

K-ELK RIVER 76(7)

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ELK RIVER COAL PROJECT  
PROSPECTUS

ELCO MINING LIMITED

November 1976

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

00 273

**OPEN FILE**

ELK RIVER COAL PROJECT  
PROSPECTUS

prepared for  
ENVIRONMENT AND LAND USE COMMITTEE  
GUIDELINES FOR COAL DEVELOPMENT  
BRITISH COLUMBIA

by

ELCO MINING LIMITED

November - 1976

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PROSPECTUS ON THE ELK RIVER COAL PROJECT

1.0 INTRODUCTION

Elco Mining Ltd., a Canadian company acting as project manager on behalf of a joint venture comprised of:

- 1) 50% consortium of:
  - Finsider International SA (25%)
  - Hoesch Werke AG (20%)
  - August Thyssen-Huette AG (12.5%)
  - Mannesmann AG (12.5%)
  - Ruhrkohle AG (12.5%)
  - Stahlwerke Peine-Salzgitter AG (12.5%)
  - Exploration und Bergbau GmbH (5.0%)
- 2) 25% The Steel Company of Canada
- 3) 15% Home Oil Company
- 4) 10% Scurry-Rainbow Oil Company

proposes to develop the Elk River coal deposit located in the East Kootenay District of Southeast British Columbia (Figures 1 and 2). The property, approximately 43 km north of Elkford, is situated in the Elk River Valley at an elevation of 1700 m; adjacent mountains attain elevations of up to 3000 m.

Forty-two individual coal licences are held by Elco Mining Ltd. on the

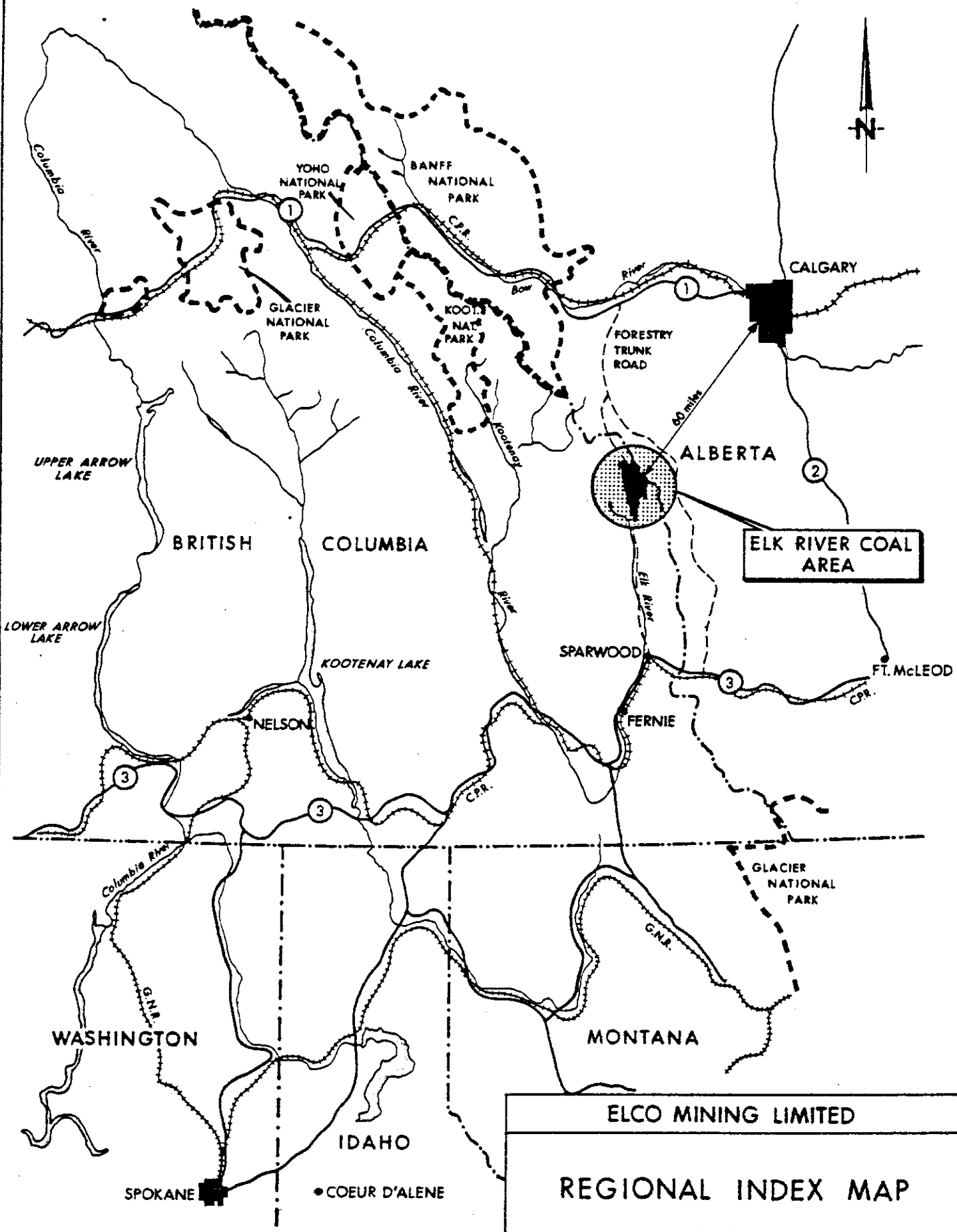
property, namely No.'s 64, 65, 421-434, 481-489, 515, 771-779 and 951-957.

The full extent of the coal deposit has not been determined, but total in-situ reserves are believed to be in the order of 2.4 billion short tons, of which approximately 750 million short tons (measured, indicated and inferred) are recoverable by open pit and underground mining methods.

The proposed initial open pit would develop 110 million short tons of measured recoverable raw coal contained in approximately 20 seams with numerous splits dipping at about 38<sup>0</sup> and located on the east limb of a large syncline underlying and parallel to the Elk River Valley (Figures 3 and 4). Substantial additional open pit coal is available for a continuing operation.

The operation is planned to produce 4 million clean short tons per year from an open pit. Increase of capacity during later years of the operation will be considered.

The coking coal produced by a blend of all the seams is not of sufficient coking quality to fully meet the quality requirements of blast furnace operators, but it possesses good blending potential and can be used to replace or supplement low and medium volatile coals in various charge blends consisting of coals with good coking properties in percentages ranging from 20 to 50 percent. The Elk River coal can thus be readily utilized in Canadian, European and Japanese steel producing operations, replacing U.S., European and Australian coals in many blends.



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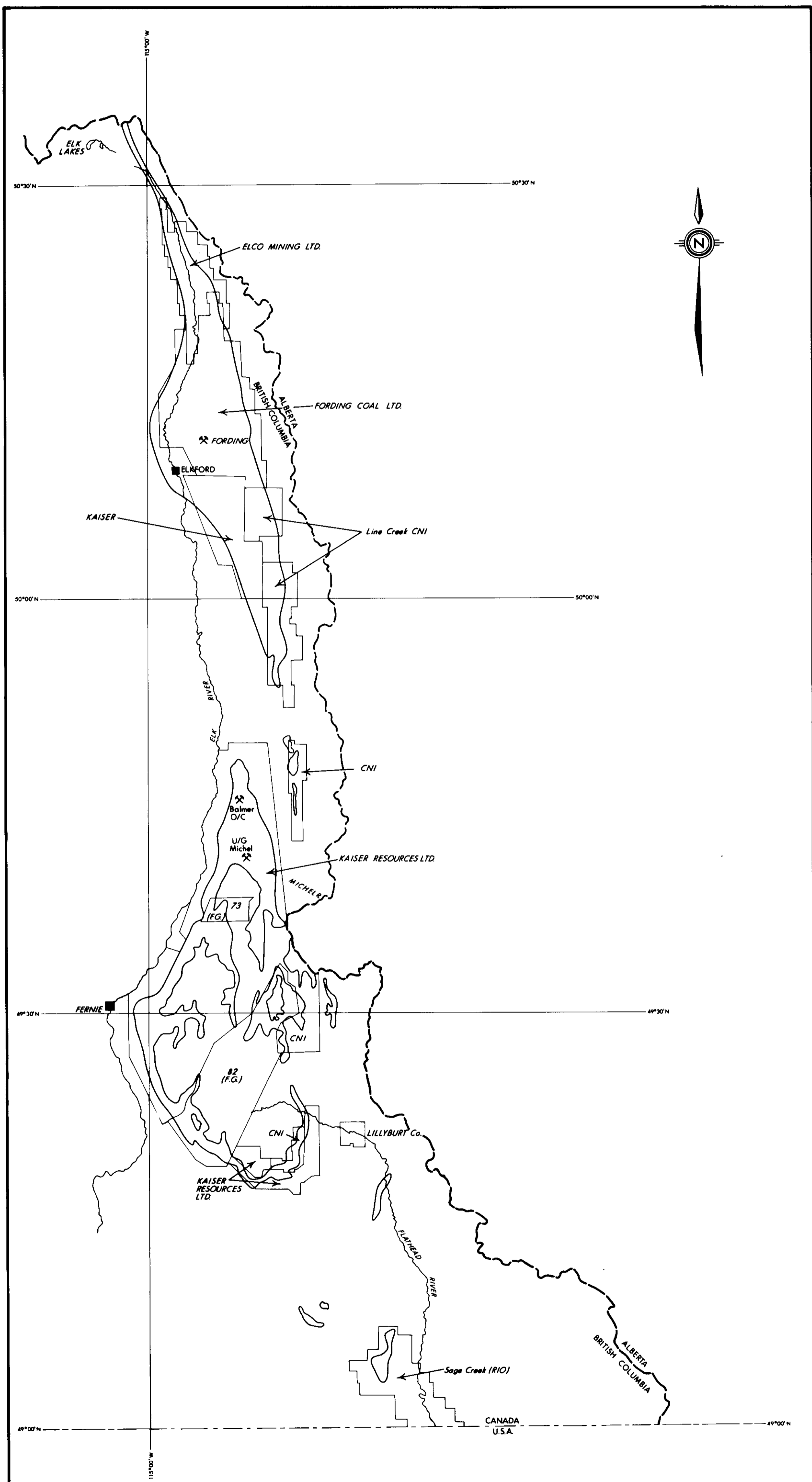
REGIONAL INDEX MAP

Scale : 1" = 40 Miles


miles 0 40 80

NOVEMBER, 1976.      FIGURE No. 1

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**LEGEND**

-  OUTLINE OF AREA UNDERLAIN BY KOOTENAY FORMATION
- FG.** FEDERAL GOVERNMENT COAL LANDS
- CNI** CROWNSNEST INDUSTRIES LTD.
- RIO** RIO ALGOM LTD.



**K-ER 76(7)A**

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**EAST KOOTENAY  
COAL DEVELOPMENT AREA**

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NOV. 1976	FIGURE No 2
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## 2.0 EXPLORATION

Exploration programs to date indicate a zone of coal measures approximately 900 m thick in the form of a NNW-SSE trending syncline underlying the Elk River Valley. Coal bearing strata on the limbs of the syncline are exposed on both sides of the Valley. The lower 600 m of this sequence contains approximately 20 coal seams subdivided into as many as 60 mineable splits having a combined coal thickness of approximately 90 m. The productive part of the coal measures along the synclinal axis probably extends 600 to 1200 m below the valley floor. The coal measure explored in the project area belong to the Lower Cretaceous Kootenay Formation; the stratigraphy of the area is presented in Table 1. A geological map of the project area is presented as Figure 3; a cross section of the project area is presented in Figure 4.

TABLE 1

STRATIGRAPHY OF PROJECT AREA

STRAT. UNIT	THICKNESS	LITHOLOGY
Top Blairmore Group: with basal Cadomin Conglomerate (Cretaceous)	60 - 90 m (200-300')	Marine conglomerate, hard.
-----Unconformity-----		
Kootenay Formation: (Cretaceous) with: Coal Measures	900 m (3000')	300 m (1000') of shales with several thin coal seams; con- tinental, with marine in- gressions.  600 m (2000') of sand- and siltstones and shales with several thick coal seams, continental.
Basal Sandstone	60 m ( 200')	Light colored, poorly cem- ented, friable sandstones; continental.
Fernie Group: Jurassic Bottom		Dark grey, marine shales.

## 2.1 Previous Exploration Programs

Reserves and quality data have been developed from the results of the original Emkay Canada Natural Resources Ltd. and Scurry-Rainbow Oil Ltd. drilling and exploratory adit program of 1970-71, two previous programs and from the 1975-76 drilling and adit development program by Elco Mining Ltd. The earlier programs drilled 98 holes for 16,800 m, trenched 6866 m and obtained 22 bulk samples from adits. The Elco program drilled an additional 24 holes for 5343 m, trenched 805 m, reopened old adits and drove 228 m of new adits to obtain 201 short tons of bulk samples.

Proven open pit reserves of non-oxidized coal are as follows:

	<u>st</u> (000's)	<u>mt</u> (000's)
Raw Coal in Place	136,126	123,466
Recovered Raw Coal	117,630	106,690
Run of Mine Product incl. dilution rock	130,476	118,342
Total Till & Rock Waste	704,530 BCY	535,433 m <sup>3</sup>
Ratio	5.40 BCY/st	4.52 m <sup>3</sup> /mt
Clean Coal Recovered at Plant Yield of 65%	76 million	68 million

In addition, Big Weary Ridge, south of the proposed open pit, has a potential of 130 million short tons of recoverable open pit coal on the portion of the ridge within the Elco Licence area.

Additional coal can also be obtained by underground mining methods

from Big Weary Ridge and other areas. Limits between open pit and underground reserves will be determined during the feasibility study.

## 2.2 1976-77 Exploration Program

The 1976-77 exploration program is planned as an extension to the program of 1975-76 in order to obtain additional subsurface information as well as bulk samples on the property. Permit No. 49 was renewed for a three year period by the British Columbia Department of Mines and Petroleum Resources on June 25, 1975; Coal Exploration Forms 7-8, "Notice of Work on a Coal Licence and Application for a Reclamation Permit on a Coal Licence", outlining the 1976 exploration program were submitted by Elco Mining Ltd. on October 8, 1976. A copy of these forms is included in the Appendix of this report.

The initial phase of the exploration program is from October through December, 1976 (Figure 6). During this period the following will be evaluated:

- a) approximately 72 diamond drill holes with a combined length of about 11,000 m.
- b) approximately 25 rotary holes with a combined length of about 4,500 m.
- c) seven (7) exploration trenches.

Exploration work will continue into early 1977 with approximately

7,000 m of diamond drilling and 3,500 m of rotary drilling. Notices of work for the second phase of the exploration program will be filed in due course.

Access to the drill sites will be through use of existing exploration trails and clearing of new access routes by 'dozer.

An exploration camp capable of supporting approximately 40 persons will be established near Weary Creek on the east side of the Elk River at the same location as was used during the 1975 exploration program (Figure 6). Water intake, waste treatment and refuse disposal facilities will be implemented to meet respective quality standards.

Development and subsequent restoration of disturbed sites will be in accordance with the guidelines set forth by the Reclamation Branch of the Department of Mines and Petroleum Resources as well as those established by Elco Mining Ltd. following the 1975 exploration program. These procedures include erosion control features such as placement of culverts and sloped road ditching, and reclamation practices including soil stockpiling, recontouring, levelling, spreading of topsoil, fertilizing and seeding (Photos 1 and 2). Details of reclamation programs on the property are set forth in the "Annual Report 1975 on Reclamation Operations" submitted to the Department of Mines and Petroleum Resources on January 26, 1976.

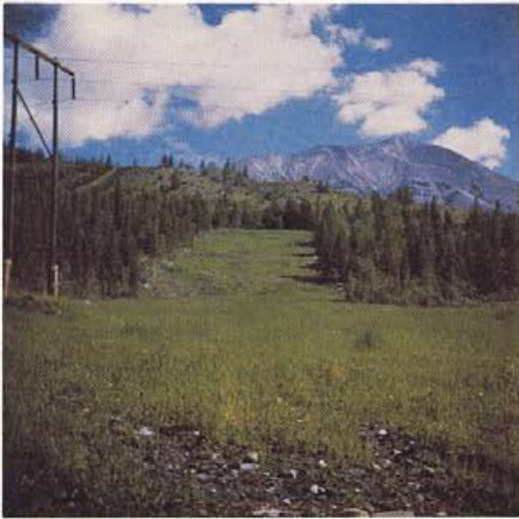


PHOTO 1

Looking northeast with Little Weary Ridge in background.

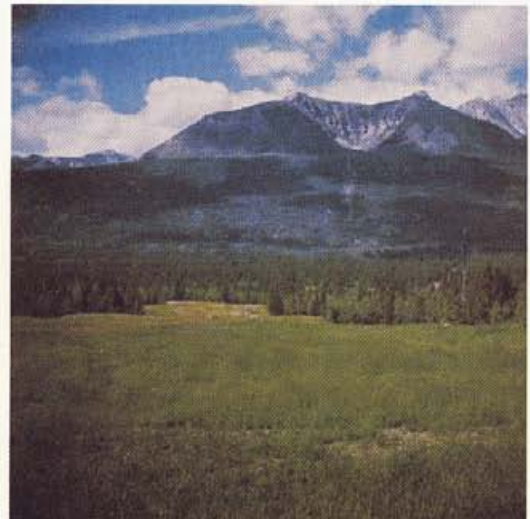
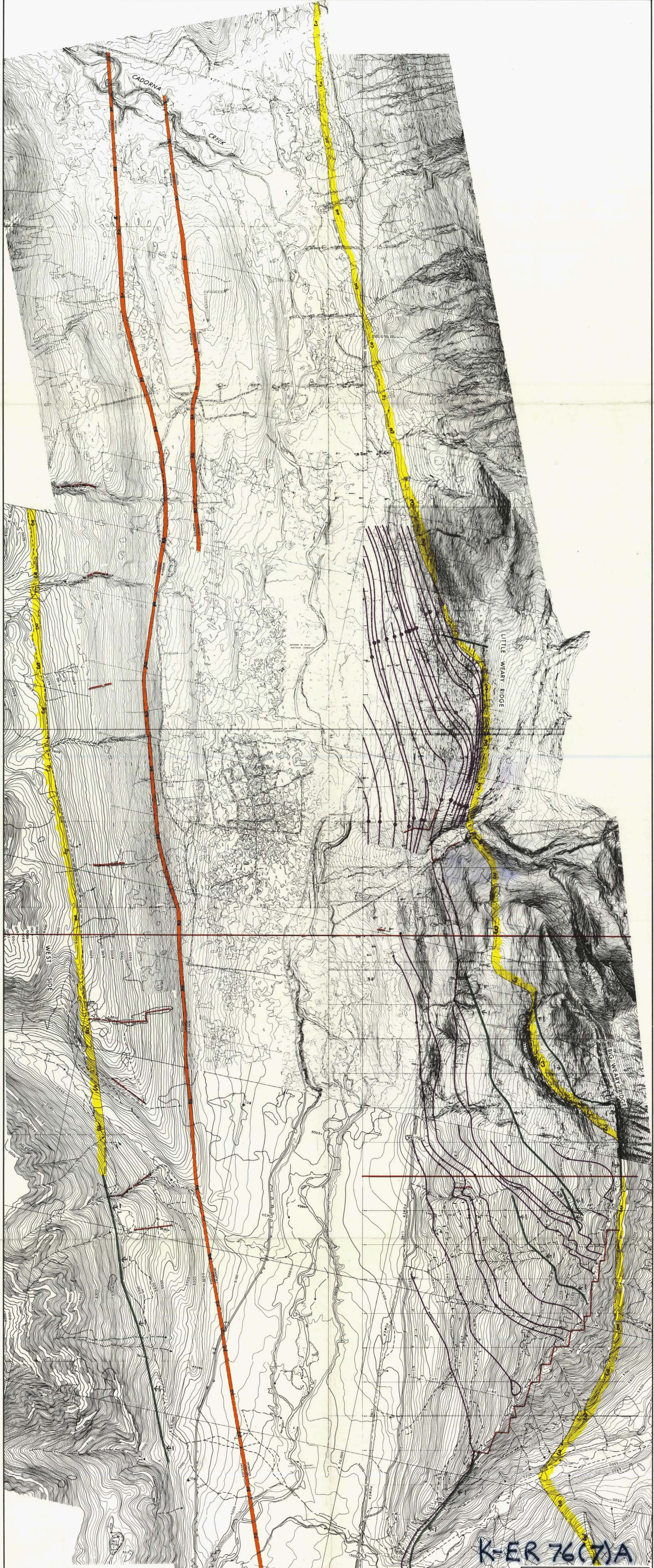


PHOTO 2

Looking southwest.

Photos 1 and 2 show the area of Trench 16 located southwest of Little Weary Ridge. The trench was excavated and backfilled in the fall of 1975. Backfilling included compaction, recontouring, spreading of topsoil, seeding and fertilization. Photos were taken in August, 1976.





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- Rock unit contact
- Coal seam outcrop with seam identification, approx. predicted
- +—+—+ Strike and dip, normal, overturned, vertical and horizontal
- +—+—+ Anticline, Syncline, showing plunge
- Fault
- Coal outcrop with true coal thickness of over 4'
- Coal show
- Drill site with identification
- Measured section
- Line of Section

BLAIRMORE GROUP

- Undifferentiated Blairmore
- Cadomin Formation

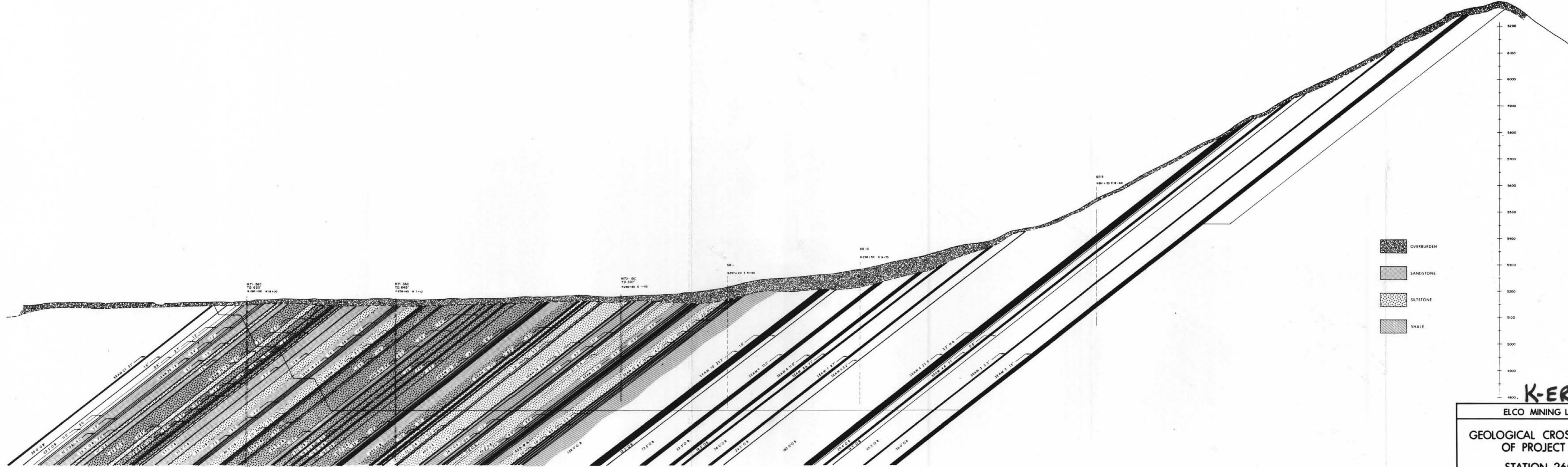
ROCK UNITS  
KOOTENAY FORMATION





- Undifferentiated Kootenay coal measures
- Basal Sandstone

ELCO MINING LIMITED	
GEOLOGICAL MAP OF PROJECT AREA	
NOVEMBER, 1976	FIGURE No. 3

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-  OVERBURDEN
-  SANDSTONE
-  SILTSTONE
-  SHALE

K-ER 76(7)A

ELCO MINING LIMITED

GEOLOGICAL CROSS SECTION  
OF PROJECT AREA

STATION 260+00

100 50 0 50 100 FT.

NOVEMBER, 1976      FIGURE No. 4

### 3.0 MINING CONCEPT

The proposed open pit mine includes the east limb of the syncline and extends across much of the Elk River Valley bottom, requiring temporary diversion of sections of the Elk River for a total length of 3.4 km. The westerly displacement of the average trend of the river for the segments where movement is required is modest, being generally about 120 to 150 m. The river must be partly and temporarily diverted to obtain the higher volatile coals which are most essential to the production of an acceptable quality product.

The numerous seams of varying physical properties require blending in order to produce a uniform quality coking coal. This blending requirement dictates that the mine be developed in a manner which allows the recovery of coal from all of the seams at all times. To accomplish this recovery requirement, a box cut is developed with numerous benches which advance southward while being mined across the strike. The waste material from the advancing mine benches is deposited in the hole created by the advance without lifting the waste out of the mine. Topsoil from ahead of the mining face is transported north and placed on the backfilled surface which is reclaimed progressively as the mining face advances from north to south. When the mine reaches its ultimate southward advance limit, a lake is created in the remaining open section. One initial waste dump is shown to the west of the open pit (Figure 5). A second dump to the north which is not shown is under consideration. The location of this dump will be in an area where open pit mining methods cannot be applied as only underground methods can be used.

The initial open pit reserves listed result in a pit mined for 5.5 km in length, most of which is backfilled. The pit width varies from 0.83 to 1.30 km. The depth mined below the valley floor is approximately 120 m, with the maximum height of mining on the east footwall of 365 m above the valley floor.

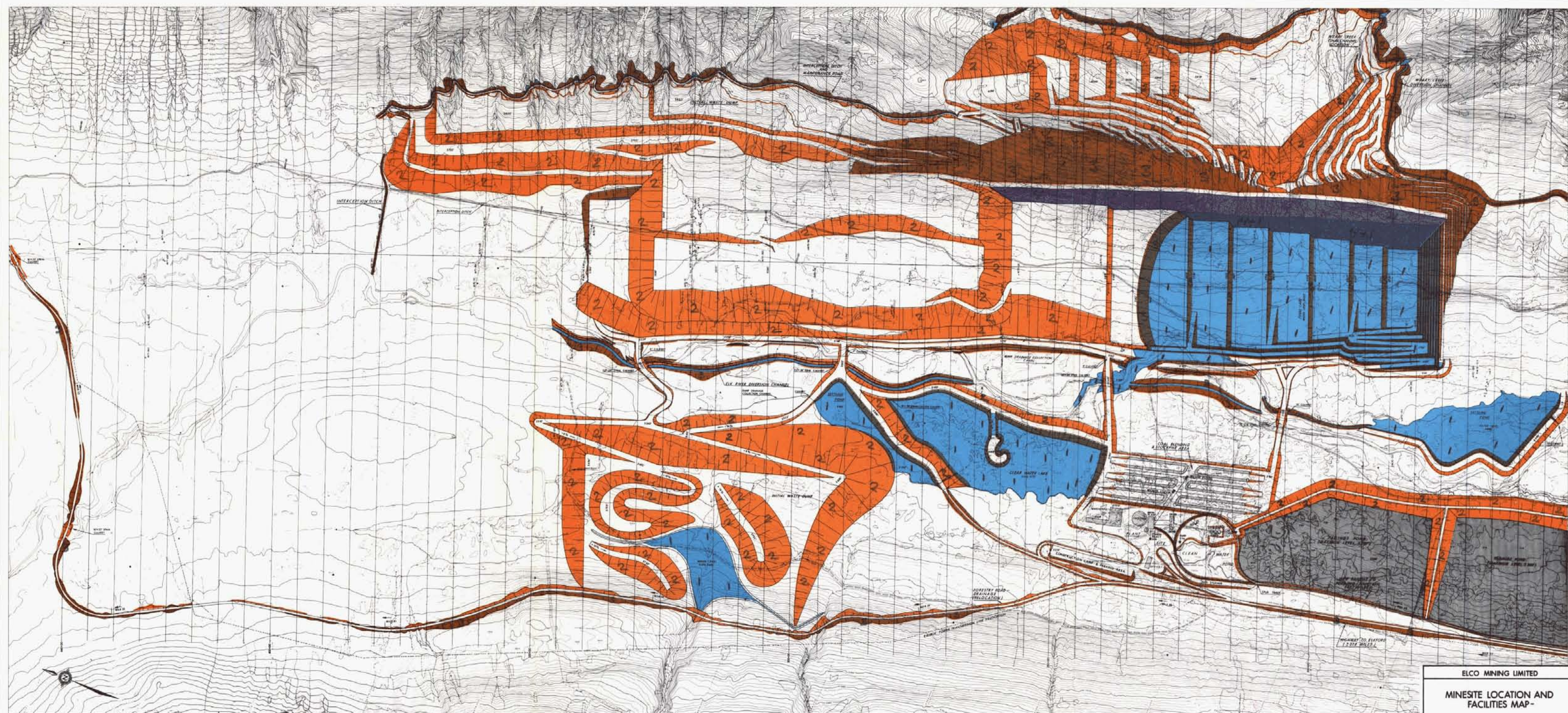


The total disturbed area for mining, waste disposal and all facilities is 1720 ha (of the initial open pit operation) and 65 percent of this area as reclaimed will have slopes of less than  $15^{\circ}$  (Figure 5).

The simultaneous working of many thin coal seams and partings dipping at around  $38^{\circ}$  on many benches requires extreme mobility of equipment and precise digging control for the thin members to obtain maximum recovery with minimum dilution. This is accomplished by using equipment most adaptable to these conditions where necessary, rather than mining by conventional methods. The basic fleet will therefore consist of large mobile rubber-tired front end loaders and hydraulic shovels loading large electric drive trucks. A combination of large rotary and small percussion drills will respectively handle the thick and thin rock partings.

Hour by hour control of all types of coal feed directly from the mine to the plant is not possible. Therefore, substantial blending facilities must be provided between the mine and the coal preparation plant to assure a uniform quality plant feed.





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- LEGEND**
- EXCAVATION SLOPE
  - EMBANKMENT OF WASTE DUMP SLOPE
  - FOOTWALL OF HOLE
  - WATER

ELCO MINING LIMITED

MINESITE LOCATION AND FACILITIES MAP - PRELIMINARY

0 400 800 1200 FEET

NOVEMBER, 1976 | FIGURE No. 5

K-ER 76(7) A



#### 4.0 PREPARATION PLANT AND OTHER ONSITE FACILITIES

During the exploration phase, the foundation investigation for the plant site, ancillary facilities, settling ponds, and freshwater intake structure will be carried out. This will include geotechnical drill holes under the major plant buildings and dams; an investigation for suitable fill materials for the raw coal storage area; and a search for concrete aggregates in the area. Several coal quality test holes will also be drilled in the mine areas to confirm the extensive existing data, and another 50 ton bulk sample will be extracted and run through a rotary breaker at a nearby plant.

During the construction phase a camp will be maintained very near the plant site. This camp will have full sanitary facilities and a regulation sewage treatment plant which will eventually serve as the sewage system for the operating mine. The plant site will be adequately drained during construction with proper siltation ponds at strategic locations. The anticipated construction periods for the coal preparation plant are shown in Chart 2.

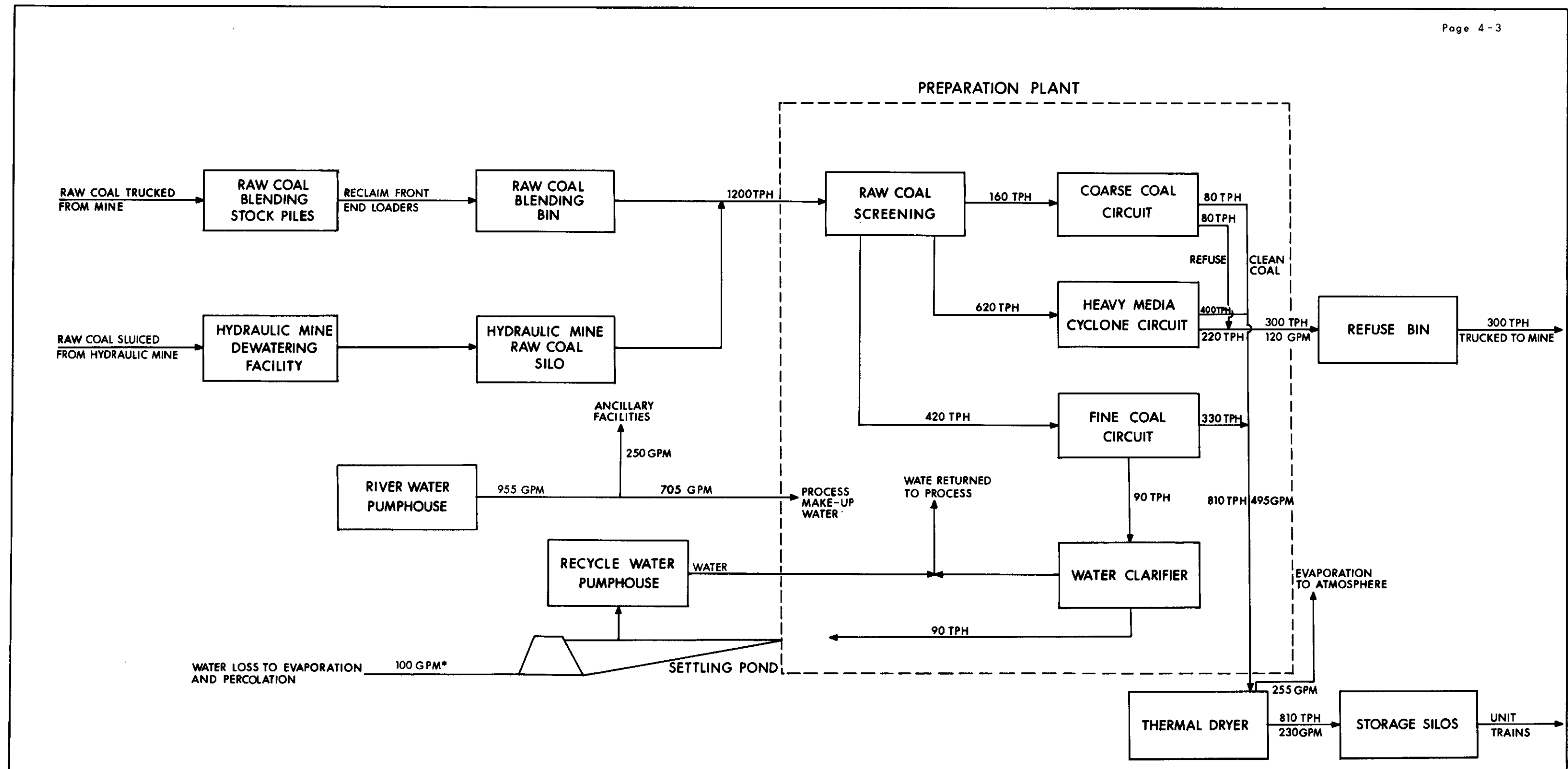
The Elk River preparation plant will be planned as is shown in Chart No. 1. Because of the multiple seams which will be mined and the supplementary coal mined at a later stage from an underground hydraulic mine, the blending facility will be large and elaborate. In addition, the highly variable nature of the coal deposits will necessitate cleaning in a coarse, intermediate and fine coal circuit. The plant will produce 4,000,000 clean short tons of coal per year at a yield of 60 to 70 percent. The clean coal will be thermally dried and shipped in unit trains to the port and the buyers. The coarse refuse will be trucked to the mine, while the fine refuse will be thickened and pumped to a settling pond.

The plant is essentially closed-loop with the bulk of the clarified process

water being returned to the plant process circuits from a large clarifier, and the remainder being recycled from a settling pond. Approximately 900 to 1000 gallons per minute of process make-up water will be required. The use of flocculants for water clarification is anticipated.

In addition to closing the circuit, several other environmental protection considerations are being made. An emergency dump pond in the vicinity of the thickener will be used in case of thickener blockage or plant process overflow. The pond will be cleaned out as required. Provision will be made to add water to the raw coal stockpiles should dust be a problem. An enclosed blending bin will be used for mixing and crushing the raw coal. Silos will be used to store hydraulic mine coal and clean coal product. The refuse will be handled through a bin and trucked to the mine. The thermal dryer will be equipped with large diameter primary cyclones and a high energy scrubber so that the latest dust emission standards can be met. All the conveyors around the plant will be totally enclosed by galleries. A small proportion of wet coal will bypass the dryer and be laid on top of the dried coal on the product conveyor to prevent dusting there. A latex or oil emulsion car topping will be sprayed on railway cars to eliminate dust losses during transportation. Control rooms and vacuum pumps will be enclosed in the plant to minimize noise in working areas.

Adequate offices, washhouse, canteen, warehouse, maintenance facilities, and mechanical and electrical training facilities will be located in the general area shown in Figure 5. A laboratory for coal testing will also be equipped and staffed with personnel trained to monitor all aspects of the environment. Waste oil from the machinery will be containerized and sold, or disposed of in an environmentally acceptable manner.



\*TO BE CALCULATED DURING DESIGN  
(NO OVERFLOW IS ANTICIPATED)

**K-ER 76(7) A**  
 ELCO MINING LIMITED  
 SCHEMATIC  
 COAL PREPARATION  
 NOV. 1976 | CHART 1

## 5.0 INFRASTRUCTURE

Coal will be transported to Roberts Bank port by 105-110 car unit trains via a new rail line to be constructed southward to join with the Fording River coal rail line (Figure 6). This line could follow the Elk River Valley to a point about 6.4 km north of Sparwood, or it could connect to the existing Fording River Coal rail line opposite Elkford, by climbing 150 m with the loaded trains. The latter alternative has not been studied in any detail, but should result in lower capital and maintenance costs at the expense of somewhat higher transport costs, and would avoid the problem of putting a rail line through the town of Elkford. The railway should be constructed in 1979-80 to allow transport of many heavy components directly to the minesite during the construction period.

About 25% of the coal production will be transported to the steel works of The Steel Company of Canada in Hamilton. Direct transportation by railway from the mine site to Thunder Bay and from there to Hamilton is being considered.

A new road is required from Elkford to the minesite (as shown in Figure 6) and ultimately some improvement of the road from Sparwood to Elkford should be made. The new road should be built to B.C. Highway standards and a gravelled subgrade should be completed in 1979 so that it is available for use during most of the construction period.

Public access to the Upper Elk Valley will be maintained with the new road development as it will be designed and located around the mine area. Recreational use can be maintained for camping, fishing and hunting although the latter will be discouraged and possibly restricted in the immediate vicinity of the mining operation. As the project proceeds through Stage I

and into Stage II, recreational use guidelines will be formulated in cooperation with the respective government agencies.

It is anticipated that electric power will be from the present Kan Elk power transmission line which will be relocated around the mining area (Figure 6).

A natural gas pipeline from Sparwood to feed the drier is required. The routing could be in the vicinity of the road access; this feature will be studied in detail.

An initial townsite is required to accommodate a total of approximately 5,000 inhabitants and sufficient space to accommodate up to 10,000 inhabitants is necessary for future expansion. Studies on extension of Elkford will be included in the Stage I report.

Approximate manpower requirements for the mine operation and ancillary facilities are presented in Table 2.

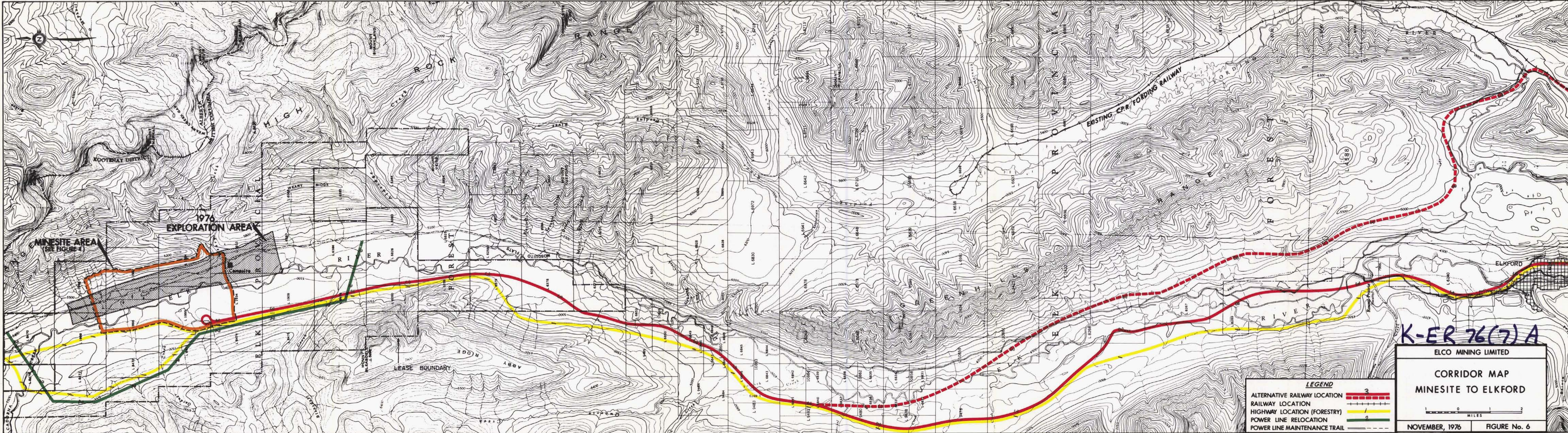
TABLE 2

LABOUR REQUIREMENTS FOR MINE SITE, ROAD AND RAILWAY

TRADE	Approximate No. of Employees/Year				
	1979	1980	1981	1982-90	1991-2006
Construction Supervision	14	94	97		
Mine Supervision		6	27	27	27
Engineering	52	68	32	26	26
Maintenance Supervision	12	15	34	34	34
Office, Administration/Clerical	23	29	44	44	44
Warehouse	12	10	8	8	8
Security & First Aid	8	8	13	13	13
Services & Transportation	58	55	165	135	135
Equipment Operators & Helpers	129	96	390	390	373
Mechanics, Electricians & Servicemen	95	189	277	277	260
Blasting Crew			27	27	28
Preparation Plant Supervision				24	24
Preparation Plant Operating Labour				88	88
preparation Plant Mainten. Labour				100	100
Carpenters	30	6	6		
Iron Workers	25	92	101		
Pipe Fitters		122	135		
Instrumentation		61	67		
Millwrights		92	101		
Boilerworkers		31	34		
Miscellaneous Labour	21	92	101		
<u>Underground Mining Operation</u>					
Wage Earners					176
Mining Operators					21
TOTAL LABOUR FORCE*	479	1066	1659	1179	1343

\*The townsite construction labour force has not been analysed and is not included. However, depending on the rate at which family housing is provided, the work force in the building and construction trades required to build a small city in three years could be 2000 to 3000 men.





**K-ER 76(7) A**

ELCO MINING LIMITED

**CORRIDOR MAP  
MINESITE TO ELKFORD**



NOVEMBER, 1976      FIGURE No. 6

**LEGEND**

- ALTERNATIVE RAILWAY LOCATION - - - - - 3
- RAILWAY LOCATION ————— 1
- HIGHWAY LOCATION (FORESTRY) ————— 2
- POWER LINE RELOCATION ————— 2
- POWER LINE MAINTENANCE TRAIL - - - - - 1

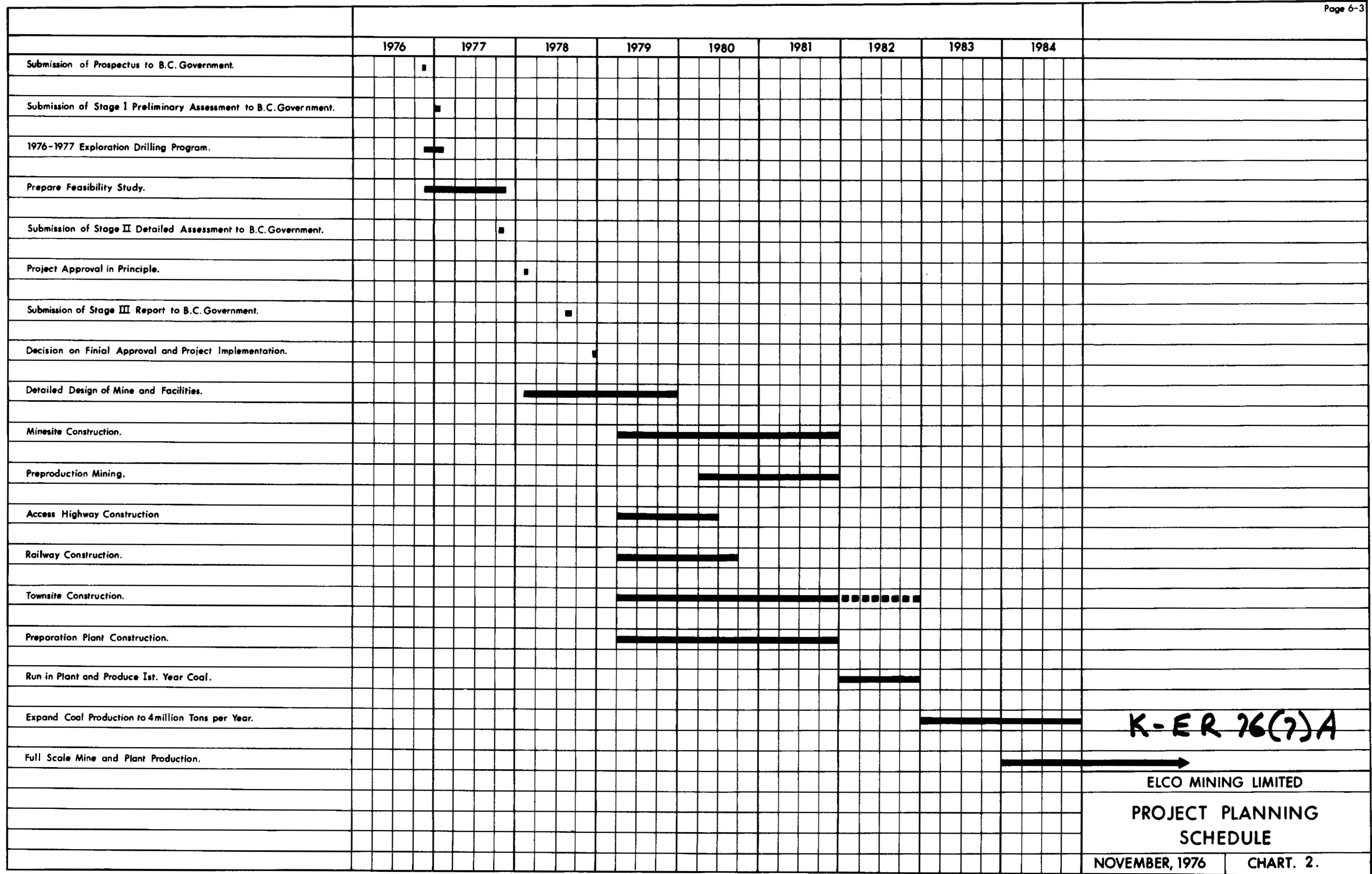


## 6.0 PROJECT PLANNING

Salient planning parameters through the exploration, construction and operation phases of the Elk Valley Project as set forth in Chart 2 are as follows.

- 1976-77      Submission of Prospectus (November, 1976) and Stage I Preliminary Assessment Report (January, 1977) to B.C. Government.
- 1976-77      Drilling Program completed in early 1977.
- 1977          Prepare Feasibility Study Report (Stage II Detailed Assessment) for submission in the latter part of the year to B.C. Government and partners .
- 1978          Project approval in principle in the early part of the year (February, 1978)
- 1978          Submission of Stage III report to B.C. Government.
- 1978          More detailed design of mine and facilities continues.
- 1979          Decision on final approval and project implementation at the beginning of the year.
- 1979          Calling of tenders.
- 1979          Clearing, setup camp, plant site excavation, commence Elk River diversion, some drainage and roadwork, commence preparation plant construction.
- 1979          Construct highway subgrade to minesite.
- 1979          Construct railway subgrade to minesite.
- 1979-81      Construct townsite facilities.
- 1980          Surface highway and complete railway.
- 1980          Complete Elk River diversion, purchase part of equipment fleet and commence pre-production mining, roads, drainage and settling ponds, continue preparation plant construction and build maintenance shop.
- 1981          Complete remaining facilities started in previous years and construct coal blending facilities. Complete opening

- up of mine area for commencement of full scale production and stockpile coal extracted from this mine development.
- 1982 Startup of coal production.
- 1982-85 Expand coal production from 2 million to 4 million clean tons annually.
- 1985-2006 Continue open pit mining to completion of first phase at a minimum production rate of 4 million. The capacity of the open pit operations will be expanded and an underground mine developed during this period.
- 2006 & later The great potential of the deposit guarantees a continuation of coking coal production for more than 100 years.



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ELCO MINING LIMITED  
PROJECT PLANNING  
SCHEDULE

. APPENDIX



DEPARTMENT OF MINES AND PETROLEUM RESOURCES  
 MINERAL RESOURCES BRANCH  
 INSPECTION AND ENGINEERING DIVISION

NOTICE OF WORK ON A COAL LICENCE

Pursuant to section 7 of the *Coal Mines Regulation Act* this notice is to be completed by all companies or individuals carrying out exploration work prior to commencement of work, and within one month of cessation of work and one copy is to be sent to each of the following:

Senior Reclamation Inspector, Victoria  
 District Inspector of Mines  
 Regional Water Rights Engineer

District Forester or Forest Ranger  
 Regional Fish and Wildlife Office

PERMIT NO. 49

1. NAME OF PROPERTY: Elk River Coal Project  
 Coal Licence Numbers: 69,65;421-434;481-489;515;771-779;951-957

2. LOCATION: Mining Division Fort Steele NTS Map Sheet (e.g., S2E/9E) 82-J-7  
 Lat. 50 ° Long. 114 ° Locality and Access 29 miles north of Elkford via forestry road # 103. Elk River valley between Cadorna & Weary Creeks

3. OWNER: Name Scurry-Rainbow Oil Free Miner's Cert. No. 151381  
 Address 709-8th Ave. S.W. City Calgary Prov. Alta.

4. OPERATOR: Name Elco Mining Limited Free Miner's Cert. No. 93191  
 Company \_\_\_\_\_ Telephone No. 265-0520  
 Address 307, 239-8th Ave. S.W. City Calgary Prov. Alberta.

5. ESTIMATED DURATION OF WORK: From Oct. 15/76 to Dec. 31/76

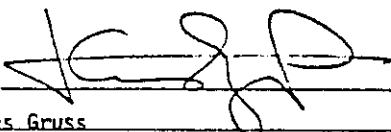
6. ACTUAL DATE WORK COMPLETED: Day \_\_\_\_\_ Month \_\_\_\_\_ 19\_\_\_\_

7. APPROXIMATE NUMBER OF MEN EMPLOYED: 35

8. EXPLORATION WORK: Proposed  Completed  (Use metric measure - 1 metre = 3.3 feet.)  
 Linecutting (distance, width, method) 9900 m, 1 m, ax work  
 (Requires approval of Forest Service. 'Licence to Cut' or 'Free Use Permit' may be withheld until Reclamation Permit approval.)  
 Drilling - No. of Sites 73 Total Area 60,000 square metres  
 Road Construction - Total Length 5,800 metres Approximate Width 6.0 metres  
 Underground Exploration \_\_\_\_\_ (type)  
 Trenching - Number 7 Total Length 3425 metres Width 5.0 metres  
 Test Pitting - Number - Total Disturbed Area 121,825 square metres  
 Work by Self  OR Name of Contractor Tonto Drilling, Connors Drilling, McMeekin Construction  
 (Owner is responsible for ensuring the Contractor complies with pertinent regulations, see section 8, *Coal Mines Regulation Act*.)

9. DATE FOREST SERVICE ADVISED BY OPERATOR: Oct. 8/76 by registered mail  
 Name and Title of Forest Official District Forester  
 Address Nelson, B.C.

NOTE: Pursuant to section 8, subsection 2(a) of the *Coal Mines Regulation Act*, "...where the employment of mechanical equipment is likely to disturb the surface of the land in clearing, stripping, trenching..." the Application for a Reclamation Permit on the reverse side is also to be submitted.

SIGNATURE OF APPLICANT  TITLE Manager Exploration  
 PRINT NAME Dr. Hans Gruss DATE October 8/76



DEPARTMENT OF MINES AND PETROLEUM RESOURCES  
MINERAL RESOURCES BRANCH  
INSPECTION AND ENGINEERING DIVISION

APPLICATION FOR A RECLAMATION PERMIT ON A COAL LICENCE

Pursuant to section 8 of the *Coal Mines Regulation Act*, this form is to be completed when applying for a Reclamation Permit, when renewing same, or when reporting exploration work to be done. When reporting on work which has been done, see instructions at the bottom of the page. For recommended methods of reclamation and environmental control, see booklet entitled, *Guidelines for Coal and Mineral Exploration*, which is available at the office of the District Inspector of Mines.

PERMIT NO. 49

- 1. THIS IS: An Initial Application  Renewal  Report of Proposed Exploration Work
- 2. PRESENT STATE OF LAND ON WHICH EXPLORATION WILL BE DONE IS:

Canada Land Inventory (where possible) \_\_\_\_\_  
 Present Land Use (fencing, timber, etc.) occasional recreational  
 Type of Vegetation sparse to moderate forest cover  
 Access Roads (present use, condition) existing roads in good condition  
 Campsites, Old Workings (location, condition) existing camp site in good condition

NOTE: Items shown above should be indicated on the NTS maps which are required for the following section.

- 3. PROPOSED SURFACE WORK: (Attach 7 copies of 1:50,000 NTS map with full extent of exploration work noted - Coal Titles Reference Map.) (Use metric measure - 1 metre = 3.3 feet.)

Roads: Total length	<u>5800</u> metres	Total disturbed area	<u>34,800</u> square metres
Test Pits: Total No.	<u>0</u>	Total disturbed area	<u>-</u> square metres
Trenches: Total No.	<u>7</u> (includes ground slope at trench on NTS map)	Total disturbed area	<u>17,125</u> square metres
Adits: Total No.	<u>0</u>	Total disturbed area	<u>-</u> square metres
Drill Sites: Total No.	<u>63</u>	Total disturbed area	<u>60,000</u> square metres
Other: <u>cut lines</u>		Total disturbed area	<u>9,900</u> square metres
Total Disturbed Area (square metres):			<u>121,825</u> square metres
Total Disturbed Area (hectares): (1 hectare = 10 000 square metres)			<u>12.2</u> hectares

- 4. EQUIPMENT TO BE USED (list size, capacity, and number):
  - (a) 4 - diamond drills
  - (b) 1 - rotary drill
  - (c) 1 - D-8 bulldozer
  - (d) 1 - D-7 bulldozer
  - (e) 1 - backhoe
  - (f) 7 - trucks - 3/4 ton

- 5. GOVERNMENT CLEARANCES INITIATED AT REGIONAL/DISTRICT LEVEL:
 

Forestry	Fish and Wildlife	Water Rights
Name of Official: _____	_____	_____
Title <u>District Forester</u>	<u>Regional Director</u>	<u>Regional Water Rights Engineer</u>
Location <u>Nelson</u>	<u>Nelson</u>	<u>Nelson</u>
Date Notified <u>by registered mail Oct. 8/76</u>	<u>by registered mail Oct. 8/76</u>	<u>by registered mail Oct. 8/76</u>
- 6. SIGNATURE OF APPLICANT [Signature] DATE October 8, 1976  
 Title Manager Exploration Company ELCO MINING LIMITED

FOR DEPARTMENT OF MINES USE ONLY

Terms and Conditions other than Guidelines \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Bonding Required (Permit is issued on receipt of bonding.) \_\_\_\_\_  
 \_\_\_\_\_  
 Approved by Advisory Committee \_\_\_\_\_ Date \_\_\_\_\_  
 Approved by Sr. Reclamation Inspector \_\_\_\_\_ Date \_\_\_\_\_  
 Date of Minister's Approval \_\_\_\_\_ Order-in-Council \_\_\_\_\_  
 Date Permit Issued \_\_\_\_\_

NOTE: When geotechnical and reclamation work have been completed for the calendar year, a Reclamation Report should be submitted to the Senior Reclamation Inspector in Victoria. For a sample of the format to be used see the Appendix of the booklet entitled, *Guidelines for Coal and Mineral Exploration*. The Reclamation Report will describe all work done and the details of the reclamation which was achieved. Two 1:50,000 NTS maps are required for the Report.