

5M CORPORATION
Hurricane, Utah

El Chaperal

- (a) GENERAL MINING PLAN
John Henry Mine
- (b) "Notice of Intentions to
Commence Mining Operations"

43-025-004 June 9, 1975

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635-9996



MINERALS
MINING
MILLING
MELTING

and
MANUFACTURING
of

METAL PRODUCTS - MINI MILLS - MINING EQUIPMENT

I N C O R P O R A T E D

June 9, 1975

State of Utah
Department of Natural Resources
Division of Oil, Gas, and Mining
1588 West North Temple
Salt Lake City, Utah

Dear Sir:

The attached application "Notice Of Intention To Commence Mining Operations", MRA Form 1, is accompanied by a short narration taking the form and paragraph notation of the proposed draft of Rule M, commencing with Page 4, Rule M-3(1), and extending through Page 7.

Maps and plans attendant to this application are set forth as Enclosures to the Mining Plan for the John Henry Mine, also attached herewith. Reference to these maps and plans is designated in both the narration and in the accompanying application. To the extent considered helpful, maps have been color-coded throughout to facilitate contrast of topographic features, both natural and installed.

5M Corporation desires to move forward as rapidly as possible in performing coal mining operations on the Kaiparowits Plateau, and will assist as may be helpful in expediting this application. The requirements of Rule M-5 and M-7 pertaining to surity and reports will follow in the prescribed order.

Very sincerely,

Jerry Glazier

JG:ts

ENCL: (1) MRA Form 1.
(2) Mining Plan (John Henry Mine)

5M Corporation
MRA Form 1 (Narration)

Rule M-3 (Page 4 thru 7)
Notice of Intention To Commence Mining Operations

(1) Map showing the location of Section TWO and adjoining lands (Section 35) in the Application:

(a) Refer to Enclosure F (Property Survey).
Acreage is detailed on map.

(b) No deep mining has been performed in adjacent areas.

Names of surface and mineral owners of the surface area within 500 feet of the exterior limits of the property is set forth in Enclosure (A), Map No. 2; (i.e., BLM & Resources Co.).

(d) Names and locations of all lakes, rivers, streams, etc. Refer to TOPO Map, Page 2 of Mining Plan: Only the John Henry Canyon and Warm Creek Canyon drainage (Seasonable).

(e) Drainage. See (d) above.

(f) Drilling results, thickness of deposits, etc. See Paragraph B, Page 2, Mining Plan: Coal Deposits and Stratigraphy of Coal Seams.

(g) Disposal, tailings, waste, area, etc. See TOPO Map, Page 2, Mining Plan. Disposal area color coded.

(2) Plan for reclamation of the land affected.

All mining is to be performed underground. Only approach ways, service entries and working facilities are to be exposed to surface. Accordingly, a variance is deemed realistic as programmed production of coal may exceed 30 years.

(3) General details of the type or method of mining proposed.

Refer to Paragraphs C and D, Pages 3 & 4, Mining Plan. Also, see detailed drawings of Mining Plan, Part A and Part B, Enclosures C-1 and C-2.

GENERAL MINING PLAN

John Henry Mine

Kaiparowits Plateau Coal Field
Nipple Butte NE Quadrangle
John Henry/Tibbet Springs Bench

UTAH STATE MINERAL LEASE NO. 19359
Sec. 2, T. 42 S., R. 3 E.
and
Sections Contiguous Thereto

5M CORPORATION
Hurricane, Utah

June 9, 1975

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INTRODUCTION

This report will define and discuss the 5M Corporation mining concepts considered most applicable for the development of the coal properties held in the Kaiparowits Plateau Coal Field identified in Enclosure (A). Inasmuch as these properties border on the John Henry Canyon, from which access to the mining area is made, the name selected for initial development is the JOHN HENRY MINE.

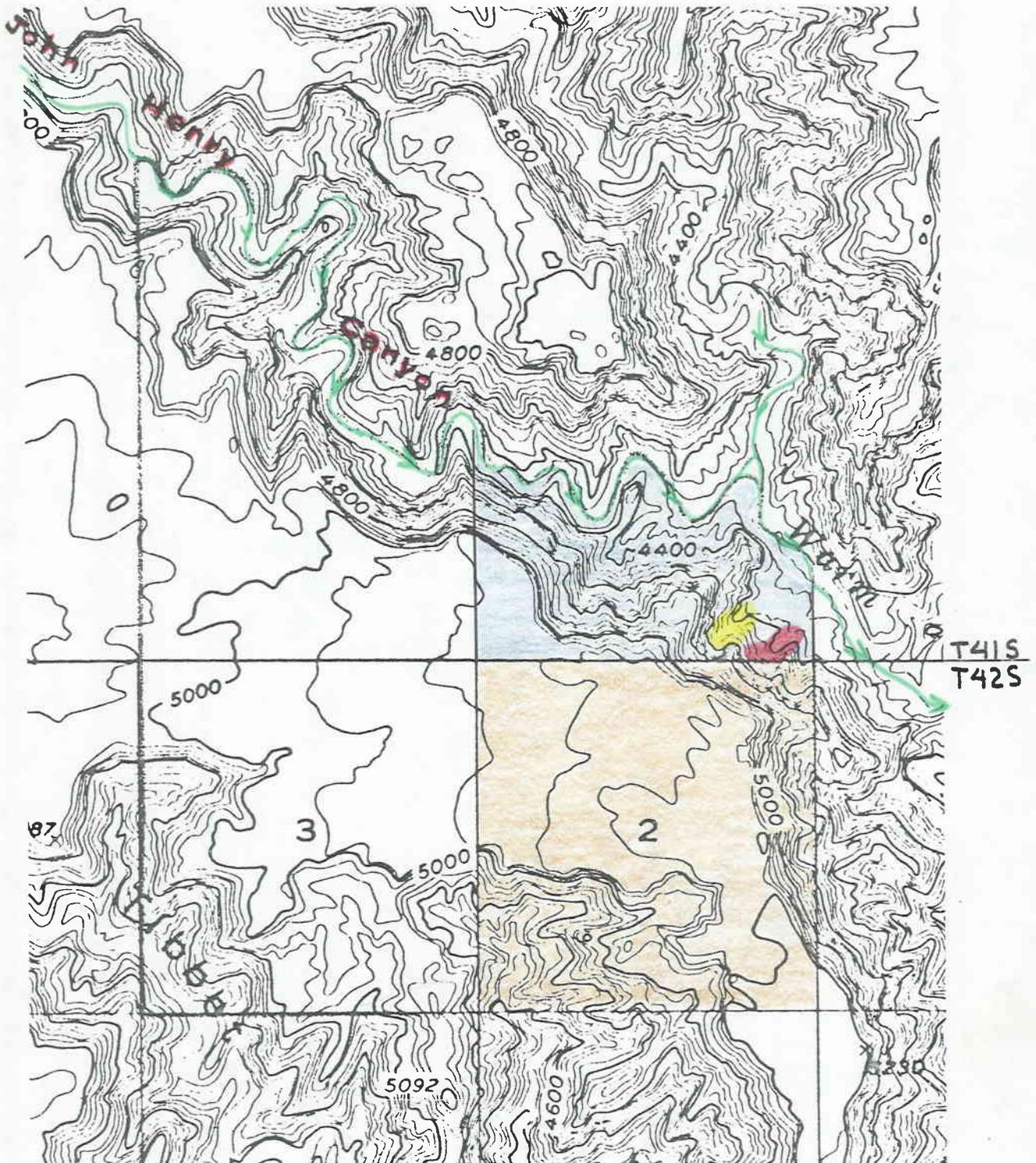
The 5M, Inc. mining plan envisions a time-frame of 12 months to expand production of coal at the John Henry Mine commencing with implementation of the mining program as proposed in the 5M, Inc. Pro Forma "Development of Coal Properties by 5M Corporation". A second 12 months is required for build-up to establish production at a minimum of 3,000 tons per day. (See Appendix B).

The mining plan concepts as discussed herein includes not only the land in Section 2, but also the area prescribed in the application. In order to efficiently mine Section 2, a preferenced right to include, by lease, this additional property is most essential for the implementation of mining operations at the John Henry Mine.

TOPO MAP

SEC 2, T42S, R3E

JOHN HENRY MINE



LEGEND

- STOCKPILE AREA ■ REJECT AREA
- DRAINAGE, EXISTING ROADS
- SOUTH 1/2 SEC 35 T41S, R3E, FED. LAND UNDER APPL. TO SM INC.
- SEC 2 T42S, R3E, UTAH ST. LEASE # 19359 ± 675 ACRES

A. Access Roads:

The John Henry Canyon, on the north boundary, makes possible a natural approach to the horizontal coal seams on the south side of the canyon wall. The approach to these seams will require the grading of a road bed from the canyon floor to the John Henry Mine entrance some 300 feet above. The natural contours from erosion of the canyon walls in this area are readily adapted to construction of a road access, together with the necessary benching at the mine adit. The roadway at the bottom of the John Henry Canyon will require extensive repairs, and in many areas complete rebuilding, in order to move machinery and equipment into the mine area.

B. Coal Deposits and Stratigraphy of Coal Seams:

The coal seams having economical values are contained in the Cretaceous formations. These seams are exposed in several areas indicating massive horizontal beddings. The five major coal zones all lie beneath the mesa cap, Drip Tank Formation:

(1) The first seam, approximately 400 feet beneath the mesa capping, is called the Alvey Zone with an economical thickness sometimes running from 3 to 6 feet.

(2) Approximately 75 feet below the Alvey Zone another commercial coal seam generally occurs known as the Rees Coal Zone. This coal zone at times reaches 5 feet in thickness.

(3) The third and most important commercial coal

zone is called the Christensen (John Henry) Formation, occurring at times with two or more beddings, and with a thickness of up to 25 feet. As found in Section TWO, these beddings average 5 feet and 12.5 feet respectively.

(4) Under the Christensen coal zone lies the Smoky Hollow Member with occasional commercial seams from 3 to 5 feet in thickness.

(5) At the bottom of the John Henry Canyon a fifth coal zone is exposed showing Tropic Shale coal having a potential thickness of 10 to 12 feet, and which may have massive thickness extending into the lower Dakota Formation. The quality and quantity of this potential zone has yet to be economically established.

C. Mining Concepts:

The coal deposits of the Kaiparowits Plateau Coal Field will lend themselves to high production, underground mining operations. The continuity of the widespread horizontal beddings will allow several different underground mining approaches to take place, such as continuous mining plans of Room-and-Pillar, Shortwall and Longwall methods. Inasmuch as the vertical distances between the horizontal beddings are at varied elevations, the systematic mining plan as proposed herein will be carefully followed at the inception of mining operations in order to realize the greatest economical returns consistent with maximum recoverable tonnage and the least amount of environmental disruption.

This general mining plan for mining the various beddings, sets forth the first priority operations to commence in the Christensen Coal Zone at a thickness of 12.5 feet. The main entry will be located near the north $\frac{1}{4}$ Corner on the North Section Line of Section TWO, Township Forty-two (42) South, Range Three (3) East, Salt Lake Meridian, and extending South into Section TWO. Other entries may be developed on grid lines as shown on maps detailed in the Appendicies, and for use of men and equipment in event of an emergency.

All economical coal zones are to be mined, both above and below the Christensen Coal Zone, with removal of between 70 and 80 per cent where limited to Room-and-Pillar mining. In later phase mining operations, retreat mining or Longwall applications may be employed wherever economical and agreeable to meet environmental and Bureau of Mine's requirements.

D. Room-and-Pillar Plan for Continuous Mining:

Coal seams at the Kaiparowits Plateau are shown to be lenticular, and within certain formations the beddings may lens out, while close by another bedding will lens in. The nature of such occurrences are such as to make the conventional Room-and-Pillar mining plan to be the most feasible mining method during first phase operations. Eventually, Longwalling methods where acceptable by the Bureau of Mines and strategraphically feasible, may be used. Various engineering studies show different pillar size

requirements and heading centers, but a safe and practical approach will be an 80 foot square pillar with 20 foot headings and breakthroughs on 100 foot centers.

With average seam thickness ranging from 5 to 6 feet, continuous miners, loaders, transfer conveyors and shuttle cars will be the most economical approach for mining equipment.

E. Roof Support System:

Roof bolting as approved by the Bureau of Mines will be employed to keep timbering at a minimum. Blocking will be made in all crossways to facilitate air accessibility to working faces in those areas requiring overpasses. The construction of overpasses and roof control will be used at all times. Additional support structures will also be used whenever and wherever needed in the interests of safety and good mining practice.

F. Ventilation System:

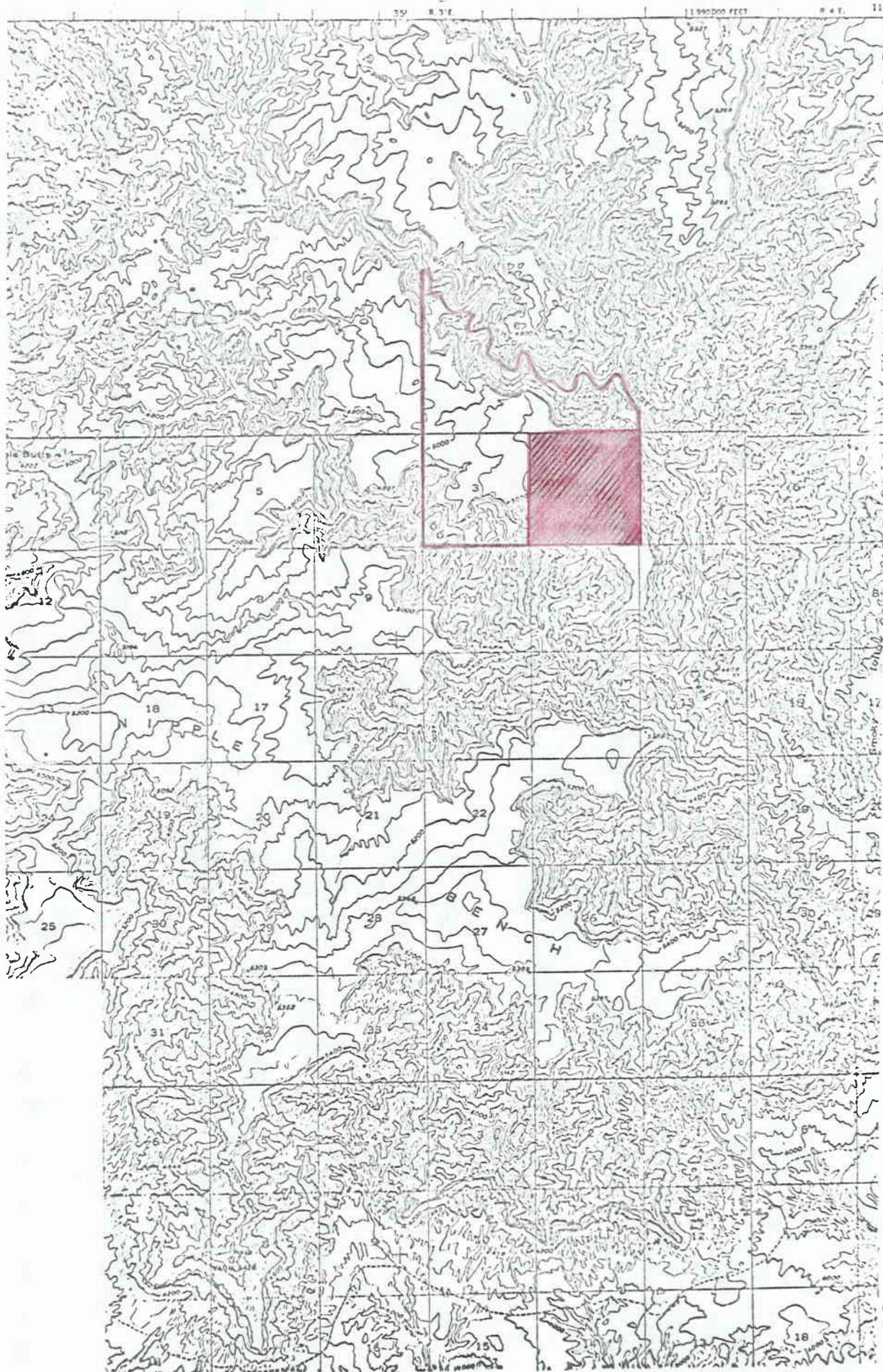
Ventilating systems will be installed using the prescribed equipment, brattice cloth, suction fans, etc., to accord with Bureau of Mines' regulations and practices. The mining area is particularly agreeable to ventilation control, particularly through heading entries extending through, and opening into, Tibbet Canyon on the south and Warm Creek Canyon on the east. Air blocks are to be constructed of cinder block and mortar with a 3' X 3' metal check-door installed at every fourth air block section. Expansion materials will be used where needed; bridges

constructed where necessary; and air restriction doors installed whenever required.

With head and tail entries and cross-ventilation travelling the main throughs, control of gasses and fresh air will be maximized. This provision also complements the facilities for emergency escape. Hazards may further be reduced by employing rock dusting techniques.

G. Water Development:

Water requirements for dust control and mining operations will be hauled initially by tankers from the Glen Canyon City area.



MAP NO. 2

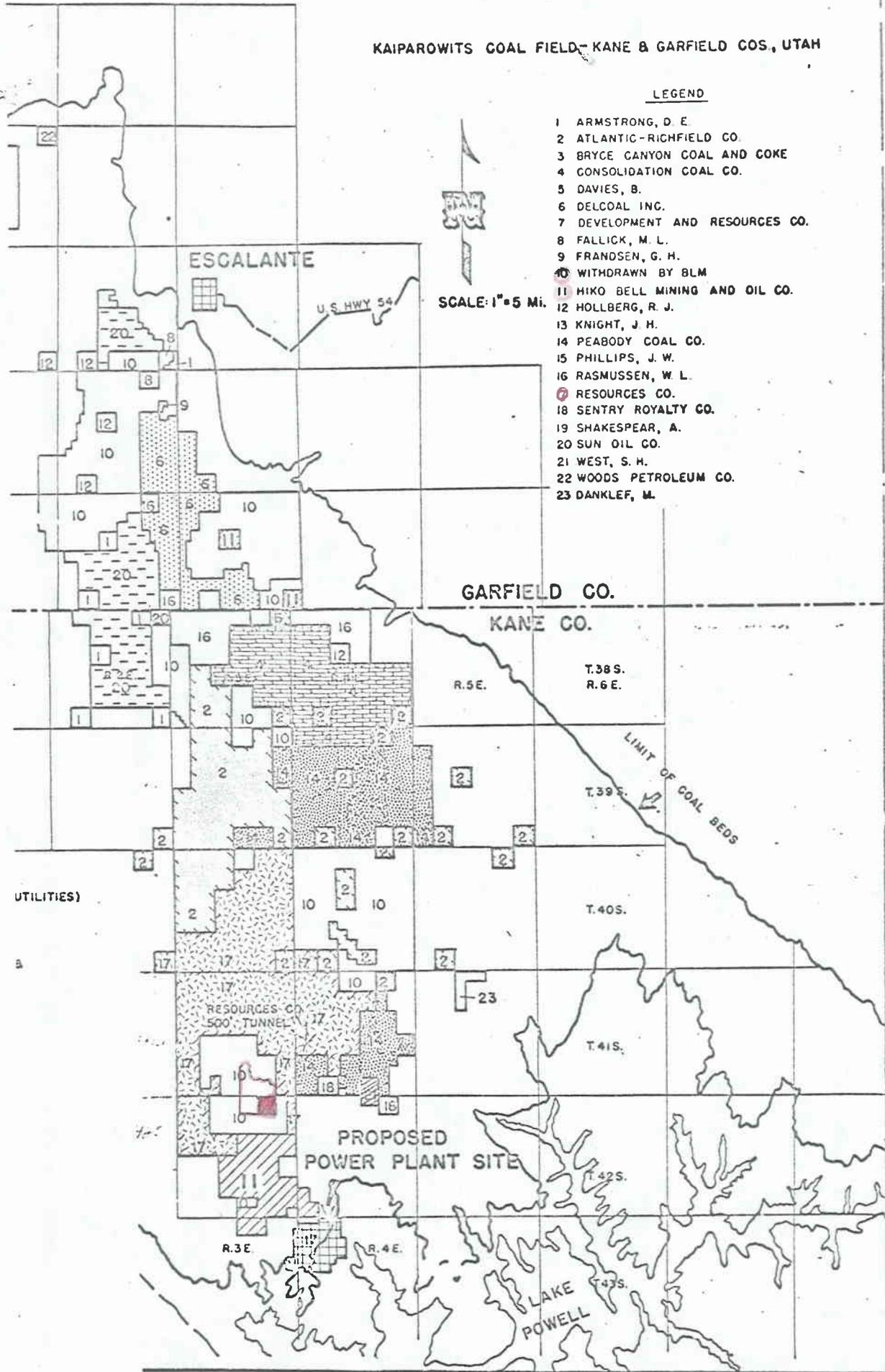
MAP SHOWING COAL PROPERTIES

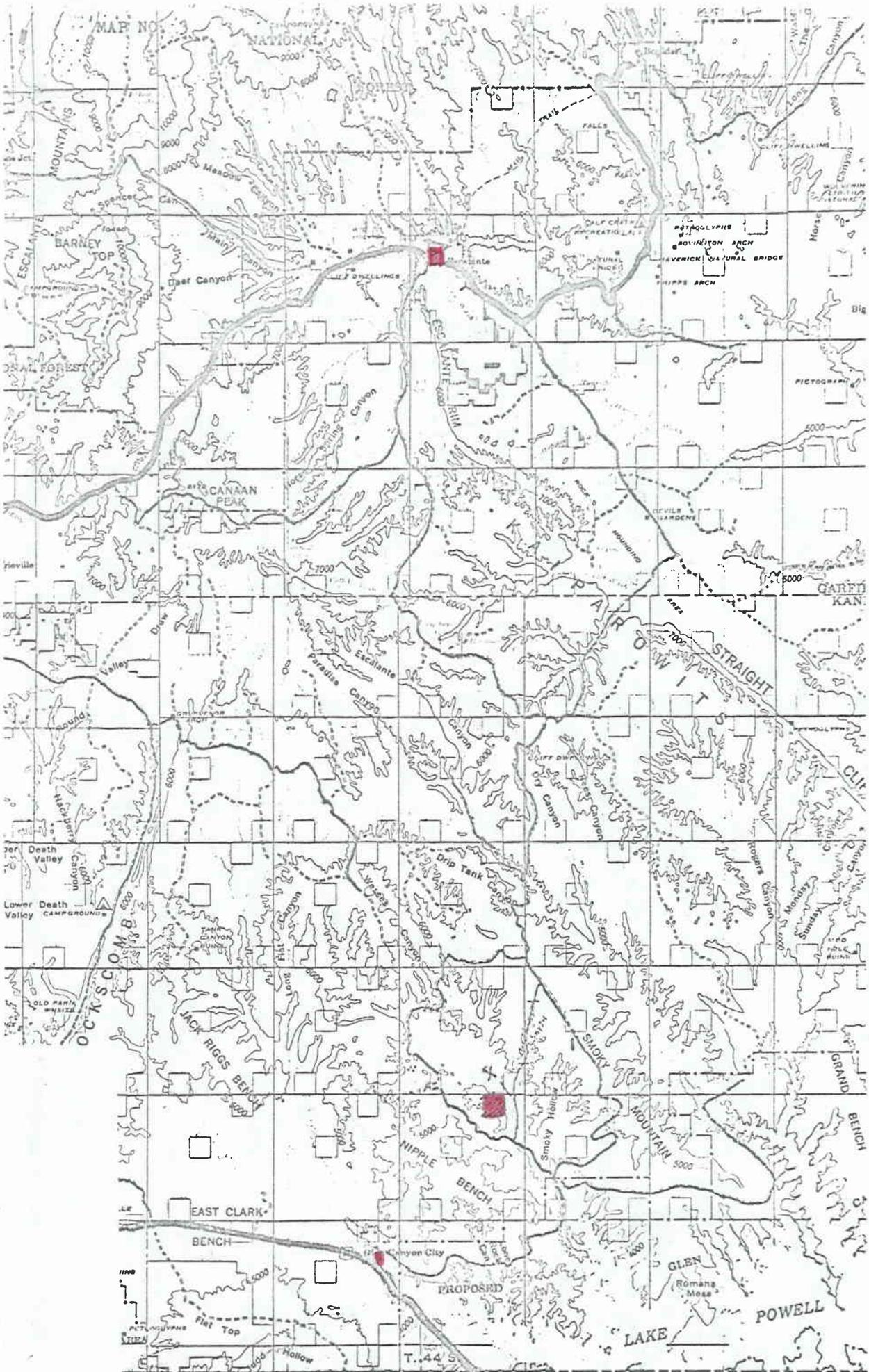
KAIPAROWITS COAL FIELD - KANE & GARFIELD COS, UTAH

LEGEND

- 1 ARMSTRONG, D. E.
- 2 ATLANTIC-RICHFIELD CO.
- 3 BRYCE CANYON COAL AND COKE
- 4 CONSOLIDATION COAL CO.
- 5 DAVIES, B.
- 6 DELCOAL INC.
- 7 DEVELOPMENT AND RESOURCES CO.
- 8 FALICK, M. L.
- 9 FRANSEN, G. H.
- 10 WITHDRAWN BY BLM
- 11 HIKO BELL MINING AND OIL CO.
- 12 HOLLBERG, R. J.
- 13 KNIGHT, J. H.
- 14 PEABODY COAL CO.
- 15 PHILLIPS, J. W.
- 16 RASMUSSEN, W. L.
- 17 RESOURCES CO.
- 18 SENTRY ROYALTY CO.
- 19 SHAKESPEAR, A.
- 20 SUN OIL CO.
- 21 WEST, S. H.
- 22 WOODS PETROLEUM CO.
- 23 DANKLEF, M.

SCALE: 1" = 5 Mi.





R. 1 E. R. 2 E. R. 3 E. R. 4 E. R. 5 E. R. 6 E.

5M CORPORATION
 Kaiparowits Plateau Coal Field
John Henry Mine

Phased Development
 Scaler Projection

Months	Phase I												Phase II														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
Exploration & Development	←————→																										
Road Access Construction	←——→																										
Mine Site Preparation		←——→																									
Main Entry Preparation			←——→																								
Development of Five-Heading Sequence					←————→																						
Mining Operations (Phased Build-up)				←————→																							

Enclosure (B)

The Following
ENCLOSURES PROVIDED UNDER SEPARATE COVER

Enclosure

Mining Plan: John Henry Mine

- C-1 Part A: Room and Pillar
- C-2 Part B: Detailed

- D MAP: Access Roads - John Henry Mine
- E MAP: Tunnels (Tramways) - John Henry Mine
- F MAP: Property Survey - John Henry Mine

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