, Gas and Mining
4241 State Office Building, SLC, UT 84114

PLOT PLAN
BIG BEAR CANYON
OVERLAY ZONE

MAJOR UNDERGROUND FACILITY
CONDITIONAL USE PERMIT

JORGENSEN & TUTTLE ENGINEERING INC.

CADLE DALE, UTAH

DATE: FEB 1982 DRAWN: KAS

SCALE 1" = 100'

PROPERTY DESCRIPTION

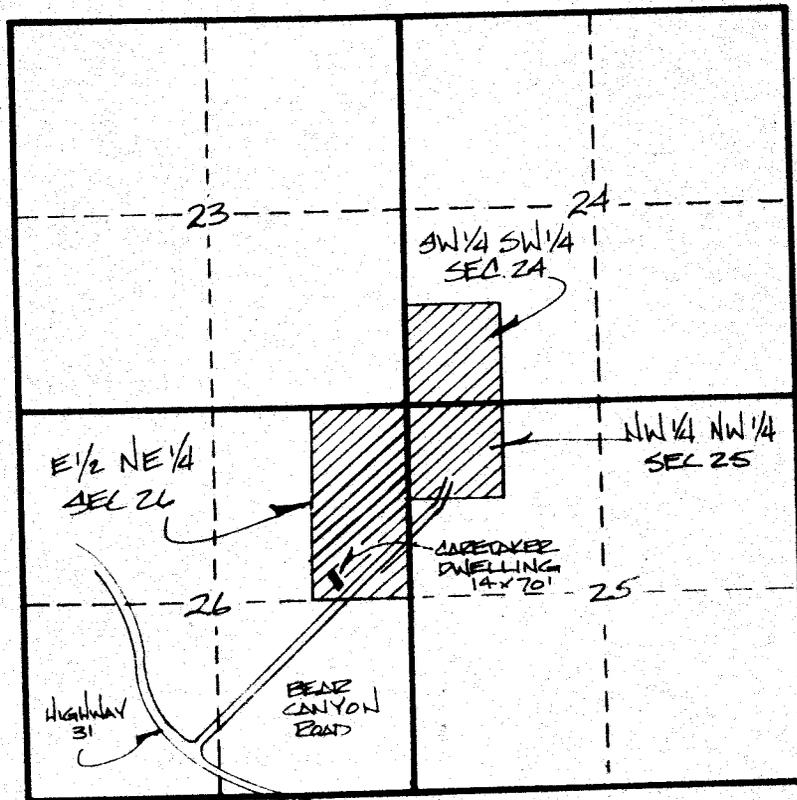
THE SW 1/4 OF THE SW 1/4, SECTION 24,
T. 16 S., R. 7 E., S1B & M.

THE NW 1/4 OF THE NW 1/4, SECTION 25,
T. 16 S., R. 7 E., S1B & M.

THE EAST 1/2 OF THE NE 1/4, SECTION 26,
T. 16 S., R. 7 E., S1B & M.

CONTAINING 160 ACRES TOTAL

40 ACRE LINE



T. 16 S., R. 7 E., S1B & M

KEY MAP

Appendix 2-C

Certificate of Insurance



THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES LISTED BELOW.

NAME AND ADDRESS OF AGENCY

Insurance Agencies, Inc.
404 East 4500 South #B-14
SLC, Utah 84107

COMPANIES AFFORDING COVERAGES

- COMPANY LETTER **A** Agna - Centaur Ins. Co.
- COMPANY LETTER **B**
- COMPANY LETTER **C**
- COMPANY LETTER **D**
- COMPANY LETTER **E**

NAME AND ADDRESS OF INSURED

Co-op Mines, Ensign Corporation
53 West Angelo Ave.
SLC, Utah 84115

This is to certify that policies of insurance listed below have been issued to the insured named above and are in force at this time. Notwithstanding any requirement, term or condition of any contract or other document with respect to which this certificate may be issued or may pertain, the insurance afforded by the policies described herein is subject to all the terms, exclusions and conditions of such policies.

COMPANY LETTER	TYPE OF INSURANCE	POLICY NUMBER	POLICY EXPIRATION DATE	Limits of Liability in Thousands (000)		
					EACH OCCURRENCE	AGGREGATE
	GENERAL LIABILITY <input type="checkbox"/> COMPREHENSIVE FORM <input type="checkbox"/> PREMISES - OPERATIONS <input type="checkbox"/> EXPLOSION AND COLLAPSE HAZARD <input type="checkbox"/> UNDERGROUND HAZARD <input checked="" type="checkbox"/> PRODUCTS/COMPLETED OPERATIONS HAZARD <input type="checkbox"/> CONTRACTUAL INSURANCE <input type="checkbox"/> BROAD FORM PROPERTY DAMAGE <input type="checkbox"/> INDEPENDENT CONTRACTORS <input type="checkbox"/> PERSONAL INJURY M & C	GL1001179	4/28/83 thru 4/28/84	BODILY INJURY	\$	\$
				PROPERTY DAMAGE	\$	\$
				BODILY INJURY AND PROPERTY DAMAGE COMBINED	\$ 1 mill	\$
				PERSONAL INJURY		\$
	AUTOMOBILE LIABILITY <input type="checkbox"/> COMPREHENSIVE FORM <input type="checkbox"/> OWNED <input type="checkbox"/> HIRED <input type="checkbox"/> NON OWNED			BODILY INJURY (EACH PERSON)	\$	
				BODILY INJURY (EACH ACCIDENT)	\$	
				PROPERTY DAMAGE	\$	
				BODILY INJURY AND PROPERTY DAMAGE COMBINED	\$	
	EXCESS LIABILITY <input type="checkbox"/> UMBRELLA FORM <input type="checkbox"/> OTHER THAN UMBRELLA FORM			BODILY INJURY AND PROPERTY DAMAGE COMBINED	\$	\$
	WORKERS' COMPENSATION and EMPLOYERS' LIABILITY OTHER Water Wells					

subject to \$250.00 Deductible

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES

Coal loading & unloading at railhead
Coal mining, colad dock operations by means of mechanical apparatus

Cancellation: Should any of the above described policies be cancelled before the expiration date thereof, the issuing company will endeavor to mail 30 days written notice to the below named certificate holder, but failure to mail such notice shall impose no obligation or liability of any kind upon the company.

NAME AND ADDRESS OF CERTIFICATE HOLDER

STATE OF UTAH &
HUNTINGTON CITY

DATE ISSUED: Sept. 1, 1983

W. E. Stutz
AUTHORIZED REPRESENTATIVE

Appendix 2-D

AFFIDAVIT OF PUBLICATION

STATE OF UTAH }
County of Emery, } ss.

I, Robert L. Finney, on oath, say that I am
the Publisher of The Emery County Progress,
a weekly newspaper of general circulation, published at Castle Dale,
State and County aforesaid, and that a certain notice, a true copy
of which is hereto attached, was published in the full issue of
such newspaper for Four (4)

consecutive issues, and that the first publication was on the
1st day of April, 19 81, and that the
last publication of such notice was in the issue of such newspaper
dated the 22nd day of April, 19 81

Robert L. Finney
Subscribed and sworn to before me this

7th day of May, 19 82

Michelle Finney
Notary Public.

My Commission Expires October 28, 1983

Residing at Price, Utah

Publication fee, \$ 41.60

NOTICE OF FILING APPLICATION FOR COAL MINING AND RECLAMATION PERMIT

Co-op Mining Company, Box 308, Huntington, Utah, hereby announces its intent to file application for a coal mining permit for the Bear Canyon mine with the Division of Oil, Gas, and Mining under the laws of the State of Utah. A copy of the complete application is available for public inspection at the Emery County Recorder's Office, Emery County Court House, Castle Dale, Utah 84513. Written comment on the application should be submitted to the State of Utah Oil, Gas, and Mining Division, 1588 West North Temple, Salt Lake City, Utah 84116.

The area to be mined can be found on the USGS Hiawatha quadrangle map. The approximately 820 acres of the permit area are on private property (see coal area) described as follows:

- Area 16 South; Range 7 East SLM
 - Sec. 14; SW 1/4
 - Sec. 23; E 1/4; E 1/4 NW 1/4; E 1/4 SW 1/4; SW 1/4 SW 1/4
 - Sec. 24; All West of the N-S fault
 - Sec. 25; All West of the N-S fault
- Published in the Emery County Progress April 1, 8, 15 and 22, 1981.

CHAPTER 3

OPERATION AND RECLAMATION PLAN

CHAPTER 3

Table of Contents

- 3.1 Scope
- 3.2 Surface facilities - existing
- 3.3 Surface facilities - proposed
 - 3.3.1 Site selection
 - 3.3.2 Portals
 - 3.3.3 Buildings and structures
 - 3.3.4 Coal handling
 - 3.3.5 Power system
 - 3.3.6 Water supply
 - 3.3.8 Water diversion
 - 3.3.9 Sedimentation control
 - 3.3.10 Waste and refuse areas
 - 3.3.11 Transportation
 - 3.3.12 Topsoil
 - 3.3.13 Explosives
 - 3.3.14 Public roads
 - 3.3.15 Surface disturbance
 - 3.3.16 Additional surface disturbance
 - 3.3.17 Construction schedule
- 3.4 Operation plans
 - 3.4.1 Mining plans
 - 3.4.2 Barrier pillars

Table of Contents (cont.)

- 3.4.3 Conservation of coal resources
- 3.4.4 Economis validity of operation
- 3.4.5 Equipment
- 3.4.6 Mine safety
- 3.4.7 Operation schedule
- 3.4.8 Mine permit area
- 3.4.9 Mine plan area

3.5 Environmental protection

- 3.5.1 Preservation of land use
- 3.5.3 Protection of hydrologic balance
- 3.5.2 Protection of human values
- 3.5.4 Preservation of soil resources
- 3.5.5 Protection of vegetative resources
- 3.5.6 Protection of fish and wildlife
- 3.5.7 Protection of air quality
- 3.5.8 Subsidence control plan
- 3.5.9 Waste disposal

3.6 Reclamation plan

- 3.6.1 Contemporaneous reclamation
- 3.6.2 Soils
- 3.6.3 Final abandonment
- 3.6.4 Backfilling and grading
- 3.6.5 Revegetation
- 3.6.6 Schedule of reclamation

RECEIVED

APR 30 1984

**DIVISION OF
OIL, GAS & MINING**

BEAR CANYON MRP

4/30/84

This material replaces corresponding chapters
and pages in Co-Op Mining Company's MRP Submittal of 10/26/83

Table of Contents (cont.)

- 3.4.3 Conservation of coal resources
- 3.4.4 Economic validity of operation
- 3.4.5 Equipment
- 3.4.6 Mine safety
- 3.4.7 Operation schedule
- 3.4.8 Mine permit area
- 3.4.9 Mine plan area
- 3.5 Environmental protection
 - 3.5.1 Preservation of land use
 - 3.5.2 Protection of hydrologic balance
 - 3.5.3 Protection of human values
 - 3.5.4 Preservation of soil resources
 - 3.5.5 Protection of vegetative resources
 - 3.5.6 Protection of fish and wildlife
 - 3.5.7 Protection of air quality
 - 3.5.8 Subsidence control plan
 - 3.5.9 Waste disposal
- 3.6 Reclamation plan
 - 3.6.1 Contemporaneous reclamation
 - 3.6.2 Soils
 - 3.6.3 Final abandonment
 - 3.6.4 Backfilling and grading
 - 3.6.5 Revegetation
 - 3.6.6 Schedule of reclamation
 - 3.6.7 Reclamation Bonding
 - 3.6.8 Alluvial Valley Floors

Table of Contents (cont.)

Appendix 3.3.6 - A	Water rights
Appendix 3.3.11 - A	Class I road
Appendix 3 - B	Roof control plan
Appendix 3 - C	Interim reclamation plan
Appendix 3 - D	Topsoil
Appendix 3 - E	Toxic materials

3.1 SCOPE

This part describes the actions and procedures of Co-op Mining Company to satisfy the requirements for underground mining operations and reclamation.

3.2 SURFACE FACILITIES - EXISTING

The mine which existed at the proposed site has been abandoned for over 30 years and subsequently there is no evidence of long existing facilities.

3.3 SURFACE FACILITIES -PROPOSED

Subsection 3.3.1 and 3.3.2 deal exclusively with proposed new facilities.

3.3.1 Site Selection and Preparation of Proposed Facilities

Plate 2-2 is an overlay of the proposed location of all surface facilities. In addition an accurate determination of where each facility is in relationship to the existing topographic as well as structural fixtures such as highways.

3.3.2 Portals

3.3.3 Surface Buildings and Structures

The present plan calls for the following structures:

Surface structures will consist of; a single building complex containing shops, parts warehouse, bath house, and mine offices; truck scales, weighman office, caretaker dwelling, mine run coal receiver bin, crushing and sizing structure, truck load out bins, stockpile towers, and conveyors to carry coal to storage and load out sites. (See Plate 2-2)

Detailed plans for each structure are attached in Addendum 3.3.4-A Plans.

3.3.4 Coal Handling, Storage and Loading

Coal carried from the mine by conveyor belt to a receiver bin, conveyed to the sizing and crushing plant, the lump removed and diverted to the lump bin, the rest of the oversized crushed, and the coal sized to meet the

various requirements of the different customers, then conveyed to the truck load out bins, or the stockpile area.

3.3.5 Power System, Transmission Lines and Substations

Power will be delivered by U.P. & L. transmission lines at 12,500 V. direct to a substation (See Plate 2-2), reduced to 480 V. for tipple use, and to 240 V. for shop and other use.

Surface power systems, transmission lines and substations will be removed and the areas reclaimed as prior when they are no longer required.

3.3.6 Water Supply System

A water right transfer has been applied for; if this is approved, a cistern system would be utilized. (See Appendix 3.3.6-A)

The system, which carries water from the Mine or Cistern to the loadout area, wash plant,

bathhouses and offices, consists of a 2-inch pipeline and water storage tanks, will be removed. The area will be topsoiled and revegetated. Plans and permit applications are attached in Appendix 3.3.6-A.

3.3.8 Water Diversion Structures

Water diversion structures will be maintained until revegetated areas are well established and stable. Unless an accepted and approved use for these is established after mining, they will be removed as above; graded and revegetated.

3.3.9 Sedimentation Control and Water Treatment Facilities

This facility will be maintained as long as it is required to meet the effluent limitations of applicable federal or state laws for runoff or drainage. When their usefulness is ended, they will be removed and the sites reclaimed as described previously.

3.3.10 Storage, Waste and Refuse Areas

Not Applicable

bathhouses and offices, consists of a 2-inch pipeline and water storage tanks, will be removed. The area will be topsoiled and revegetated. Plans and permit applications are attached in Appendix 3.3.6-A.

3.3.8 Water Diversion Structures

Water diversion structures will be maintained until revegetated areas are well established and stable. Unless an accepted and approved use for these is established after mining, they will be removed as above; graded and revegetated.

3.3.9 Sedimentation Control and Water Treatment Facilities

This facility will be maintained as long as it is required to meet the effluent limitations of applicable federal or state laws for runoff or drainage. When their usefulness is ended, they will be removed and the sites reclaimed as described previously.

3.3.10 Storage, Waste and Refuse Areas

Co-Op will not generate coal refuse. Non-coal waste is addressed under "Surface Facilities."

3.3.11 Transportation, Roads and Parking Areas

Roads and parking areas will be treated in the same manner as other working areas. Any asphalt or treated surfaces will be removed prior to reclamation. Approximately 1.2 miles of access road will be rehabilitated upon completion of mining. See Plate 3-1 and road agreement under Appendix 3.3.11.-A.

The Bear Canyon Road is approximately 1800' long from the gate to the scale house as shown on Plate 3-5. This road is constructed 30' wide and is surfaced with 6" of -3/4" gravel, crowned in the middle as shown on the cross-section. Drainage will be provided along the road by ditches with a minimum depth of 1.8 feet. Erosion protection, such as straw bales at 100' intervals or 6" median diameter riprap on a bed of -1" gravel 6" thick, shall be provided in all areas where velocities are expected to exceed 5 ft. per sec.. Culverts are installed as shown on the drawings; in addition, 2 proposed 30" CMP culverts will be provided as indicated on the map. Culvert inlets will be protected by rock-lining or concrete headwalls. In areas where culverts are placed, at least 30" of headwater depth is available to allow for a variance to allow the 18" culverts to pass the 10 year-24 hour storm event. The culvert on the submitted drawing is to scale, and was installed with a trash

rack to prevent plugging, a rock headwall at the inlet, and rip-rap at the outlet to prevent erosion.

This road will be maintained in such a manner that the performance standards will be met throughout the life of the entire transportation facility, including maintenance of the surface, shoulders, parking and side areas, and erosion control structures for safe and efficient utilization of the road.

Upon completion of the operation and reclamation of the mine site disturbed area, it is anticipated that this portion of the Bear Canyon Road will also be reclaimed. This will occur at approximately the same time as the final removal of the sedimentation pond and diversions on the mine site. The road surfacing material will be removed and either salvaged or disposed of within the pond site and buried. The reclamation will then be accomplished by ripping up the remaining base, spreading the material across the (roadway) disturbed area, and planting the area with the approved seed mix. During this time, all culverts shall be removed and either salvaged or disposed of in an approved landfill, and the natural drainage patterns shall be restored

The mine area and portal access road is approximately 2,112' long. A cross-section and profile of this road is

shown on Plate 3-5. Culvert locations and ditches are also shown on this drawing, as well as on Plate 3-1. This road is primarily used for access to the mine portals and other facilities. The road was originally constructed for access to the old Bear Mine, and has since been widened and fitted with proper drainage controls to protect the environment. The road is designed, used and maintained to meet the requirements of UMC 817.151 - 817.156, and to control or minimize erosion and siltation, air and water pollution, and damage to public or private property.

The road is located along the canyon floor above the stream, and along the stable slope leading to the portals. The overall grade of the road does not exceed 1:v:10h (10%) and the maximum pitch grade does not exceed 1v:6.5h (15%). The horizontal alignment is consistent with the existing topography and with the volume, speed, and weight of anticipated traffic.

As mentioned earlier, the initial road was constructed under pre-law conditions, using the cut/fill side-cast method. A stability analyses was performed on the road by Dames and Moore in 1981 (Appendix 3-F). Their conclusion was that the Bear Canyon Portal Access Road has a stability factor of safety of a minimum of 1.43, and ranges upward to 2.15.

Ditches and culverts have been added to the road to control run-off and safely pass the run-off from a 10 year-24 hour precipitation event. (See Plates 3-1 and 3-5). Ditches shall be maintained at a minimum depth of 1.8 feet, and at least 30" of headwater depth will be maintained at the inlet of the 18" culverts. Culverts are fitted with trash racks to prevent plugging, and buried and compacted a minimum of 30" to prevent crushing. In areas where velocities of run-off exceed 5 fps, erosion protection such as straw bales at 100' intervals or 6" median diameter rip-rap on a bed of 2" gravel/sand 6" thick shall be maintained. Culvert spacing conforms with the requirements of UMC 817.153(c)(z)(i). Rock or concrete headwalls shall be provided at the inlet to all culverts, and rip-rap or other erosion protection shall be provided at the outlet.

The road is surfaced with 4" of $-3/4$ gravel, and is maintained in such a manner that the approved design standards are met throughout the life of the facility. Damage to the road from use or weather events shall be promptly repaired.

This road shall be removed upon completion of the mining operation. The timing and procedure of removal and reclamation is discussed in detail under the Backfilling and Grading Plan in Sec. 3.6.4.

All roads, conveyors and other facilities shall be maintained in such a manner to prevent damage to fish, wildlife, and related environmental values. This is accomplished by:

1. Maintaining hydrologic controls, such as ditches, culverts, diversions and sedimentation ponds to assure that disturbed drainage is conveyed away from undisturbed drainages and either held or cleaned before release.
2. Watering of roads as necessary to reduce fugitive dust.
3. Protection of wildlife within the permit area and reporting of sightings of threatened and endangered species.
4. Contemporaneous reclamation
5. Advocating good-housekeeping practices to reduce the possibility of contamination of surface waters in the area.

3.3.12 Topsoil Storage Piles

Topsoil storage piles are located as shown in Plate 2-2. This material will be stockpiled, protected and seeded to prevent erosion. It will be recovered as needed to carry out the reclamation plan described herein.

3.3.13 Explosives Storage and Handling

Co-Op does not have an explosives storage facility within the permit area, and Co-Op does not anticipate the use of explosives in their normal mining operation. However, in the unlikely event the need arises, the following procedures will be adhered to:

3.3.11 Transportation, Roads and Parking
Areas

Roads and parking areas will be treated in the same manner as other working areas. Any asphalt or treated surfaces will be removed prior to reclamation. Approximately 1.2 miles of access road will be rehabilitated upon completion of mining. See Plate 3-1 and road agreement under Appendix 3.3.11.-A.

3.3.12 Topsoil Storage Piles

Topsoil storage piles are located as shown in Plate 2-2. This material will be stockpiled, protected and seeded to prevent erosion. It will be recovered as needed to carry out the reclamation plan described herein.

3.3.13 Explosives Storage and Handling

Co-op does not anticipate the use of explosives in their normal mining operation. However, in the unlikely event the need arises, the following procedures will be adhered to:

Co-op will adhere to all State and Federal requirements, regulations and mandates applicable to the prescribed use and quantity.

Including, but not limited to:

A federally approved storage facility.

An individual trained and certified in the use of explosives.

All forms, notifications and reporting procedures.

3.3.14 Relocation or Use of Public Roads

There are no public roads within the permit area.

3.3.14.1 Protective Measures

Access roads will be posted with "Authorized Personnel Only", speed and road information signs upon entrance to the property; use of these roads is restricted to authorized personnel. Security is maintained by adequate security personnel.

3.3.14.2 Maps

Plate 3-1 shows the location of all roads in the permit area.

3.3.14.3 Cross-Sections

Plans and cross-sections of the new access road to the portal area are show on Plate 3-1 and Section D-D; Mine Access Road - Construction and Reclamation Plan.

3.3.15 Total Area for Surface Disturbance
During Permit Term

Total area or surface disturbance during the permit term is approximately 10 acres. Individual areas are shown on Plate 3-2.

3.3.16 Additional Area for Surface Disturbance
for Life of Mine

Surface disturbance in addition to what has already

been disturbed is not anticipated.

3.3.17 Detailed Construction Schedule

Construction of coal handling and processing facilities to begin on or about April 1, 1981, scheduled for completion by Aug. 1, 1984. Construction of truck scale and caretaker dwelling to begin on or about Sept. 1, 1982, scheduled for completion by Sept. 1, 1984. Construction of shop complex to begin on or about Aug. 15, 1983, scheduled for completion on or about Aug. 1, 1984.

3.4 OPERATION PLAN

We are entering the first coal seam through an existing mine. The underground mining plans, (roof control, ventilation, barrier pillar, and etc.) are included as Appendix 3-B.

3.4.1 Mining Plans

There are three seams in the Bear Canyon property, the Upper Bear, (upper), the Bear or Blind canyon seam (middle), and the Hiawatha (lower). The old existing mine is in the middle seam. Our projected plan is to

begin mining in the existing mine.

3.4.1.1 Portals, Shafts and Slopes

See Plate 3-1.

3.4.1.2 Mining Methods

Room & Pillar Methods will be employed.

3.4.1.3 Projected Mine Development

See Plate 2-3.

3.4.1.4 Retreat Mining

Underground coal mining procedures follow two basic approaches to the recovery of involved reserves. These are advancing and retreating. Sometimes considerable advantage can be obtained if the entire reserve can be developed and then mined from the most remote area back to the portal. However, this is not generally possible. As a result, development work and

mining are usually accomplished simultaneously as the workings advance into the property. Depending upon the mine layout, this can be an advancing system until development reaches the property boundary, after which it can become retreating and mine back to the portal. Thus, we have an advance-retreat situation for the entire property.

This concept can be applied to various parts of the mine as well - for instance, the main entries, submain entries and even panels.

If mining advances along both sides of any set of entries from their starting point to their termination, the system is advancing; if mining is not started until the entries reach their limit and then begins at the termination point on both sides, the system is retreating. If mining begins at the initiating point of the entries on one side and advances to the end, then moves to the other side and works out to the starting point, it becomes an advance-retreat system.

Frequently this method is attractive, as it permits high production work to proceed in combination with development, creates favorable strata control conditions and, if done properly, facilitates ventilation and enhances safety of the operation. An overall advance-retreat system is projected for this mine. However, where longwall mining is used, the faces will retreat along the panel entries.

Advance-retreat is not to be confused with first and second mining, which applies primarily to room and pillar work. First mining refers to the excavation of rooms and entries, leaving the intervening pillars of coal in place. Second mining can accompany first mining as it advances into a solid block of coal, in which case it is advancing; or it can retreat through an area which has been first-mined. The former is probably the safer and preferred method. It will be used where second mining is applicable in the Bear Canyon Mine.

3.4.1.5 Roof Control, Ventilation, Water
Systems, Dust Suppression, Dewater-
ing and Electrical

a. Roof Control

Roof control is described in the approved roof control plan (Appendix 3B). Basically, mine roofs are bolted on 5-foot centers with either expansion shield or resin grouted bolts not less than 48 inches long. Roof board plates and, if desired, wooden cap pieces are used. Wooden posts and cap pieces can also be installed as needed.

Generally, roof strata are not expected to create major difficulties. The roof of the coal seams are predominately sandstone; it provides good anchorage for roof bolts.

Floor strata throughout appear to be adequate and should create few problems. Some minor floor heaving may occur.

b. Ventilation

A fan with a combined capacity of 850,000 ft.

Table 3-1
Coal Reserves - Bear Canyon Mine

Coal Seam	Surface Acres of Seam	Avg. Thickness of Coal	Coal Reserves	
			In Place	Recoverable
Bear Canyon Seam	750	10'	13,065,500	6,532,500
Hiawatha Seam	800	5'	6,968,000	3,484,000
TOTAL			20,033,000	10,016,500

3/min. supply air to the underground mining units.

Intake air is carried in the entries on one side of a set, while return air is carried through the entries on the other side. Air is directed through the mine by stoppings, doors, overcasts, regulators and brattice cloth. After sweeping the working faces of each section the air is directed into the return aircourses and out of the mine. Little or no methane gas is generated in any of the Blackhawk seams.

c. Dewatering, Water Systems and Dust Suppression

Water generated in the mine is collected in sumps and used at the mine. Some water from the roof is collected and pumped directly outside for use in the bathhouses and as drinking water in the offices. Tests for potability are made bi-monthly. Water also serves for sprays on the machines at the working faces,

on the coal at belt heads and transfer points and for storage in the 5,000 gal. underground reservoir for the wash plant. Presently water generated is used or contained at the mine; there is no discharge to surface waters. However, a National Pollution Discharge Elimination System (NPDES) permit has been obtained in case increased volumes are encountered.

d. Electrical

Electric power is currently purchased from a public utility at 12,500 V. and distributed over the surface of the property through company-owned overhead and buried transmission lines. At the mine portals, company substations convert the power to 13,200 V. for underground distribution and 440/220/120 V. for use on the surface.

Underground distribution voltages are transformed to 440/220/120 V. at a power center for use by the machines. All circuits are isolated by switches and protected by adequate circuit breakers and overload devices as required by law.

3.4.2 Barrier Pillars

Pillars of coal generally are left underground to protect a surface or underground feature which must be maintained and protected for the life of the mine (main entries) or permanently (oil or gas wells). The size of some is specified by law; others are designed by the operator to provide the protection needed. Those along the outside property boundary will be 100 feet wide. Shaft pillars will be large enough to prevent damage by subsidence, outcrops will be protected by a minimum of 200' barrier pillars.

3.4.2.1 Protection of Oil, Gas and Water Wells

There are no active or abandoned oil or gas wells within the permit boundary.

3.4.2.2 Protection of Manmade Features (Surface & Subsurface)

Manmade features and structures do not exist on the mineable portion of the permit area. There are some forest trails but they are all located beyond the coal outcrops. Maxi-

mum coal recovery in the controlled uniform manner planned for this mine should result in even surface subsidence with minimum disturbance.

3.4.2.3 Protection of Natural Surface

Structures & Streams

Co-Op is committed to maintain a minimum of a 100' barrier pillar to the outcrop to minimize detrimental impacts to nesting raptor in the event of an escapement failure. The stream channels will be safeguarded through protective berms and sediment controls on all disturbed waters.

3.4.2.4 Property Boundaries

Area boundaries of individual leases and fee property are shown in Plate 2-1. Total area covered by this permit is that enclosed by the heavy outside line. Protection of these lines and property adjacent to the permit area is provided by continuous barrier pillars 100 feet wide or wide enough to prevent subsidence across the boundary resulting from angle of draw.

3.4.2.4.1 Buildings Within 1,000 Feet of Permit Area

No buildings lie within 1,000 feet of the permit area.

3.4.2.4.2 Existing Public Roads

The main access road to the property is a public road. It provides access from Huntington Canyon to the mine. Access beyond the gate entrance to the mine is controlled by the company and the road is posted with no trespassing, speed control and general traffic control signs. When mining has been completed, the road would be reclaimed.

3.4.2.5 Outcrop Protection

In most areas, the coal outcrops are buried. That is, they are not visible from the surface, either because they are covered to some depth with overburden or because, in many areas, the coal has been burned for some distance from the surface. Where neither of these situations exist, routine tests of the coal may show that it has been "weathered" or "oxidized" and mining would be stopped within 200 feet of the outcrop.

3.4.2.4.2 Existing Public Roads

The main access road to the property is a public road. It provides access from Huntington Canyon to the mine. Access beyond the gate entrance to the mine is controlled by the company and the road is posted with no trespassing, speed control and general traffic control signs. When mining has been completed, the road would be reclaimed.

3.4.2.5 Outcrop Protection

In most areas, the coal outcrops are buried. That is, they are not visible from the surface, either because they are covered to some depth with overburden or because, in many areas, the coal has been burned for some distance from the surface. Where neither of these situations exist, routine tests of the coal may show that it has been "weathered" or "oxidized" and mining would be stopped within 100 feet of the outcrop.

3.4.3 Conservation of Coal Resource

Maximum recovery of this reserve will be practiced from the time Co-op Mine begins mining on this property. In addition, mining plans have established mine layouts to reach all areas of the property and, at the same time, by the adoption of pillar recovery techniques in room and pillar work, raise the percentage of recovery of reserves in the mining area to the maximum. Whereas room and pillar methods without pillar mining recover approximately 50% of the coal, the above procedures show recovery of 80% to 90% in the mining area or close to 60% overall.

Seams will be mined to a minimum thickness of 5 feet which is the lower limit for operation of the equipment that must also mine to full seam heights of 10 feet or more.

Barrier pillars to protect main and submain entries have been made large enough (200 feet or greater) to assure preservation of the entries for their useful life. When the area

they service is mined out, the entry pillars will be recovered on the way out.

3.4.3.1 Recovery Factors

Various factors and combinations of factors affect the amount of coal recovered from any given area of a reserve. Natural conditions such as incompetent roof strata, soft floor strata, water, depth of overburden and residual tectonic forces in the strata influence operating procedures and their effectiveness. Manmade conditions including mine layout, mining sequences and operating procedures can significantly influence the amount of overall recovery.

Present indications of natural conditions within the permit area are encouraging. Roof and floor conditions are generally satisfactory with the exception of some faulting, which may create difficulties.

Burned areas of coal along the outcrops also are not definitely delineated. This will affect the total in-place reserve estimate if

such burning has penetrated the seam to a greater distance than anticipated.

Co-op Coal Company's engineers have assured recovery of the highest percentage of in-place reserves by adoption of sound engineering principles in design and strict observance of these principles in operation.

3.4.3.2 Projected Maximum Recovery and Rate

The mining systems adopted by Bear Canyon Mine for use on this property will assure maximum recovery of the reserve with thorough application of the most advanced current mining technology and equipment. Pillar recovery in room and pillar work follows procedures that assure thorough and uniform removal of the coal to maintain effective roof control over the working and adjacent areas.

3.4.3.2.1 Recoverable Reserves in the Permit Area

Table 3-1 in Section 3.4.1 shows the reserves in each seam determined from our most recent data.

Co-Op Coal Company plans to extract all coal reserves, to the extent allowed by economics, safety conditions and prudent mining practice, from the lands it controls.

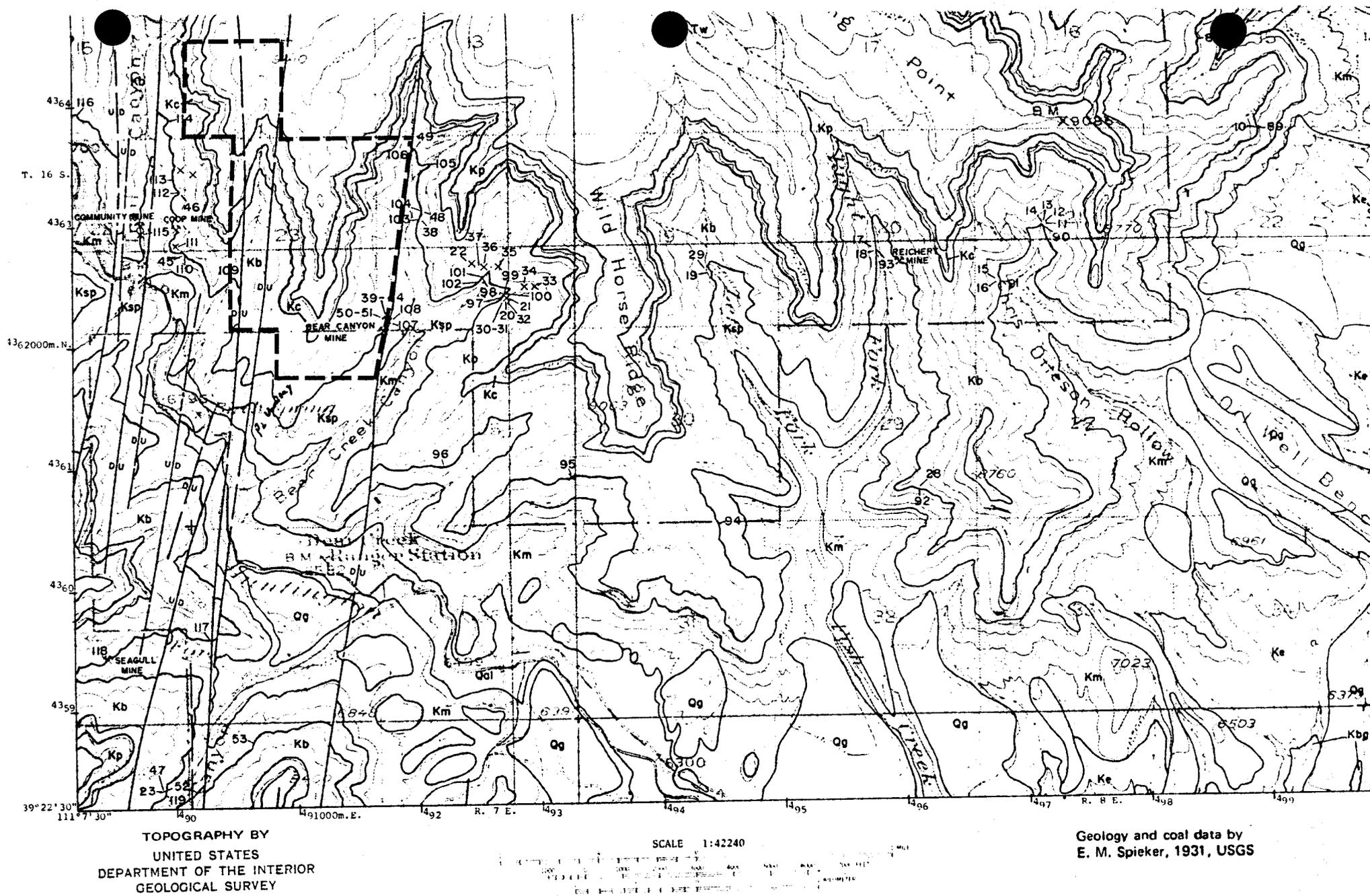
The "upper seam" in this area is the Upper Bear Canyon Bed, which is probably just a split off the main Bear Canyon Seam in which the mine is located. This seam lies only 15' to 20' above the Bear Canyon Seam at the mine-site, and is evidenced only by a ledge and some burning. Speiker and Doelling have both referred to a probable upper split of the Bear Canyon Seam in this area, likely with a small lateral extent and little, if any, mining potential. An additional seam outcrops about 200' above the mine portals; however, this is one of the "upper beds" listed on Table 1, page 6-15, and again, is not considered to have any economic potential due to limited lateral extent and extreme burning of seams in this horizon (Doelling p. 6-14).

Due to the burning, questionable lateral extent and inability to trace these upper seams (or splits), and due to the close proximity of the Upper Bear Canyon split to the main bed

presently being mined, there are no plans to enter or mine these upper seams.

These seams (or splits) are not considered as mineable reserves; therefore, the seam presently being mined is considered the uppermost, mineable seam in the area. This is consistent with mining practices recommended for multiple seam areas.

The reserves shown on Table 3-1 reflect mineable coal only in Bear Canyon and Hiawatha Seams. These reserve estimates are based on numerous outcrop measurements as well as in-seam measurements, both in Bear Canyon and Trail Canyon. (See Fig. 3.4-1 thru 3.4-4). Based on these measurements, and using a 2500' radius of influence from a known coal height, it was determined that an average coal height of 10' was an acceptable (although conservative) figure to use for the Bear Canyon Seam. By the same method, an average height of 5' was determined for the Hiawatha Seam. The reserves in place were then calculated by multiplying the number of acres of mineable coal by 1742 tons/acre ft. (80 lbs./cu. ft. coal in place) times the average coal height for



PERMIT AREA - - - - -

Coal and geology map, Hiawatha NE quadrangle

FIGURE 3.4-1

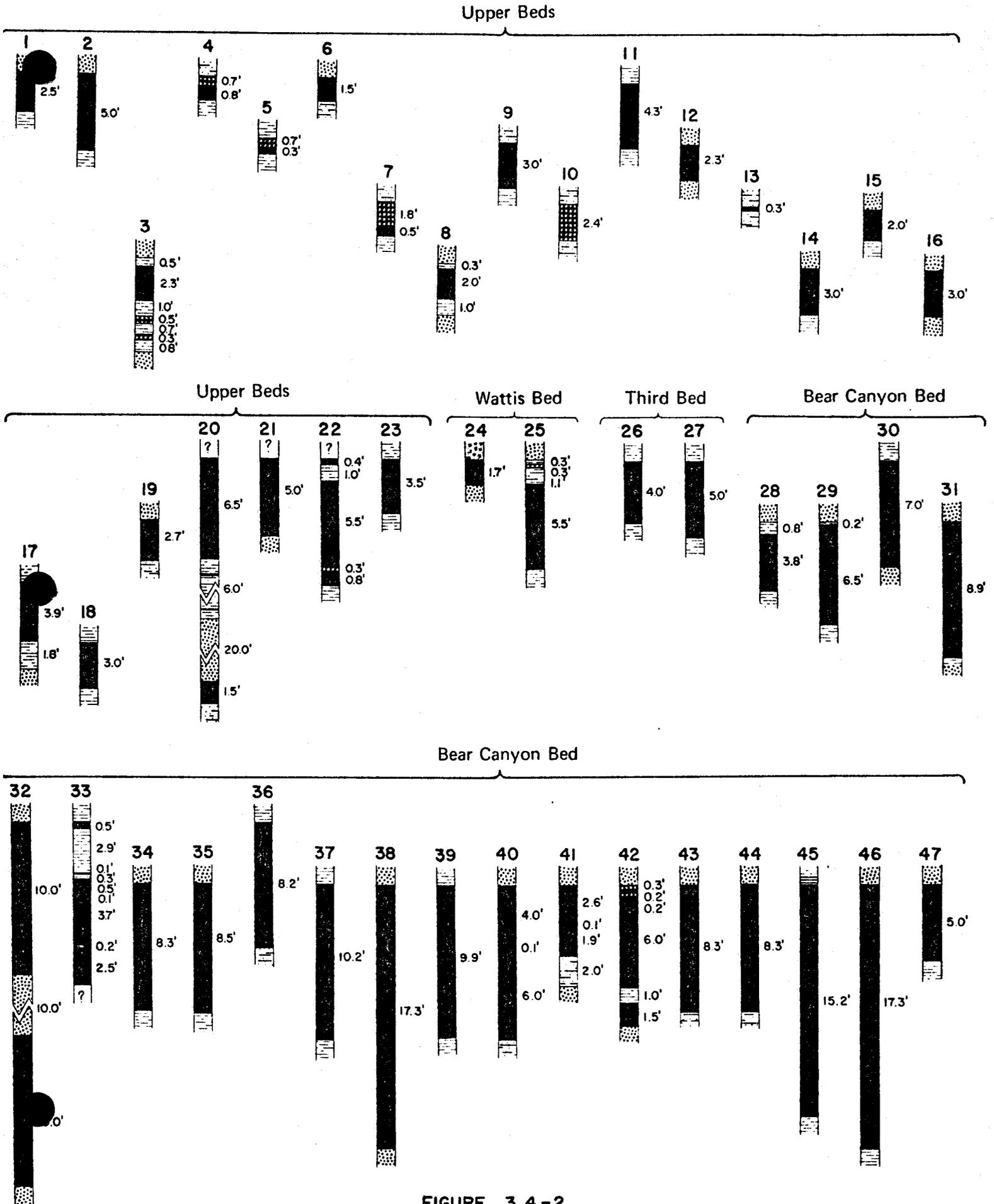
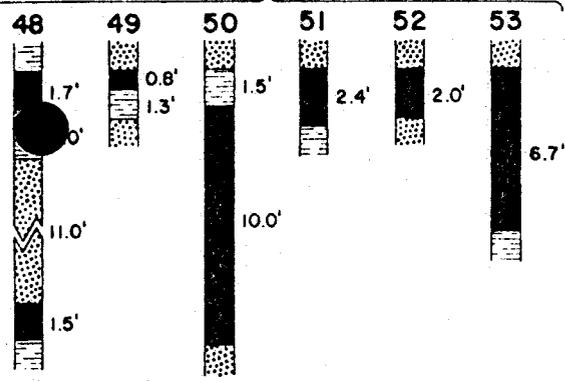
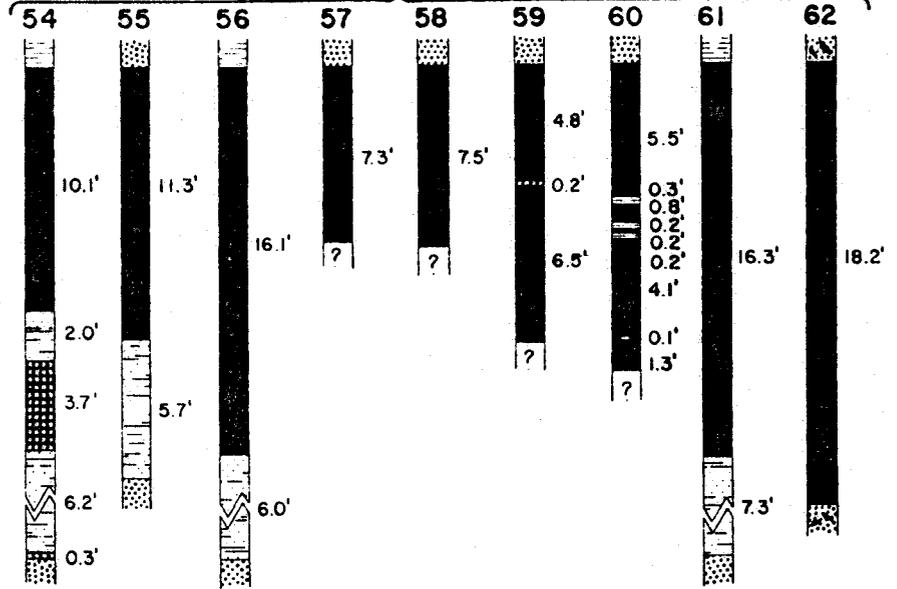


FIGURE 3.4-2

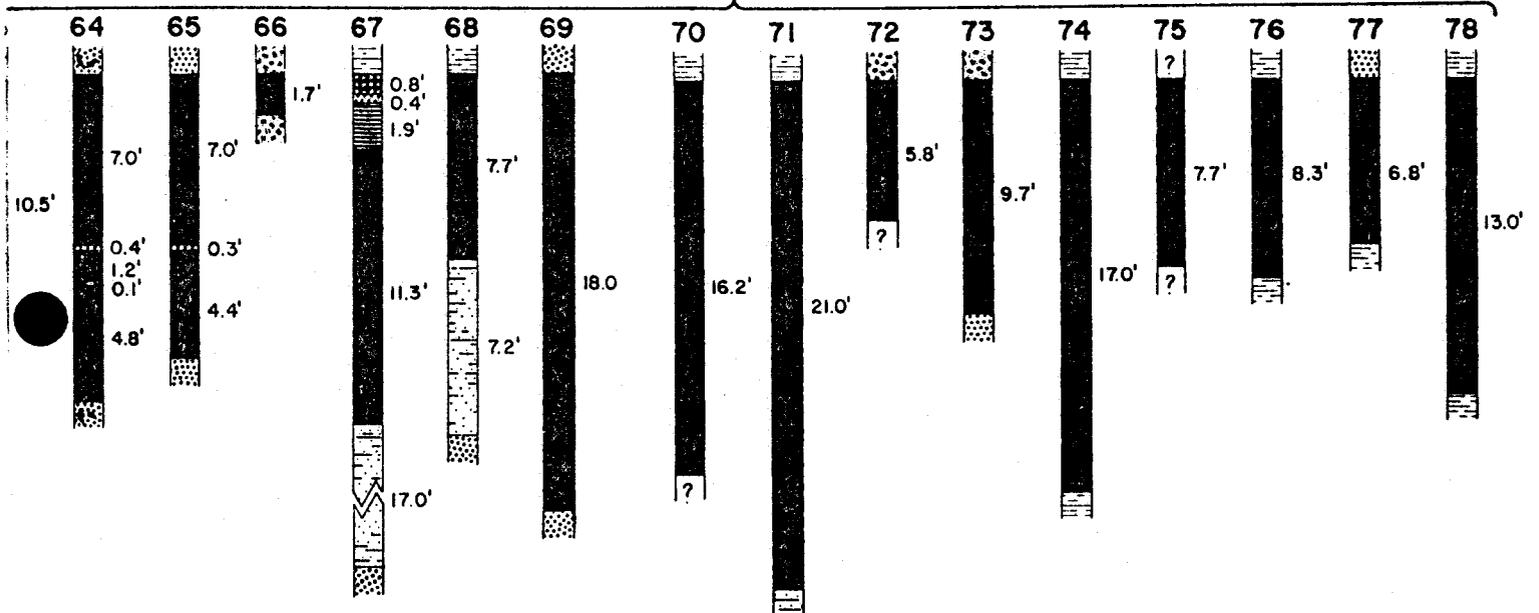
Blind Canyon Bed



Hiawatha Bed



Hiawatha Bed



Hiawatha Bed

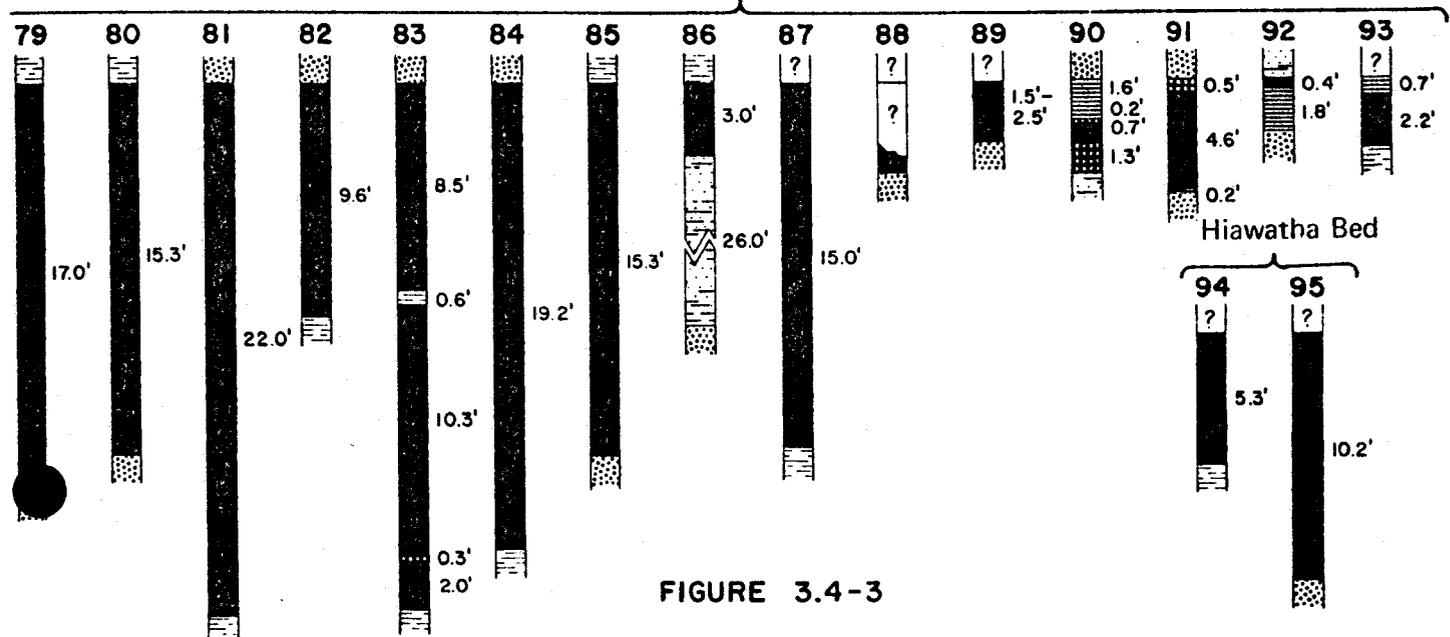


FIGURE 3.4-3

each seam. The recoverable coal reserves was then estimated by multiplying the in-place reserve by a recovery factor of 50%. A 60% recovery factor could be used based on actual recovery experience by Co-Op Mining Company in the seams in this area; however, the 50% factor was used to assure the reserve estimate is conservative.

Co-Op plans to enter the Hiawatha Seam at a later date, although , at this time it is not known precisely when that will occur, or at what location. It is possible that access to the lower Hiawatha Seam may prove to be most economic through new portals in the outcrop; however, as mining progresses, and fault locations and displacements are better delineated, it may become even more feasible and less environmentally destructive to enter the lower seam through rock tunnels. In any event, Co-Op will commit to provide the Division with complete plans for entering the lower seam prior to taking such action. These plans will be submitted as a modification to this MRP and will be submitted in a timely manner to allow for review and approval prior to com-

mencing work on entering the Hiawatha Seam.

3.4.3.2.2 Recovery Rate

Mining recovery of the above reserves is projected to be 60% of the total inplace raw coal tonnage.

The operation will produce 200,000 tons of raw coal per year with at least 3 miner sections working 240 days. This is 833 tons per day with 2 production shifts operating.

This rate of production (considering a lower rate during the initial buildup years plus the tonnage still to be mined in the area of old workings) will make the projected mine life 50 years.

3.4.3.2.3 Justification for Mining Engineering Techniques

Co-op Coal Company plans to extract all coal reserves, to the extent allowed by economics, safety conditions and prudent mining practice, from the lands it controls.

3.4.3.2.2 Recovery Rate

Mining recovery of the above reserves is projected to be 60% of the total in-place raw coal tonnage.

The operation will produce 200,000 tons of raw coal per year with at least 3 miner sections working 240 days. This is 833 tons per day with 2 production shifts operating.

This rate of production (considering a lower rate during the initial buildup years plus the tonnage still to be mined in the area of old workings) will make the projected mine life 50 years.

3.4.3.2.3 Justification for Mining Engineering Techniques

Mining techniques and operating procedures adopted by Co-op for this property are based upon current engineering principles and modern equipment in relation to existing knowledge of the property, natural conditions and production desired. Approaches are not those of the Co-op staff alone; they are the result of consultation with reputable consulting mining engineers of this country as well, all of whom are familiar with western U.S. coal conditions.

Mine layout has considered the seam condition and minable areas so that all recoverable coal can be reached. Main entries are designed for maximum protection throughout their life with adequate capacity to supply ventilating air to working areas as well as trouble-free haulage systems for coal, men and materials.

3.4.3.2.4 Justification for Non-Recovery

Only that coal required by law to be left in place and that which is economically or physically unrecoverable because of adverse natural conditions or safety considerations will not be recovered.

Mine layout assures that all areas of coal within the permit boundaries are accessible to mining.

Even in the suspected area of faulting, plans have been made to locate panels between and parallel to the faults for maximum recovery.

3.4.3.2.5 Access to Future Reserves

Not Applicable

3.4.4 Economic Validity of Operation

Economic information provided in this application is in compliance with OSM and DOGM regulations 782.16 (b) AND (784.13(b)(6)). Reclamation costs are discussed in Section 3.6.7.

3.4.5 Equipment Selection

Co-op Mining Company will utilize the equipment described in the following list for its mining operation and will acquire any additional equipment as required to maintain a sound mining operation.

3.4.5.1 Surface Equipment

Vibrating screens
crushers
conveyors
Front end loaders
road grader
crawler tractor
fork lift

3.4.5.2 Underground Equipment

continuous miner
electric shuttle cars
belt line with feeder-breaker
roof bolter
scoop
service vehicle
personel carrier
boss buggy
rock dusters
water pumps
supply tractor
stopper
power center

3.4.6 Mine Safety, Fire Protection and Security

The mine complies with all federal, state and local

regulations on safety, fire control and security in underground and surface areas, as discussed below.

3.4.6.1 Signs

Signs used on the property are constructed of suitable material, employ uniform and standard designs and conform to local ordinances and codes. They will be maintained during the conduct of all activities to which they pertain. The gate at the main entrance will be posted with a sign containing the company name, address, telephone number and identification number.

Surface blasting is not planned at this underground mine. If such blasting becomes necessary for some reason, "Blasting Area" signs will be posted on access roads and on public roads within 200 feet. In addition, the blasting area will be conspicuously flagged in the vicinity of charged holes. All other requirements of the Utah DOGM mining regulation pertaining to surface blasting will also be satisfied.

In the event that surface blasting becomes

necessary, the entrance to the property from the public road will be posted with a sign stating, "Warning! Explosives in Use" and explaining the blast warning and all-clear signals and the marking of blast areas.

Topsoil stockpile areas are marked with "Topsoil" signs.

Access roads will be posted with speed, direction and traffic information signs.

3.4.6.2 Fences and Gates

The entrance to the area on the public road will be fenced off with a gate across the road. Because of the rugged terrain, additional fencing is not necessary.

3.4.6.3 Hazardous and Flammable Materials Contingency Plan

Co-op Mining Company has reviewed the Environmental Protection Agency's list of hazardous material issued under the Resource Conservation and Recovery Act. It is felt at this

time that the operation does not use or generate hazardous materials. Flammable materials are stored according to State Fire Marshall regulations.

3.4.6.3.1 Acid-Forming

This mine produces no acid-forming materials. The coal samples in the permit area are representative of all coal material on the property, and are not acid-forming.

3.4.6.3.2 Toxic Forming

This mine produces no toxic-forming materials. However, small amount of toxic materials are stored on-site. These materials will be in an area bermed and contained.

3.4.6.3.3 Flammable (Fire Protection)

The Bear Canyon Mine anticipates no long term storage of coal and thus, the risk of coal storage piles burning is very remote. However, in the event that routine monitoring and inspection reveals ignition to be imminent (hot spots) material in that area will be excavated, removed to a safe place and spread out to stop further heating.

Combustible non-coal materials such as paper, used oil and wood will be collected routinely, transported to an approved sanitary land fill and disposed of.

Diesel fuel and gasoline are stored in tanks with capacities of 1,000 and 5,000 gallon. The tanks are located and positioned so as not to affect any slope or shaft opening. The storage tanks will be protected from corrosion by cathodic coat protection or other effective methods considered most compatible with existing soil conditions. The tanks will be inspected to ensure no leakage into the surrounding soil. The tanks are located so as any spillage runs directly to the sediment pond. See Plate 2-2. Loose coal and the coal faces are sprayed with water prior to and during cutting by the water sprays on the machines. In addition, routine periodic (20-minutes) inspection and tests are made for methane gas during this operation.

Buildings and structures are protected against fire by the location of adequate numbers, sizes and types of fire extinguishers in compliance with regulations. Water is available from the surface water distributing system.

3.4.6.3.3.1 Facilities

Discussed above under Section 3.4.6.3.3

3.4.6.3.3.2 Coal Stockpiles

Monitored daily.

Refuse Piles

Co-Op does not produce processed coal and does not produce coal refuse.

3.4.6.3.4 Explosives

This is an underground mine using continuous mining methods which does not necessitate the need for blasting. In the event blasting would be necessary it would be in accordance with existing federal and state laws.

Buildings and structures are protected against fire by the location of adequate numbers, sizes and types of fire extinguishers in compliance with regulations. Water is available from the surface water distributing system.

3.4.6.3.3.1 Facilities

Discussed above under Section 3.4.6.3.3

3.4.6.3.3.2 Coal Stockpiles

Monitored daily.

Refuse Piles

Not Applicable

3.4.6.3.4 Explosives

This is an underground mine using continuous mining methods which does not necessitate the need for blasting. In the event blasting would be necessary it would be in accordance with existing federal and state laws.

If surface work, such as site preparation which requires blasting, it will be done in accordance with applicable federal and state regulations for surface work.

3.4.6.4 Compliance with Regulations

Co-op Mining Company will comply with all federal and state regulations pertaining to the operation of this mine within the permit area.

3.4.6.4.1 Routine Reports

All routine reports pertaining to the operation will be submitted to the proper governmental agencies, in particular those required under CFR 30 Chapter 75.1800-1808.

3.4.6.4.2 Reporting of Accidents

All accidents will be reported to MSHA in accordance with CFR 30 Chapter 1 Subpart B par. 80.1080.12; Subpart C par.

80.20-80.24; and Subpart D par. 80.30-80.33. Such reporting will also include the Utah DOGM.

3.4.6.4.3 Corrective Action Accidents

Immediately after an accident, an on-site investigation will be initiated by company safety personnel accompanied by federal and state officials if required. The investigation and report will determine the cause of the accident, contributing factors and methods for prevention. Corrective action will be taken immediately. All data will be reviewed with mine personnel at their regular safety meetings and pertinent data will be incorporated into safety training classes.

Federal, state and other appropriate officials will be notified of all accidents in accordance with current regulations.

3.4.6.4.4 Good Housekeeping

The company believes that neat, clean

working areas are conducive to greater safety, pride and productivity. Its practice will be therefore, to require that supplies and materials be stored neatly in designated areas, that trash be cleaned up daily and transported to control areas for disposal and that spillage of coal or other materials be reduced to a minimum. Inadvertent spillages will be removed as soon as possible.

3.4.6.4.5. Mine Maps

Maps of underground section working will be updated by Section Foremen using their own measurements of face advance and width. Sections will be regularly and accurately surveyed by the Salaried Personnel and all mine maps will be kept up to date and filed. These records will be reported to the appropriate agencies as required by current regulations.

3.4.6.4.6 Mine Records

Mine operating records will be maintained daily to show progress, production, workforce, conditions, etc. These records will be maintained in the mine files and will be accessible to authorized personnel when necessary.

3.4.7 Operations Schedule

The mine operating schedule as outlined is, of course, subject to change from a variety of causes, i.e., strikes, changes in market, underground mining conditions, surface transportation, etc. However, the following data show the projected performances.

3.4.7.1 Annual Production for Permit Time

Annual production; 200,000 Tons, increased to 400,000 Tons, (projection), by the year 1995.

3.4.7.2 Operating Schedule

The mine will operate 240 days per year, 5 days per week to produce the above ton-

3.4.6.4.6 Mine Records

Mine operating records will be maintained daily to show progress, production, workforce, conditions, etc. These records will be maintained in the mine files and will be accessible to authorized personnel when necessary.

3.4.7 Operations Schedule

The mine operating schedule as outlined is, of course, subject to change from a variety of causes, i.e., strikes, changes in market, underground mining conditions, surface transportation, etc. However, the following data show the projected performances.

3.4.7.1 Annual Production for Permit Time

Annual production; 200,000 Tons, increased to 400,000 Tons, (projection).

3.4.7.2 Operating Schedule

The mine will operate 240 days per year, 5 days per week to produce the above ton-

ages. It will use a total of 30 + miners working 3 shifts per day and producing 400 + ton per shift per unit.

3.4.7.3 Employment

Total personnel will be 35, 5 of whom will be salaried and 30 hourly employees.

3.4.8 Mine Permit Area

3.4.8.1 Acreage and Delineation

The permit area comprises approximately 900 acres located and outlined as shown on Plate 2-1.

The permit area is made up of properties owned in fee by COP Development Company.

3.4.8.2 Mining Sequences

Plate 2-3 show the mining sequence on the property each year for the first five years and each five years thereafter for the life of the mine.

3.4.8.3 Acreage in Each Scheduled
Sequence

<u>YEAR</u>	<u>ACREAGE</u>
1984	<u>11</u>
1985	<u>11</u>
1986	<u>11</u>
1987	<u>11</u>
1988	<u>13</u>
1989-1993	<u>65</u>
1994-1998	<u>65</u>
1999-2003	<u>65</u>

3.4.9 Mine Plan Area

The "mine plan area" is defined for the purposes of this section to consist of the permit area.

The permit area has been discussed previously (Section 3.4.8).

The tentative acreages to be disturbed for each activity described above are as follows:

Mine Shop Area	.75 acres
Mine Access Road	2.15 acres
Portal and Pad Areas	5.1 acres
Sediment Treatment Area	.5 acres
Scales Area	1.42 acres

3.5 ENVIRONMENTAL PROTECTION

3.5.1 Preservation of Land Use

COP Development Company, which is the legal owner of affected surface operations, anticipates that the postmining land uses of the affected areas will remain the same as the premining land uses. These uses are identified in Chapter 4. State or local governments have not proposed any changes in land use following reclamation.

Once operations in an area have ceased, the disturbed area will be scarified, sloped and seeded before the next growing season. The site will be reseeded with a mixture of seed such as mountain varieties of wheatgrass, hard fescue, or species

specified by the Division of Oil, Gas, and Mining. Grass will be maintained by fertilization or reseeding until stable up to five years. (See Interim Reclamation Plans - Appendix 3-C, and Final Reclamation Plan Sec. 9.5). Co-Op is committed to total reclamation of all disturbed areas. The proposed mine access roads to the mine portal will be reclaimed and revegetated. This will accomplish a dual purpose of controlling runoff and revegetating the hill-sides with vegetation comparable to existing growth.

Co-op Coal Company will cooperate with all state and local land use plans and programs.

Emery County zoning ordinances classify the Bear Canyon Mine plan area as Industrial Mining.

3.5.1.1 Projected Impacts of Mining
on Current and Future Land
Use

The management objectives and the impacts from the Bear Canyon Mine per-

4/26/84

specified by the Division of Oil, Gas, and Mining. Grass will be maintained by fertilization or reseeding until stable up to five years. (See Interim Reclamation Plans - Appendix 3-C.

The proposed mine access roads to the mine portal will be reclaimed and revegetated. This will accomplish a dual purpose of controlling runoff and revegetating the hill-sides with vegetation comparable to existing growth.

Co-op Coal Company will cooperate with all state and local land use plans and programs.

Emery County zoning ordinances classify the Bear Canyon Mine plan area as Industrial Mining.

3.5.1.1 Projected Impacts of Mining
on Current and Future Land
Use

The management objectives and the impacts from the Bear Canyon Mine per-

taining to these objectives are described in detail in Chapter 4.

Impacts

Approximately 10 acres of soil will be disturbed within the permit area. This includes loadout areas, offices, shops and substations, roads, portal areas and the topsoil storage area.

The reduction in desirable plant species will temporarily reduce forage production and wildlife capacities.

The short-term negative impact of vegetation removal would be outweighed by the positive impacts of revegetation and improved fire protection and prevention.

Wildlife in the area will adapt to the operation in a relative short time as witnessed by existing coal operations. Proposed construction may temporarily disrupt wildlife if human disturbance is not kept to a minimum. These

topics are discussed in detail in the Wildlife Report, Chapter 10.

3.5.1.2 Control Measures to Mitigate Impacts

Reclamation activities in the permit area will be directed toward minimizing the overall impact of coal mining. This can be accomplished by careful planning of the disturbed areas that must be later reclaimed.

The mine surface operation facilities proposed, will be returned to a wildlife/ grazing habitat at the conclusion of the mining operation. The premining and proposed postmining uses are therefore identical for all areas. (Chapter 4)

The initial step in the reclamation plan is to seal all large diameter openings. This will be accomplished by backfilling these openings with non-combustible material. The seals will be designed so that

mine drainage, if any, will not enter surface water bodies. For a more detailed description of the sealing of openings see Section 3.6.3.1, Sealing of Mine Openings, Drill Holes, Wells, etc.

The next step in reclamation would be the removal of all surface structures, equipment and road blacktop. Next, all solid waste generated in abandonment operation will be collected and removed from the reclaiming areas. Additional information concerning this aspect of the reclamation plan is presented in Section 3.6.3.2., Removal of Surface Structures.

Backfilling of the subterranean portion of the silos, holes and depressions will be the next reclamation activity. Once backfilling is completed, drainages will be returned and disturbed areas will be graded and recontoured. A detailed description of this reclamation phase is

found in Section 3.6.4, Backfilling and Grading Plans.

A suitably permanent and diverse vegetative cover, as required by the appropriate land management agency, will be established on all affected land. (See Sec. 9.5 and 10.5 for details).

Land reclamation will take place as soon as possible after surface disturbance.

All cut and fill slopes resulting from construction of the access road will be stabilized and revegetated at the first seasonal opportunity. Areas occupied by support facilities such as roads, office buildings, shops and coal handling structures will not be reclaimed until conclusion of the mining operation.

3.5.2 Protection of Human Values

There are no public parks nor historical sites worthy of preservation in the permit area.

3.5.2.1 Projected Impact of Mining on Human Values, Historical and Cultural

4/26/84

The projected impact of mining on cultural resources can be direct or indirect. Direct impacts are a direct consequence of project development and operation, such as earthmoving. Indirect impacts arise from activities that are not strictly part of the project development and operation, such as changes in local population.

3.5.2.2 Control Measures to Mitigate Impacts

Co-Op is committed to take all necessary steps to remedy any adverse impacts from slides and to notify the Division by the fastest available means to safeguard human and environmental values.

3.5.3 Protection of Hydrologic Balance

Co-op Mining Company will conduct all mine site operations in such a way as to minimize potential impact to surface and ground water quality.

Water originating in or flowing through disturbed areas will be collected by a drainage control system and the additional suspended material allowed to settle in a sediment treatment facility before discharge into the natural

drainage system. No permanent changes to the natural drainage channels are anticipated. Postmining land use will be similar to premining use, and the hydrological aspects of the reclamation effort have been planned accordingly.

Present mine portals are designed to ensure that water will not be discharged from the mine, once the water right issue is resolved and the present discharge will be utilized.

In compliance with 30 CFR 75.1711-2, seals will be installed in all entries as soon as mining is completed and the mine is to be abandoned. The seals will be located at least 25 feet inside the portal mouth entry.

Culinary water usage at the mine site will qualify as a public water supply and will meet State of Utah primary and secondary water standards.

3.5.3.1 Projected Impacts of Mining on the Ground Water Hydrologic Balance

Geology largely controls the occurrence and quality of water in any region. Since the region surrounding the mine plan area consists of the same geologic formation, the effects of mining on hydrologic balance should be the same throughout the area. Further, it can be assumed that the impacts from future mining will be the same as the minor impacts that have resulted from the mining of the past 50 years.

The existing hydrologic balance will be discussed in detail in Chapter 7, Hydrology.

3.5.3.2 Control Measures to Mitigate Impacts

No significant impacts to the ground water system are expected from the mining operation. The ground water monitoring plan, discussed in Section 3.5.3.3, will provide

a means to follow the possible effect of the mining activities on the ground water system.

If mine water is encountered at the working face, which on an areawide basis generally yields less than 10 gal./min. per active face, it will be collected in the face area and pumped to impoundments located within the mine. The impoundments will be designed to allow sufficient time for suspended solids to settle. If necessary, mechanical devices will be installed to remove grease and oil that might be present in the water before it is used for dust suppression.

The construction of proposed surface facilities will result in increases of the suspended solids concentration increases, however are expected to be temporary because of compliance with the regulatory requirements that sediment control features be provided for all areas of surface disturbance.

Water quantity will remain generally unaffected due to the geological conditions in the mine area. Therefore, there will be little or no impact, adverse or otherwise, on the hydrologic system.

State and federal regulations (30 CFR 817.54 and UMC 817.54) require that an alternate water supply be provided to replace any water supplies in the area, Co-op Mining Company will provide this alternate supply if needed. Several alternate sources of supply exist:

- 1) Water from springs could be piped to the affected site.
- 2) Water rights could be purchased for springs damaged by Co-op Mining Company.
- 3) A well could be drilled at the affected site to provide an alternate supply (since artesian conditions do not exist).

Water quantity will remain generally unaffected due to the geological conditions in the mine area. Therefore, there will be little or no impact, adverse or otherwise, on the hydrologic system.

State and federal regulations (30 CFR 817.54 and UMC 817.54) require that an alternate water supply be provided to replace any water supplies in the area, Co-op Mining Company will provide this alternate supply if needed. Several alternate sources of supply exist:

- 1) Water from springs could be piped to the affected site.
- 2) Water rights could be purchased for springs damaged by Co-op Mining Company, or, alternate water shares could be substituted. (See App. 3.3.6., Proof of Ownership).
- 3) A well could be drilled at the affected site to provide an alternate supply (since artesian conditions do not exist).

4/26/84

- 4) Water produced in the mine could be piped to the affected site.
- 5) Water shares presently owned could be transferred.

Alternative 4 may mean treating of poorer quality water and pumping to overcome elevation differences.

In the unlikely event that mining adversely affects a water source, the Co-op Mining Company will select an alternative after considering all possibilities of each site-specific circumstance.

3.5.3.3 Ground Water Monitoring Plan

An ongoing ground water monitoring program will be conducted.

3.5.3.4 Projected Impacts of Mining on the Surface Water Hydrologic Balance

The occurrence and quality of water in any region is highly controlled by geology. The majority of the mine plan area is strong structurally and consists of the same geologic formations. It is presumed that mining activities will have little adverse impact on the area hydrologic system.

3.5.3.5 Control Measures to Mitigate
Impacts - Surface Water

Runoff from all disturbed areas will be passed through sediment treatment facilities. Any discharge from facilities will be monitored in accordance with NPDES permit standards and state and federal regulations.

The effects of the mining operation on the surface water system will be analyzed through the surface water monitoring plan described in the next section. In the unlikely event that monitoring shows that the surface water system is being adversely

TABLE 3-6

COMPREHENSIVE WATER QUALITY ANALYTICAL SCHEDULE

FIELD MEASUREMENTS

Discharge

pH

Temperature, Air

Temperature, Water

LABORATORY MEASUREMENTS

Iron, total

Magnesium, total

Total Dissolved Solids

Total Suspended solids*

*Surface waters only

affected by mining activities, additional steps will be taken to rectify the situation in consultation with state and federal regulatory agencies.

3.5.3.6 Surface Water Monitoring Plan

An ongoing hydrologic monitoring program will be conducted.

As required, water quality data collected from surface water monitoring stations will be submitted within 60 days of the end of each quarter, depending upon the speed of the laboratory analyses.

3.5.4 Preservation of Soil Resources

Co-op Mining Company is prepared to meet the requirements specified by 30 CFR 784.15. Backfilling, soil stabilization, compacting, grading and any other necessary operations will be performed when necessary with the best technology available, as approved by the regulatory agency. Section 3.6, Reclamation Plan, provides a detailed discussion