COMINCO CROWN GRANTS, ELK VALLEY

NTS 82J2W & J7W

Cominco Reports K-FORDING RIVER 7401A

Fording Operation

OPEN FILE
CONFIDENTIAL

JAN 8 1975

REFERRED TO	DATE	INITIAL
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M. REV.		
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ADC	9-1-75	
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#1

Dec 39 Coal Act

283

DEPARTMENT OF MINES AND PETROLEUM RESOURCES

Date: Jan 7/75

From: A.R.C. James.

To: Mr. A.R. Cooper, Administrator for Coal Mining Titles.

INSTRUCTIONS

- ☐ For your approval.
- ☐ For your information.
- ☐ For necessary action.
- ☐ Send me copy of reply.
- ☐ For your comments.
- ☐ Prepare reply for my signature.
- ☐ Prepare draft of reply.
- ☐ Return to me.
- ☐ Return to file.
- ☐ For signature.
- ☐ Wish to discuss.

REMARKS: Re Cominco Reports

I would recommend acceptance of the attached reports as appropriate to comply with Section 39 of the Coal Act in reference to the Crown grant coal lands, and also of the expenditure of $32,295.47 to be credited towards future extensions of the coal licenses as detailed.

10M (100)-872-6447 (4)

C O M I N C O   L T D.

EXPLORATION — WESTERN DISTRICT

GEOLOGICAL REPORT

ELK RIVER COAL
NTS 82 J 2/W and J 7/W
August, 1967

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[illegible]
Vancouver Expl'n. Office, Western District
September 11, 1967

COMINCO LTD.

EXPLORATION — WESTERN DISTRICT

GEOLOGICAL REPORT

ELK RIVER COAL
NTS 82 J 2/W and J 7/W
August, 1967

A. SUMMARY AND CONCLUSIONS

(1) Cominco Coal Leases in the Elk River area are almost wholly underlain by coal measures of the Kootenay Formation. Significant coal seams appear to be confined to a stratigraphic interval from 700' - 1000' to 1400' - 1700' above the base of the Kootenay formation. This interval is estimated to contain 40 feet total coal in seams 6 feet or greater.

(2) Structure makes all of the Aldridge block and part of the Greenhills block unsuitable for underground mining using present technology.

(3) Approximately 4½ square miles of the Greenhills block is probably underlain by the coal horizon dipping < 15°. One third of this coal would probably be below, and two thirds above an adit at 4600' (river level) elevation. A very rough calculation indicates total reserves of 180 m.t. over this area.

(4) Previous work has established the coal as being low volatile bituminous. Coking properties are unknown, but probably equivalent to the Fernie Basin, where coal varies from poor to good coking.

(5) Large scale stripping possibilities were not discovered during the course of the 1967 work.

B. HISTORY

Coal leases totalling approximately 40,000 acres were acquired by the C.P.R. about 1900 in the Elk and Fording River Valleys. In 1901, '02, and '03, a legal survey was completed by J. D. Anderson, P.L.S., of Trail, and preliminary open-cutting and drifting were done under the direction of C. H. Henretta. In 1904 Dr. A. W. G. Wilson of McGill spent six weeks on the ground, and submitted a comprehensive report. Dr. Wilson's assistant, T. S. Noble, returned in 1905, and did detailed geology on Lots 6047, 6048, 6049 (i.e. - the present are of interest). Drifting, prospecting, and open-cutting apparently continued until 1910, with Wilkin (Engineering Recce Report - 1907) and Stockett (Engineering Report - 1908) reporting during this time.

No work is on record from 1910 to 1937, at which time A. E. Jure spent approximately one month on the ground.

In 1939, two years of discussions with C.P.R. resulted in the acquisition by Cominco of 50% of the C.P.R. lands, and in 1947, C.P.R. transferred the remaining 50% of the coal leases to Cominco. Later that year, Cominco abandoned all but 7,362 acres of the original 40,000. The basis of ground selection at this time was accessability and coal quality, without regard for the affect of bedding attitude on mining.

In 1962, Henderson and Dahlstro.. of Chevron Standard published an interpretation of the structure immediately to the south of Cominco's holdings. This interpretation is the same as Wilson's 1904, and Noble's 1905 work, insofar as Cominco ground is concerned. It served, however, to focus attention on the Elk River Coal Basin.

In 1967, C.P.O.G. and MacIntyre-Porcupine applied for, and obtained, leases covering ground previously held by Cominco, and by the Imperial Coke and Coal Co. Ltd. At this time, Cominco proposed a re-examination of their own holdings, essentially to determine what effect the recent interpretation of structure might have in the attitude of the coal beds.

All activity is apparently prompted by the expanding Japanese market for Canadian coking coal.

C. OWNERSHIP - Cominco 100%.

7,362 acres in two blocks, the Aldridge block to the north and the Greenhills block to the south.

D. LOCATION - On the east side of the Elk River, 40 miles north of Natal, B. C., on a good all-weather gravel road passable from mid-May or June to late October. NTS 82 J 2/W½ and J 7/W½

E. PREVIOUS EXPLORATION Open-cuts, adits and geology 1902-10, 1937. See History.

F. PRODUCTION - Nil.

G. CURRENT OBJECTIVES

To determine if, and how much of, the area is underlain by coal-bearing sequences dipping at less than 15°, and to evaluate any possibility of strip mining. Only a limited amount of sampling was done. To determine fully the coking qualities, etc. would require an elaborate program of short adits to get samples from below the water table.

H. CURRENT EXPLORATION

The Cominco-held lands were mapped on a scale of ¼ mile to the inch on a base map compiled from 1:50,000 contour maps and ¼ mile drainage maps, using altimeter control. Some old data has been checked in the field, and an attempt has been made to trace coal seams by hand trenching at ¼ mile intervals along strike.

I. GEOLOGY

General Geology

For the purposes of this report, the Cominco coal lands in the Elk Valley can be subdivided into a northern (Aldridge) block, and a southern (Greenhills) block.

Almost all of this area is underlain by coal measures of the Cretaceo-Jurassic Kootenay formation. The extreme southwest corner of the Greenhills block is underlain by Jurassic Fernie shales which immediately underlie the coal measures.

Structurally, the Cominco leases lie in the Front Range sub-province of the Canadian Rockies. The Lewis Thrust lies about 10,000' below the leases, and crops out 10 miles to the east. Locally, Kootenay formation rocks are involved in a major syncline, about 5 miles wide, with fairly steep limbs and a broad, flat trough north of the north end of the Greenhills block. At the south end of the Greenhills block, a subsidiary faulted anticline occupies the trough, and another smaller anticline lies on the west side of the syncline and of the Greenhills block. The main fold plunges approximately 5° to N 10° W. The smaller folds plunge 5° to 15° to N or N 10° E, except at the south end of the Greenhills block, where the westerly anticline plunges N 10° W.

A major thrust, which brings Paleozoic carbonate members above the Kootenay, follows the toe of the slope along the west side of Elk River. On the east side of the major syncline, the Kootenay formation is underlain by a normal succession of Mesozoic and Paleozoic rocks.

Stratigraphy and Lithology

The following descriptions apply in detail to the Greenhills block. The Aldridge block is similar.

Fernie shales:-

The upper 400' of an unknown thickness of Jurassic shales is poorly exposed in the neighbourhood of the southwest corner of the Greenhills block. Here, the Fernie is composed entirely of grey-brown and dark grey non-calcareous, non-carbonaceous, thin-bedded shales. The contact with the overlying Kootenay formation was not observed.

Kootenay formation:-

The 4000' thick Kootenay formation is composed predominantly of continental sandstones, with some siltstone, shale, and coal of Creto-Jurassic age. It may be subdivided into two members. The upper one is characterized by 10' to 30' beds of orangey-tan weathering, fine to medium grained, sub-angular to sub-rounded, cross-bedded, laminated to thin-bedded quartz sandstone, often with calcareous matrix and argillite fragments, interbedded with 2' to 10' laminated to massive shale units containing minor siltstone, and occasional 1' to 2' (maximum observed 4') coal seams.

The lower member of the Kootenay formation is characterized by thick sandstones, 10' to 150' thick, interbedded with 10' to 300' sequences composed mainly of shale and siltstone, with minor sandstone and coal. The sandstones are both grey and orangey-tan weathering, thin to medium bedded, with sub-angular to sub-rounded quartz grains set in a matrix which is usually calcareous, occasionally siliceous. Cross-bedding, on scales from tenths of an inch to ten feet is common, and many sandstones contain argillaceous and limonitic fragments. Siltstones are dominantly calcareous, shales dominantly non-calcareous and commonly carbonaceous.

Facies changes are common and occur in short ($\frac{1}{4}$ mile) distances along strike. Markers based on detailed lithology are unknown. At least two of the sands, designated the Cliff Marker, and the #2 Marker, can be used roughly for stratigraphic control due to their cliff-forming character. The cliff-forming parts of the sand horizons vary stratigraphically along strike, however, due to lithologic variation in the sand. The Cliff Marker is apparently reliably traceable to within ± 100' stratigraphically, and the #2 Marker to within ± 75'. This order of accuracy is sufficient for work to date, as mapping control is no more precise.

Coal seams change thickness fairly rapidly along strike also, therefore fairly definite correlation is difficult without the aid of a trench every 500', and precise correlation impossible without a cat trench to continuously expose the seam. This year's budget did not permit work of such a detailed nature.

The upper Kootenay formation, approximately 2000' thick appears to have no economic potential for coal. The lower Kootenay, and in particular the section extending from 700' to 1000' above the base to 1400' to 1700' above the base, usually contains three to five seams of coal of economic significance. Total thickness of coal here probably varies between 30' and 50'.

The Cliff Marker fortuitously occupies a position near the base of this coal-containing sequence. Previous data indicates one significant seam below this marker. All 1967 trenching was confined to rocks above the Cliff Marker, and nearly all trenches were dug on the 400' to 500' of rocks between the Cliff Marker and the somewhat more nebulous #2 Marker. There is at least occasionally, one seam of possible significance above the #2 Marker. (See Trench Line #5 and Headquarters Creek sections)

It should be noted that the "important coal seams" shown on Sheet 1 of the ½ mile plan attached are probably better described as 50' stratigraphic intervals which commonly contain a coal seam 5' or greater in thickness.

Elk Formation:-

Overlying the Kootenay formation is a conglomerate sequence tentatively assigned to the Elk formation. The contact is exposed at elevation 5300', one mile north of Osborne Creek. Here the contact is apparently gradational over 50'. The conglomerate is composed of 1-10 cm, well-rounded, white quartzite pebbles and cobbles in a matrix of fine to coarse, sub-angular quartz sand cemented by silica and perhaps some clay. This outlier of Elk rocks is situated between the Greenhills and Aldridge blocks, and has no economic significance.

Structure

(1) Folding:

The Aldridge block lies on the east limb of the regional syncline, and dips vary from 30° to 60°. As these steep dips preclude underground coal mining with present technology, and as no obvious possibilities for strip mining on a dip-slope situation were noted, no detailed mapping was done.

The Greenhills block lies on the west limb of the regional syncline which here plunges flatly to N 10° W approximately.

Along the west boundary of the Greenhills block is a small anticline plunging 5°-15° N whose axis curves from N 10°-15° W at the south end of the area to N 10°-15° E at the north. This axis lies within, and on the west edge of, Cominco leases for the northern 5 miles of the 8-mile block.

In addition, a subsidiary syncline underlies the extreme SE corner of the block. This fold appears to die out rapidly down plunge to the north.

Dips associated with the east limb of the small western anticline are commonly in the neighbourhood 20°. In the rest of the block, dips are greater than 15°E in the area south of a line drawn from 2 miles north on the east side to 5 miles north on the west side. North of this line and east of the anticline, dips are less than 15° to the east and north.

(2) Faulting:

Regionally, all faulting in the area has been mapped as west dipping normal, west dipping thrust, or folded east dipping, originally west dipping, thrust faults. (Price (1962), Henderson and Duhlstrom (1962)

The one major fault mapped on the Greenhills block strikes about N 15° W, and raises the east side 400'-500'. The east block is strongly drag-folded for 100' east of the fault, while the west side is relatively undisturbed. The surface trace indicates a steep dip, perhaps to the east. The dragging appears to indicate a compressional, rather than tensional, origin and this supposition, combined with the equivocal

evidence of the surface trace, leads to the suggestion that the fault is an east-dipping, high-angle reverse fault. A possible attitude would be N 15° W/ 65° E. For the sake of simplicity, it has been assumed vertical on sections.

No other faults have been observed cutting the bedding at large angles, although it is very likely that some small ones do exist.

One thrust fault, dipping slightly steeper than the surrounding bedding, was mapped just south of Britt Creek. Displacement was about 40 feet vertically.

A number of similar structures with vertical displacements of 2' to 10' seem to occur throughout the area of interest in the Greenhills block. They are probably bedding plane features within the coal seams, however, and may not cause significant mining problems.

It should be noted that a major thrust fault, with the same strike as the bedding, could easily pass undetected with the precision and scale of mapping employed this season.

Coal

As previously mentioned, all known important coal seams are confined to a portion of the lower Kootenay from 700' to 1000' to 1400' to 1700' above the base of the formation. Hand trenching across strike at ¼-mile intervals over a strike length of 2 miles has established the continuity of this zone and suggested the continuity of some seams for at least 1 mile along strike. The placement of these trenches was guided by coal float, as the coal itself outcrops very poorly even in areas of 80% outcrop. In areas of less than 30% outcrop, some seams were undoubtedly overlooked. Due to rapid changes of lithology along strike, even closely-spaced (say 400' or 500') trenches would not allow positive correlation in many instances. The best technique in future would be to continuously expose a seam along strike with a bulldozer.

The zone of interest probably contains one or two 15' to 20' seams, and one, two, or three 6' to 10' seams. Dip extension will have to be tested by drilling and/or drifting. Noble's (1905) section on #4 Gully (the big draw in the south center of L-6048) suggests at least 1500' of dip extension in an area now covered due to post-forest fire soil movement.

The existance of good coal in the same stratigraphic interval on C.P.O.G. ground, 5 miles to the east, makes the chances for 1 mile of down-dip continuation on Cominco ground appear quite good.

A tonnage calculation was made based on an average thickness of 40' total mineable coal, a tonnage factor of 27, considering areas with dips of less that 15°, with the assumptions that:-

(1) Dips 15° on surface indicate dips 15o at depth.

(2) The ¼-mile sections, and therefore the structure contour map constructed from them, are essentially correct.

This calculation yields figures of 120 m.t. above and 60 m.t. for 600' below an adit driven at elevation 4600' (i.e. river level west of L-6048). This figure would be increased by a greater total thickness of coal, or decreased by thinner coal, by the inaccuracy of assumptions (1) and (2), and by the presence of blocks unmineable due to adverse structural conditions.

In addition, comparitively minor changes in sections F and G would change the ratio of coal above and below the 4600' level quite considerably.

The following is considered to be evidence in favour of accepting assumptions (1) and (2) for the present:-

Sections were constructed by:

(1) Plotting a stereo-net of bedding and jointing in order to interpret fold geometry.

(2) Checking this interpretation against mapped bedding attitudes. In no case was any major difference noted.

(3) All attitudes from ½ mile either side of the section were projected to the section along the apparent dip in the direction of fold plunge.

(4) The apparent dip in the plane of the section was plotted at the elevation obtained in step (3).

An inspection of sections A to J shows that very few anomalous attitudes occur.

(5) Contacts and markers were drawn to conform to outcrop elevation and projected dips.

A check on the method was afforded on section "I" where the position of the Fernie-Kootenay contact plotted by projection coincided with the known outcrop position of this contact.

Evidence against assumptions (1) and (2) comes from Newmarch (1953), who suggests that the lower part of the lower Kootenay is commonly more structurally complex than the upper Kootenay. On this basis, observed flattening of dips going east in the Greenhills block may be a function of stratigraphic position, rather than of fold geometry.

Testing of these assumptions would require drilling and/or drifting.

Sampling:

Three coal seams were sampled. Two of these had previously been sampled by Wilson. Good correlation is seen on one seam, poor on the other. Further check sampling of old data is required. Considerable digging will be required to check sample any other locations. As this digging would have added little to our knowledge of continuity it was not done in 1967.

The following table shows the analyses of samples taken this year and comparison with previous samples:-

ASSAY TABLE

Seam	Sampler	Mois %	Vol %	Ash %	F C %	P%	S%
Gill 8	Wilson '04	0.7	20.5	22.6	56.2	0.038	0.60
Gill 8	Cominco '67	7.4	26.1	11.4	62.5		
Gill 20	Wilson '04	1.0	24.2	7.4	67.4		
Gill 20	Cominco '67 (avg)	4.5	20.0	6.3	65.2	.033	0.42
Trench #5-18'	Cominco '67 (avg)						

J. RECOMMENDATIONS

(1) If the possible reserves are of acceptable size, and if no prohibitive mining difficulties are recognised in the present structural picture, bulldozer stripping should be used to ascertain continuity.

(2) Underground coking samples should be obtained.

(3) More accurately controlled geological mapping done at 400' or 500' scale.

(4) If this work is encouraging, down-dip and down-plunge projections must then be tested by drilling and/or drifting.

(5) If definite planning for a mine is undertaken, small tonnage stripping, drifting possibilities on the Aldridge block should be thoroughly examined.

(6) This years campsite, or the area at Britt Creek Ranger Station, will do for a large tent or trailer camp. Mr. Don Cook, of Thomas Cook and Sons, Pincher Creek, Alberta, gave Shell Oil very satisfactory service on seismic trail bulldozer work in the area. C.P.O.G. has had some problems with a Cranbrook contractor.

(7) A 400 or 500 scale contour map at 25' or 50' intervals should be prepared from twenty chain photos, and we should enquire into the possibility of renting a base station continuous recording American-Paulin altimeter to use in conjunction with the field model for mapping control.

(8) C.P.O.G. is doing their underground work with a crew from newly acquired Lethbridge Collieries. If it proves difficult for us to hire experienced coal miners for a short term project, something might be arranged with C.P.O.G.

(9) Water for diamond drilling will be a problem except during June and early July. C.P.O.G. experience under similar conditions on Lewis Creek may be useful to us.

Fernie is a more satisfactory supply point than Natal.

K. OUTSIDE ACTIVITIES

(1) Shell Oil is shooting deep seismic on lines on Lewis (Kilmarnock), Henretta, Aldridge, and Weary Creeks.

(2) A visit was made to the C.P.O.G. camp on Lewis Creek on August 14th. At present there are about 24 men on the property. Equipment includes three large bulldozers, a compressor, and a truck-mounted convertible rotary-diamond drill.

Development to date consists of hand and cat stripping, road building, and the driving of 50' of a projected 120' adit. The first of three, 600' drill holes will be collared in the near future. Geological mapping at ½-mile scale has covered about 10 square miles to date.

Stratigraphically, the C.P.O.G. coal, as on our ground, lies in a 700-foot section of the Kootenay formation, commencing 700' above the base of the formation. Some coal is exposed between the base of the formation and the 700' horizon, but it appears to be lensy, and of poor quality. Note: New basal seam of good coal about 26' thick approximately 300' above the base of the Kootenay. 14 Sep. 1970 [illegible]

In the favourable 700' section, C.P.O.G. has a basal seam (the 19) which varies from 15' to 21' and which has been traced 3 miles along strike. The adit is being driven on this seam. Above this, there are the following seams (and perhaps some others):- the Dirty 17, 31, 13 and the 2. All numbers apparently refer to thickness at the discovery point. These seams above the 19 are not as continuous or consistent as the 19, but some at least, are traceable for distances ranging from 1 to 3 miles.

The favourable stratigraphic interval appears to correlate with the favourable stratigraphic interval on Coalinco ground in the Greenhills range, and probably with the best coal in the Aldridge block also.

Structurally, the C.P.O.G. area of interest lies in the trough of a syncline on the east side of the Elk River Coal Basin. The flat (15°) dips in this trough extend about 3/4 mile from west to east, and the trough itself extends at least 3 miles N 10° E from Lewis Creek. To date, little work has been done on the south extension, where possibilities for another 1-2 miles of plunge extension exist.

The fold plunges 8° or 10° to N 10° E, and the favourable part of the Kootenay formation is exposed from 6400' to 7100' elevation on the north side of Lewis Creek about 1½ miles up the creek from its junction with the Fording River. Minor folds and faults are so far unrecognized.

A figure of 50 million tons of coal for the 19 seam was mentioned. This would be for the area north of Lewis Creek. No details of the calculation were mentioned.

Project manager, Glen Rushton, was away at the time of the visit.

(3) MacIntyre-Porcupine is said to be interested in stripping possibilities only. Work to date on Line Creek is rumoured to have turned up steep dipping beds only. No visit was made.

REFERENCES

Summary Report
Elk River Coal Lands
A. deVoogd, 1967.

The above report contains a comprehensive bibliography. The most important references are Wilson, Noble, Jure, Newmarch, Dahlstrom and Henderson, Price, and deVoogd.

ATTACHMENTS

(1) Location Plan	1" = 10 mi.	Plate ER-0
(2) Tenure Plan	1" = 2 mi.	Plate ER-1
(3) Geology Plan	1" = ¼ mi. 2 sheets	Plate ER-4,5
(4) Sections A - J inclusive.	1" = ¼ mi.	No Plate II
(5) Sections on Hq. Creek and		
(6) Trench line 1 - 7 inclusive	1" = 100'	Plates ER 6-13 incl.
(7) Plan of Structure Contours on Cliff Marker	1" = ½ mi.	Plate ER-14
(8) Section through Lewis Creek, 1:-50,000		Plate ER-15
(9) Stratigraphic Column	1" = 500'	Plate ER-16

Report By: "M. R. Wolfhard"

Endorsed By: J. Richardson

MRW:mk
Vancouver Expl'n., Western District
September 11, 1967.

Distribution

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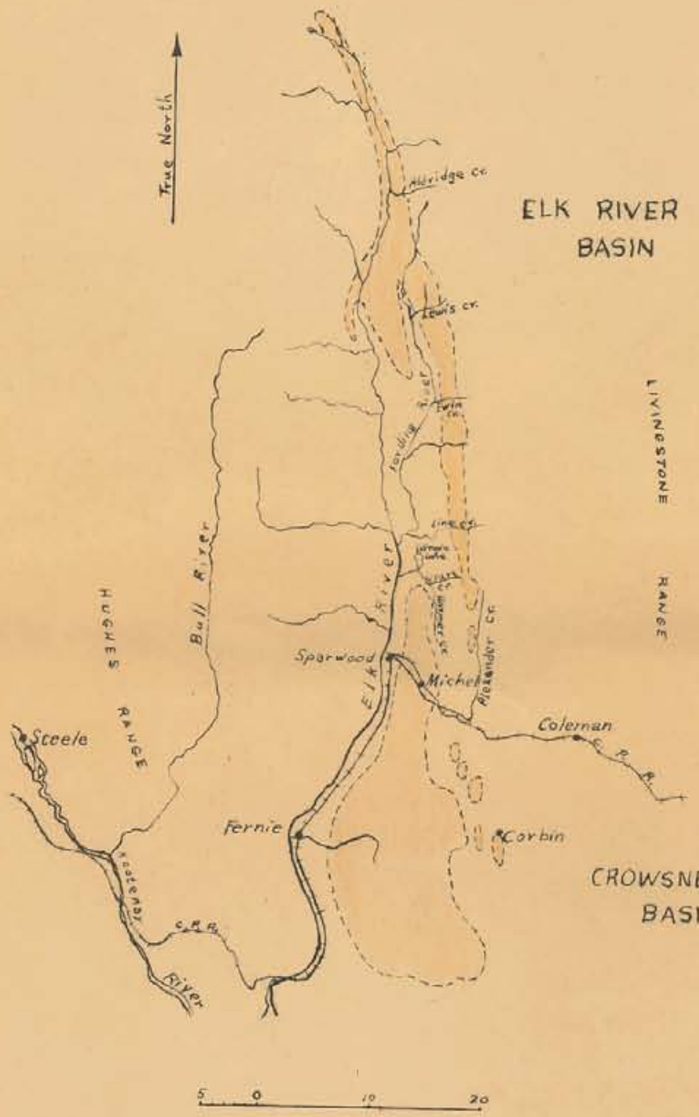


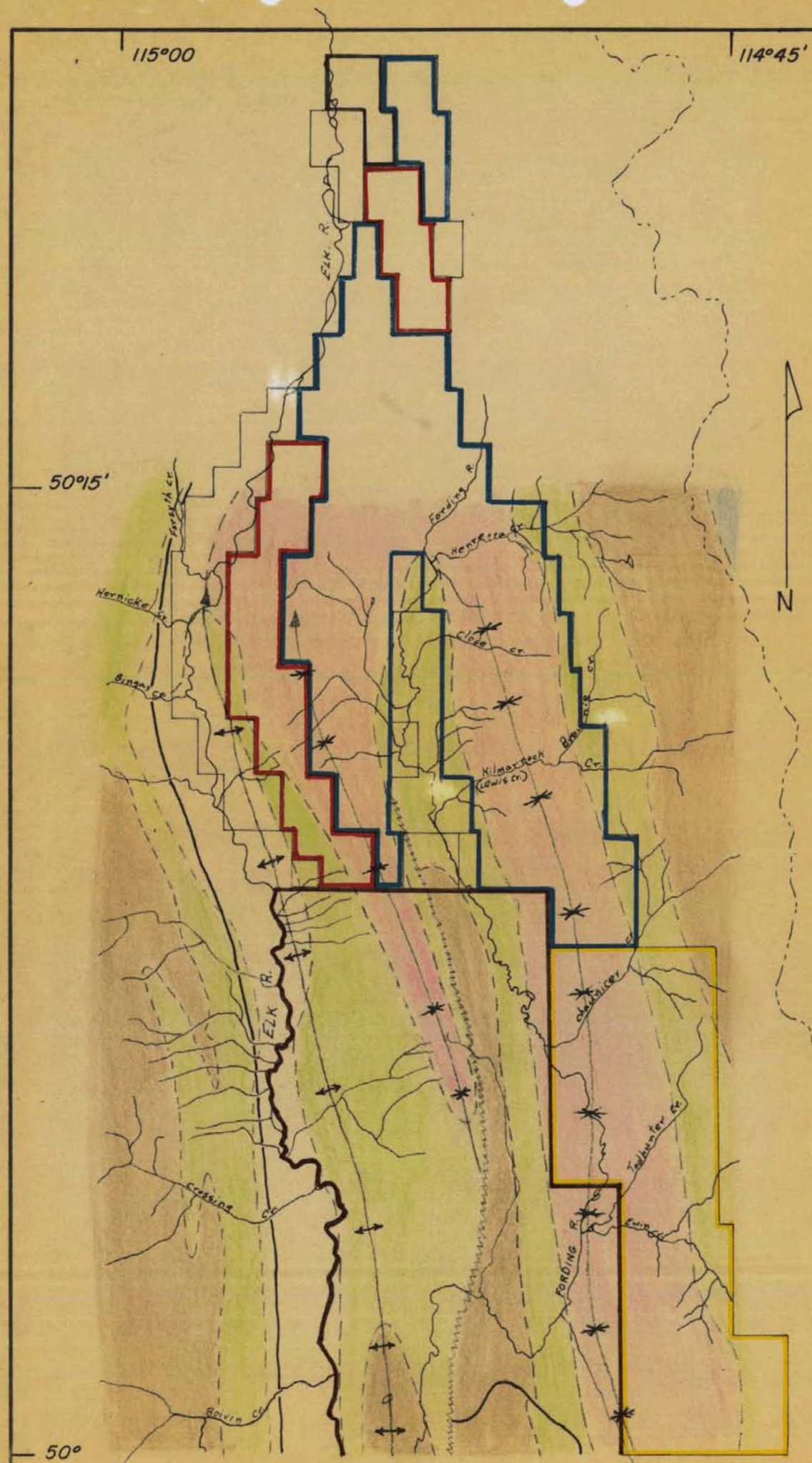
K-COMINCO-ELK RIVER 74(1)A.

The Consolidated Mining and Smelting Company of Canada Limited

DRAWN BY:		TRACED BY: DAUE R.	
REVISED BY	DATE	REVISED BY	DATE

CROWSNEST and ELK RIVER COAL BASINS

SCALE: as shown | DATE: Feb. 15 1967 | PLATE: ER-0



CRETACEOUS Kootenay formation

JURASSIC Fernie shales
TRIASSIC

PERMO – PENN.
MISSISSIPPIAN

DEVONIAN

Geological contact

Thrust fault

Normal fault

Syncline

Anticline

Owned by Cominco
Previously owned by Cominco
Under application by C.P.O.G.
Under application by McIntyre
Owned by Crowsnest
Owned by other interests

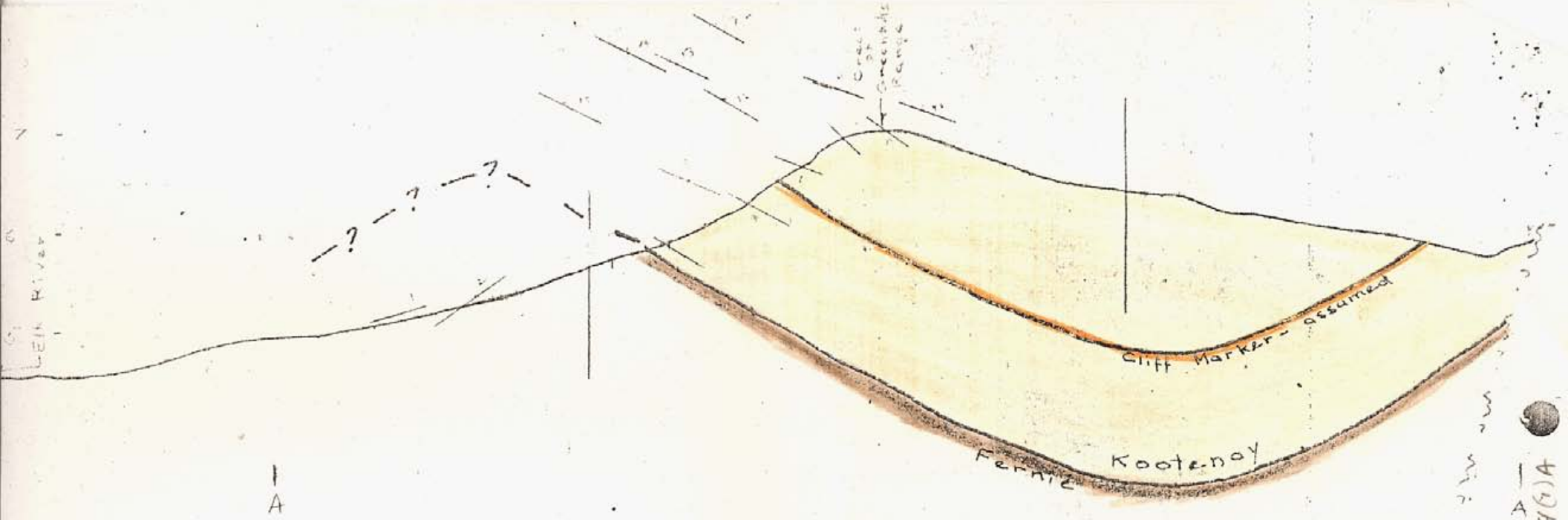
K-COMINCO ELK-RIVER 74(1)A

Cominco

Drawn by:		Traced by: Jane R.	
Revised by	Date	Revised by	Date

ELK RIVER COAL FIELDS

Scale: 1" = 2 mi. | Date: JAN. 1967 | Plate: ER 1



Section A-A'

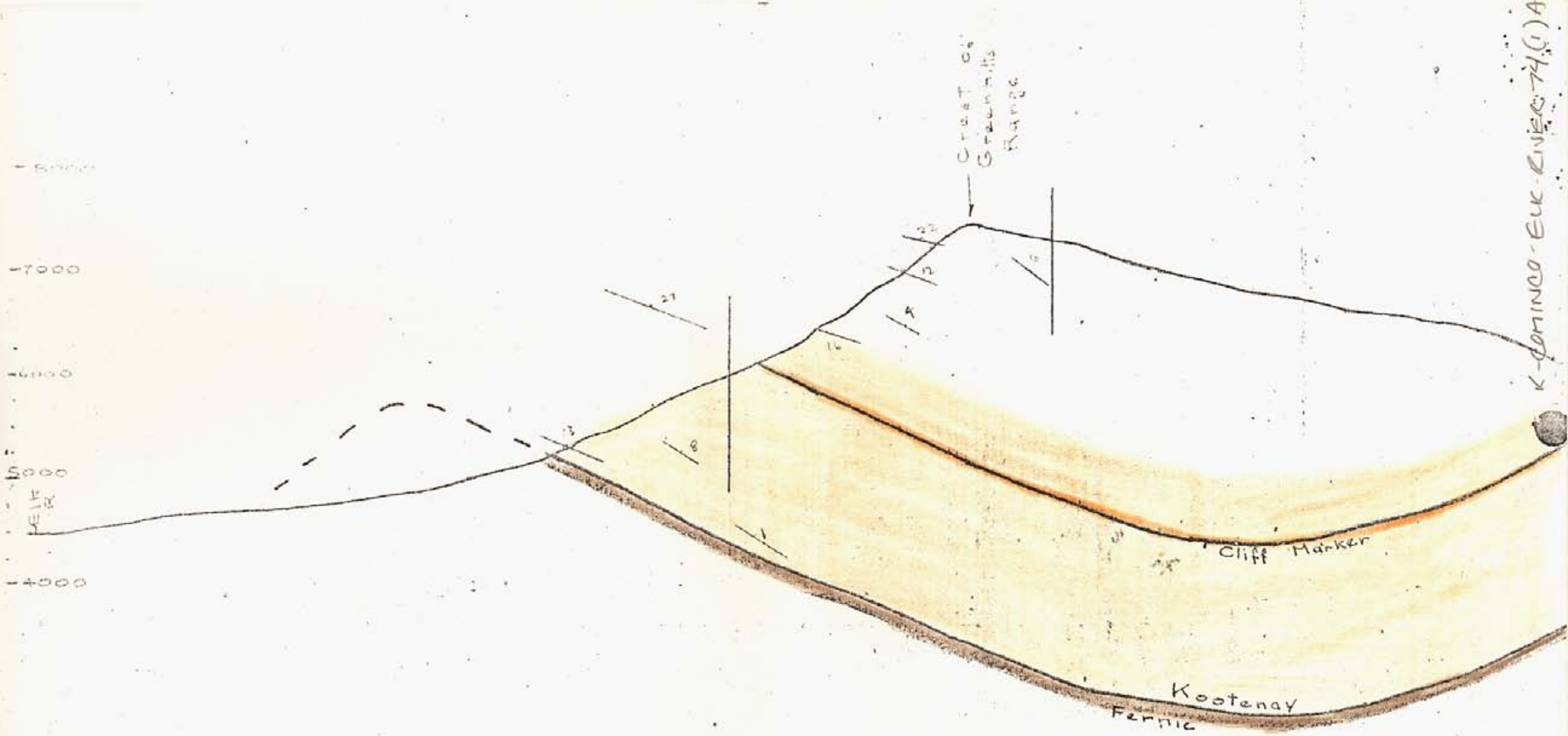
Elk River Coal

July 31/67

MRW + GMW

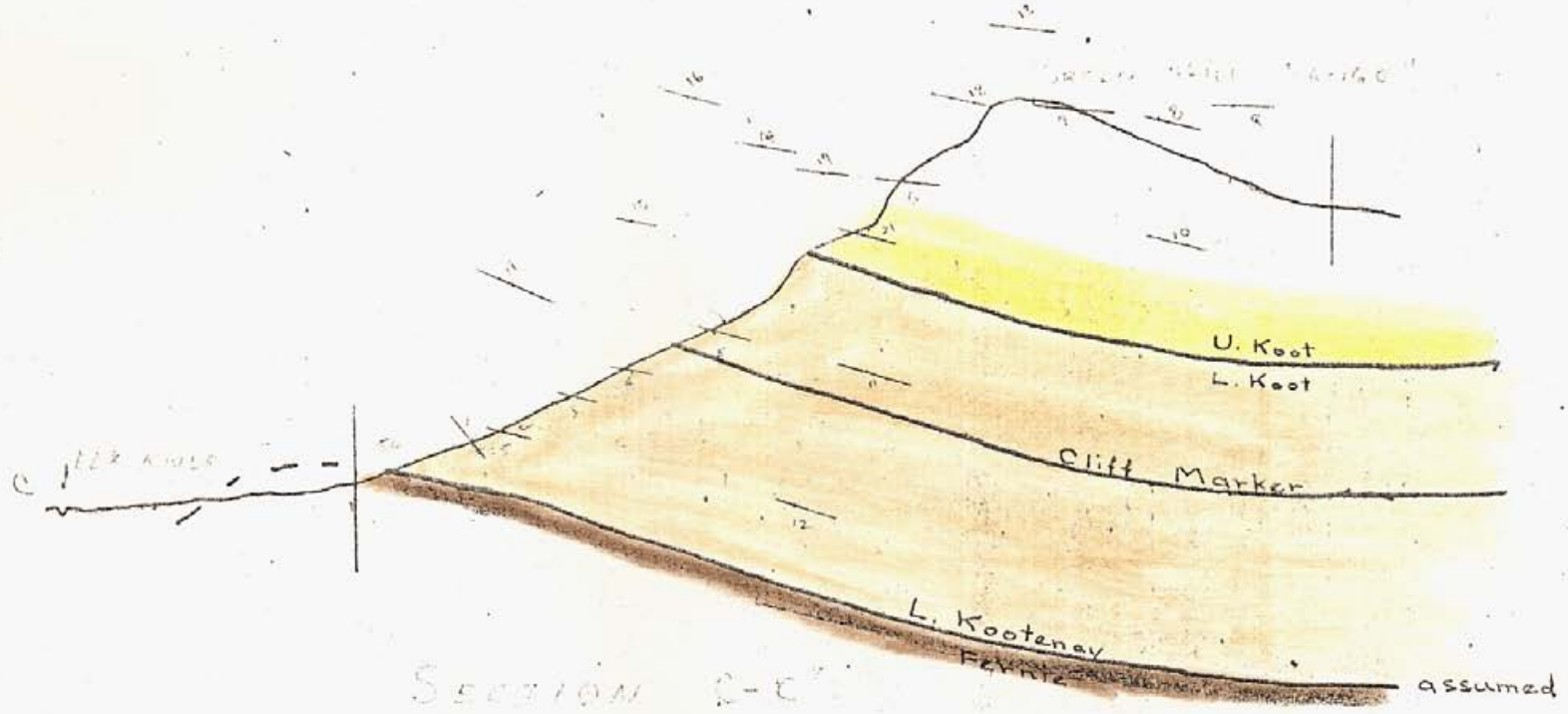
1" = 1/4 mile

KOOTENAY-ELK RIVER 79(1)A



Section B-B'

Elk River Coal
1"=1320'
July 31/67
MRW + GMW
Vert. scale 0.95"= ¼ mi.



SECTION C-C'

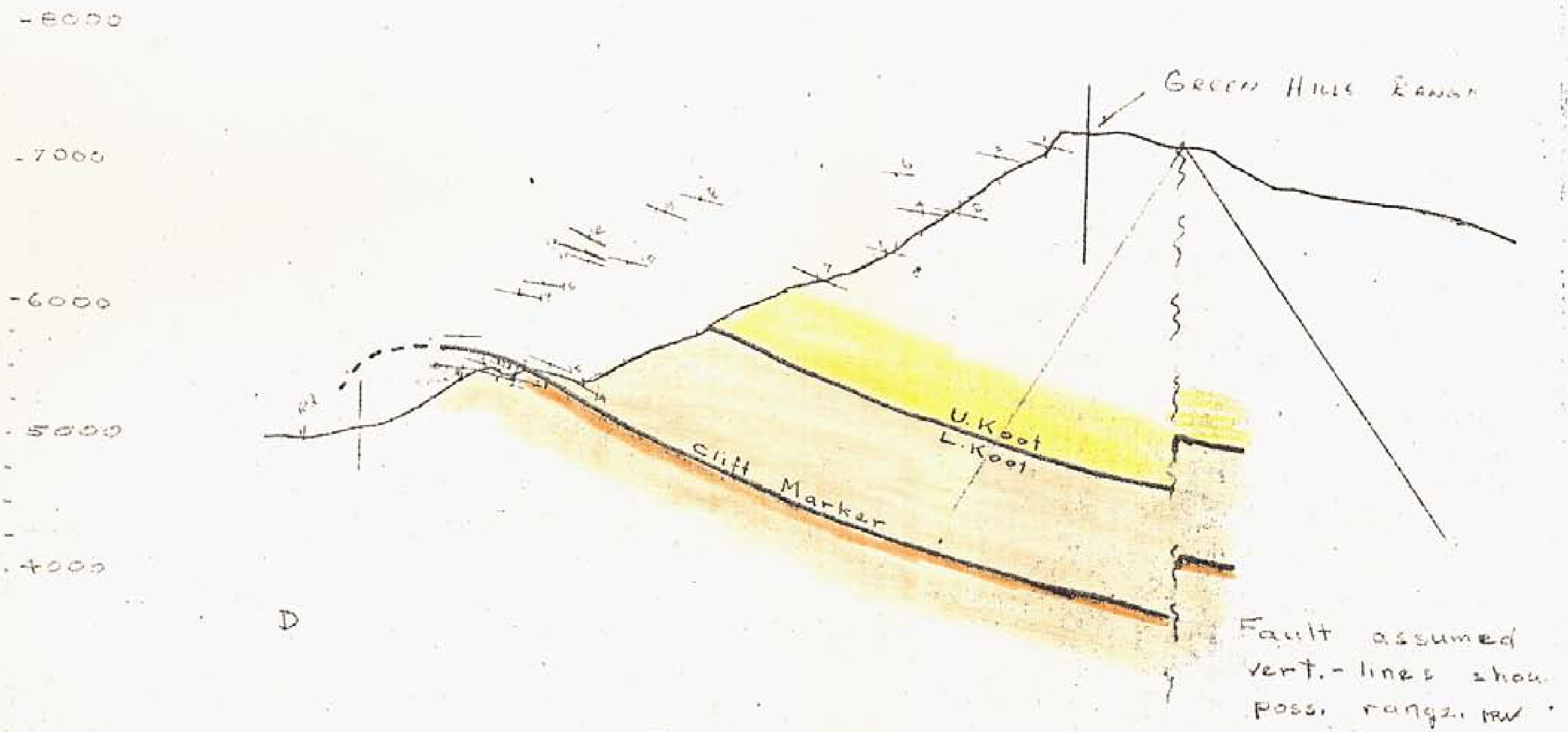
ELK RIVER COAL

1" = 1320'

Aug. 9 1962

WCK + MRV

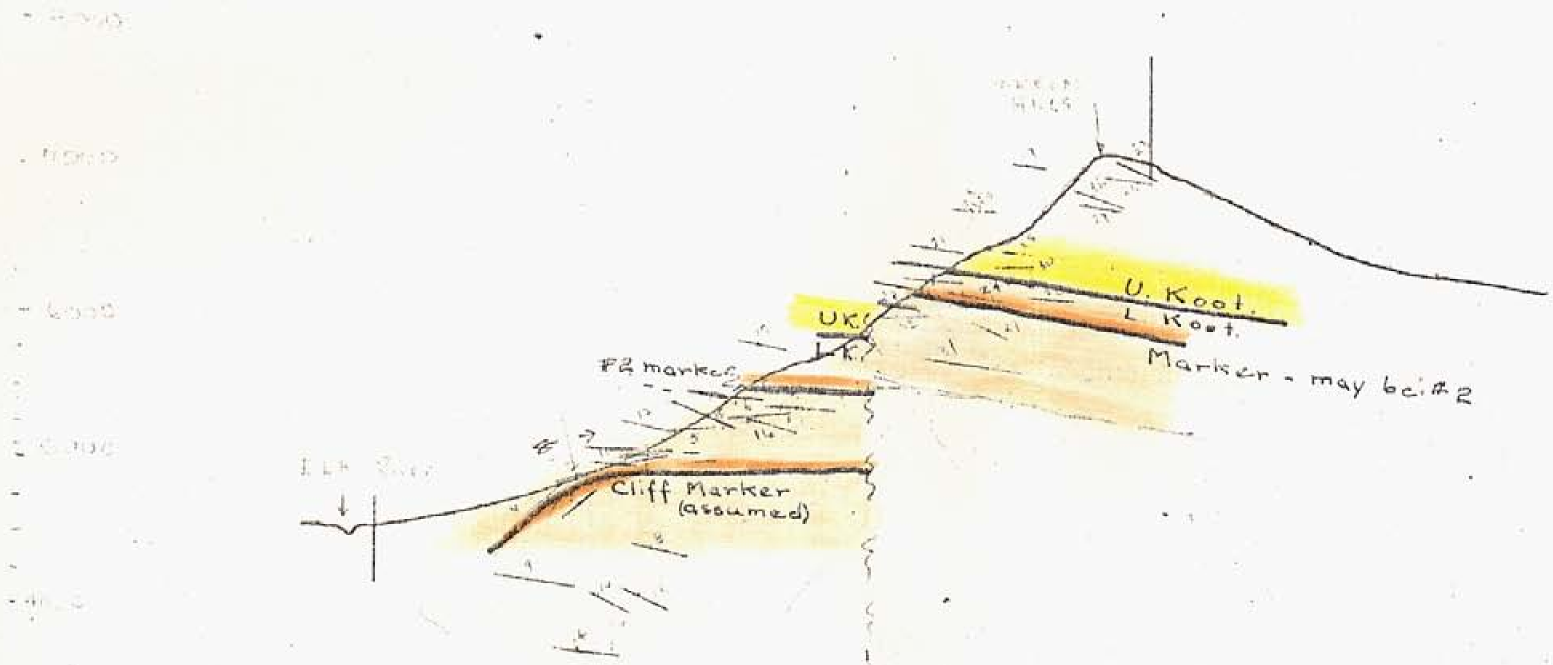
K-CONINCO - ELK RIVER 74(1)A



SECTION D-D'
ELK RIVER COAL
1" = 1320'
Aug 5-67
WILK
MRW

W — E

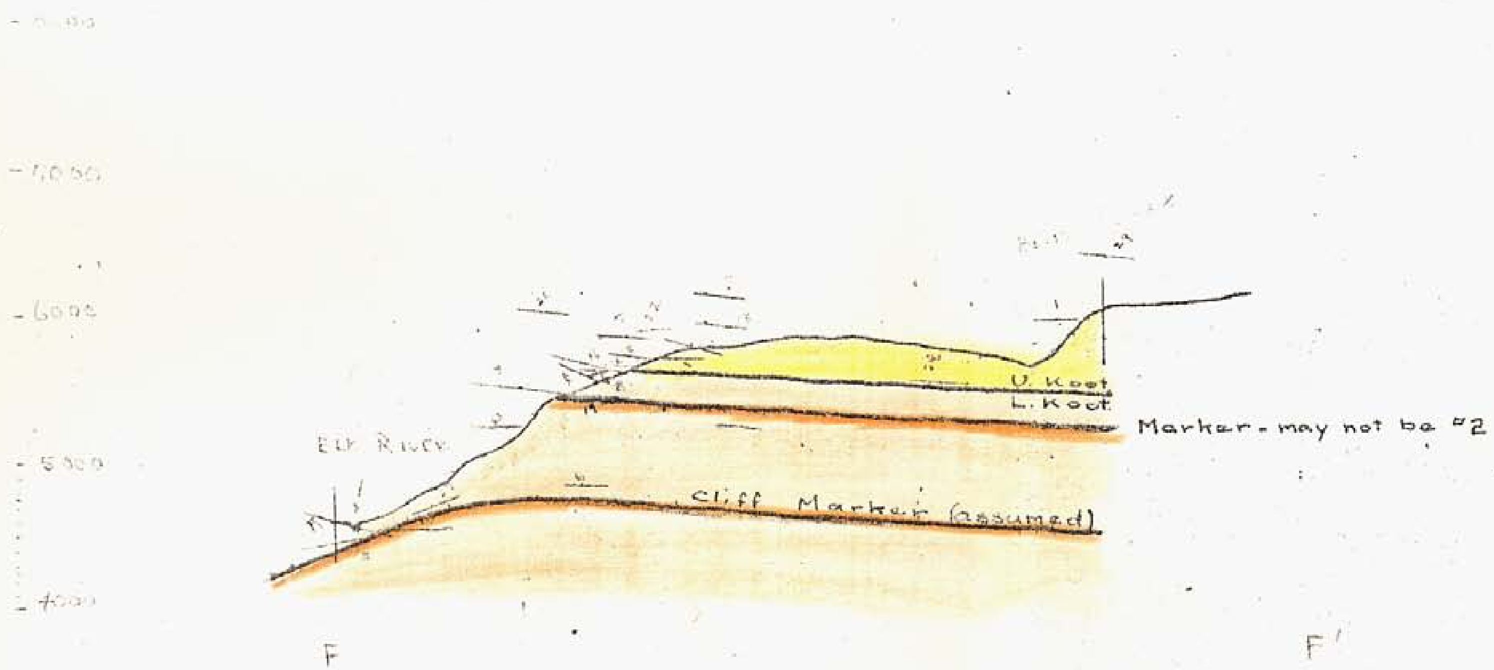
K COMINCO - ELK RIVER 74(1)A



Fault assumed, vert. lines show poss. ...

SECTION E-C'
ELK RIVER COAL
1" = 1320'.
Aug 5-67
Wilk - ?w

K-COMINCO. ELK RIVER 74(1)A



Section F F'
Elk River Coal
1" = 1320'
Aug -67
Wilk + KRW

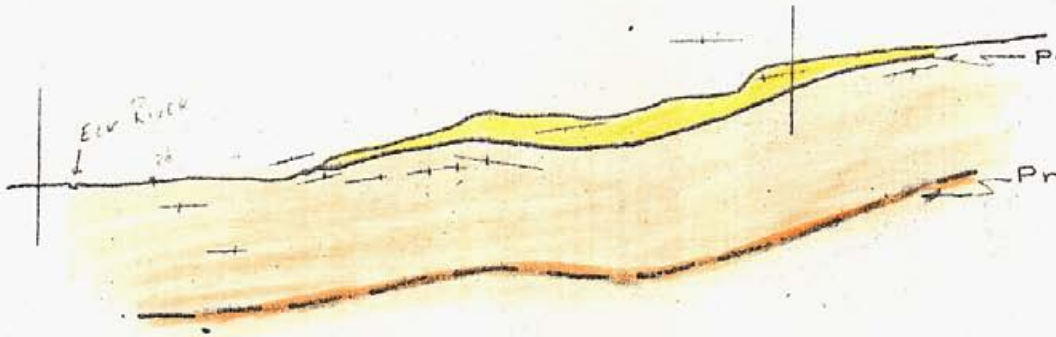
W E

K-COMINCO - ELK-RIVER 74(1) 4

-6000

-5000

-4000



N

SECTION G-G'
ELK RIVER COAL
1" = 1320'
Aug 5-67
WILK - MRW

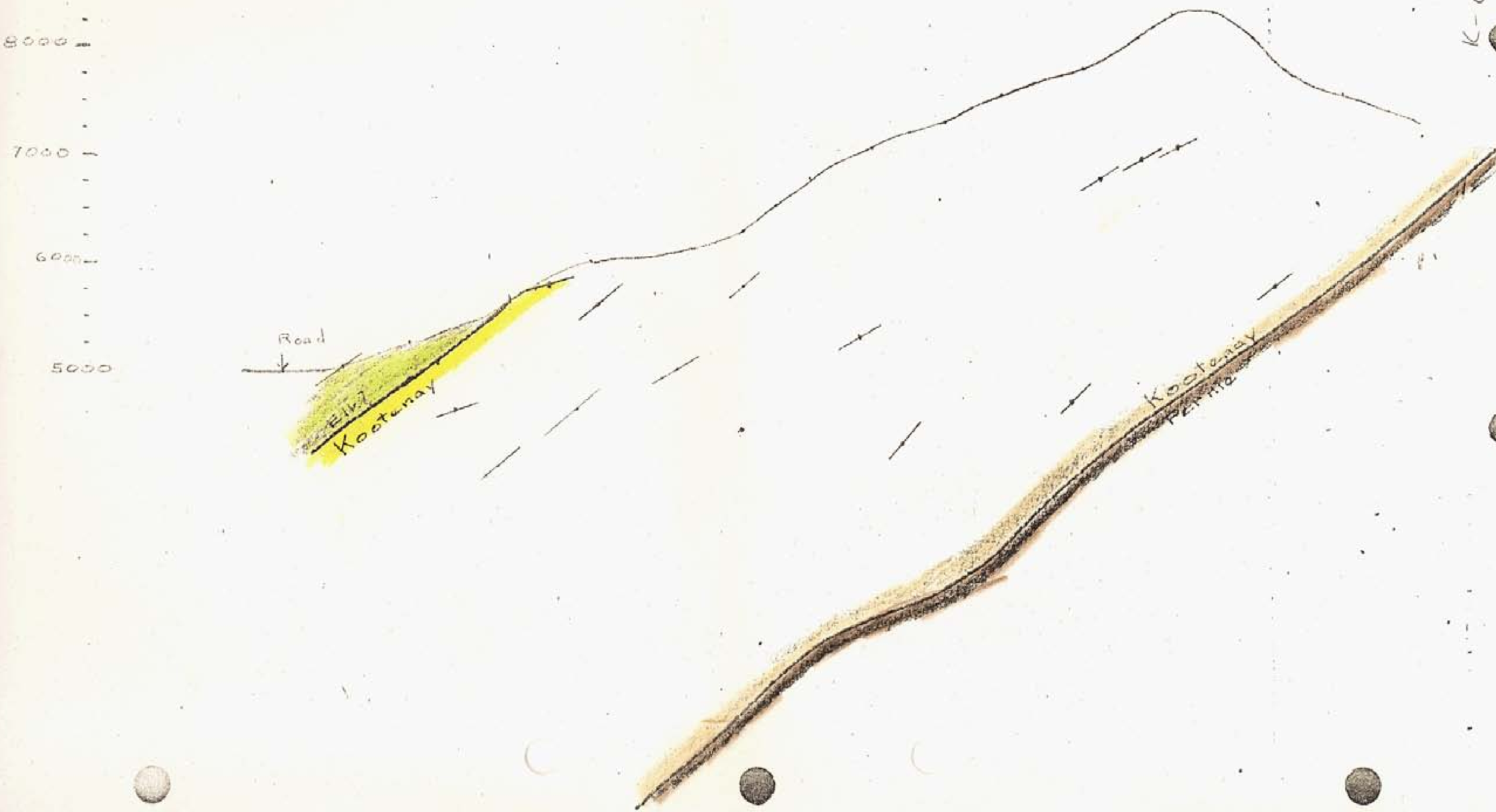
ELK River COAL

Section H-H'

1" = 1/4 mi

Aug 19/67

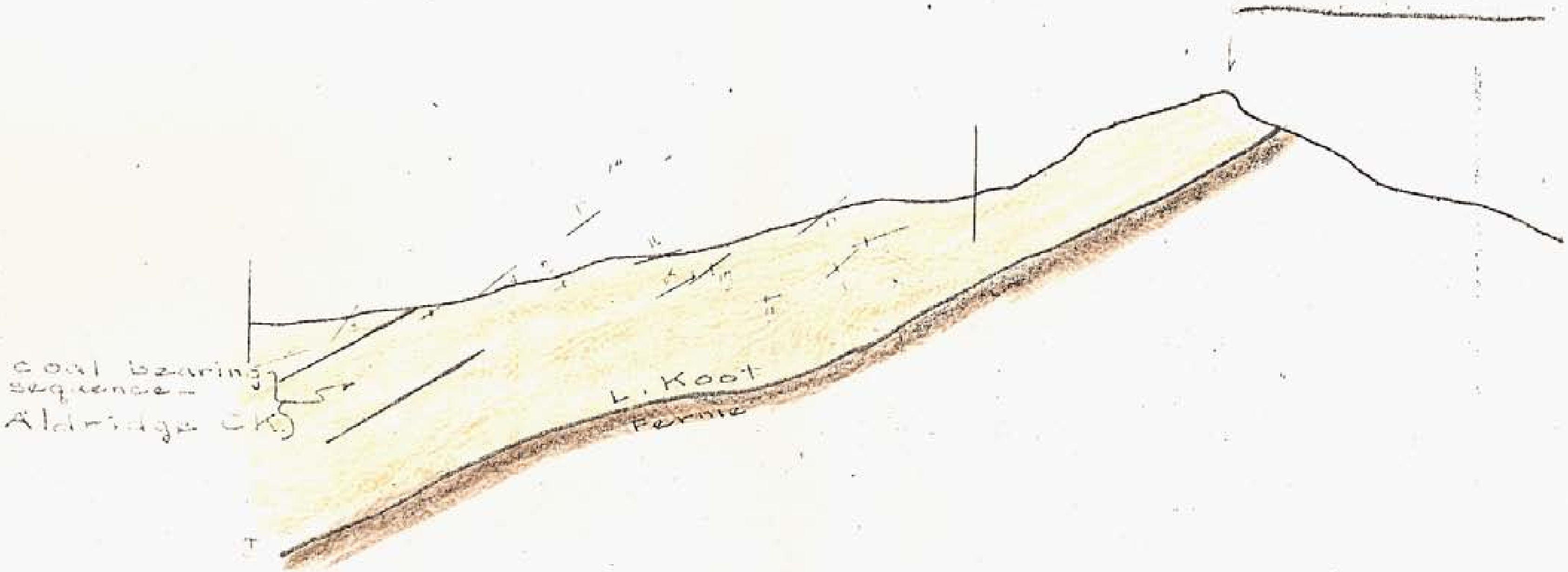
MRW



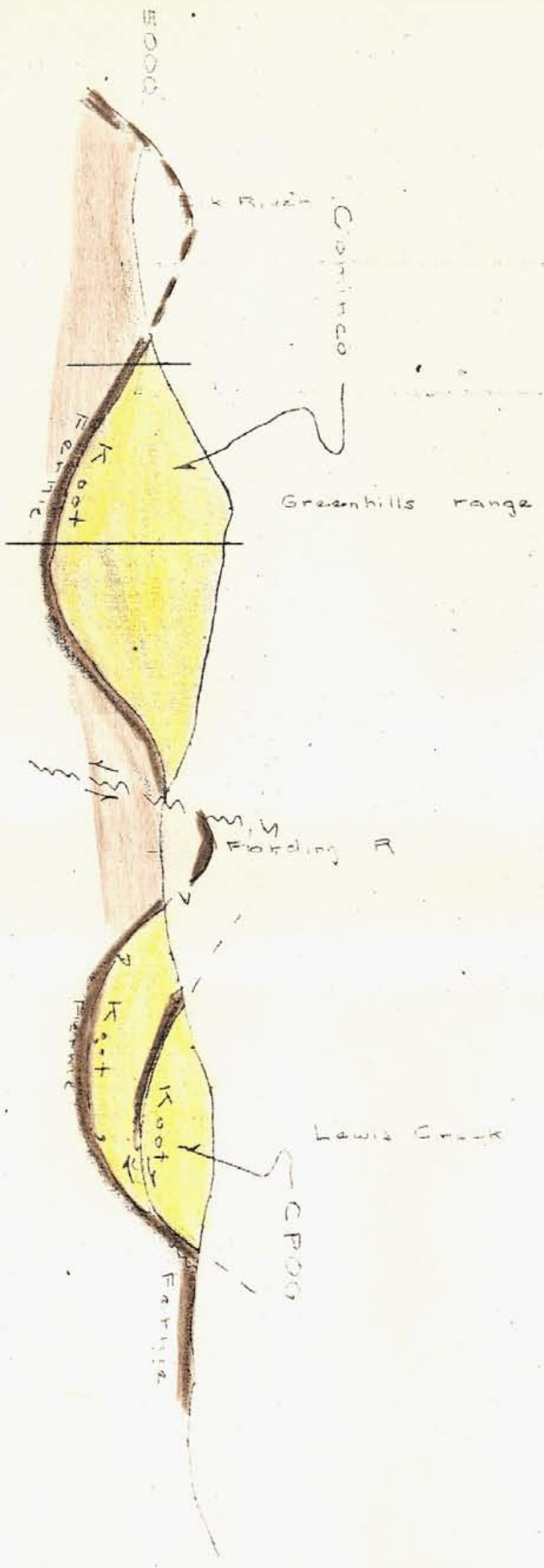
K-Cominco-Elk River
74 (1)A

SECTION I-I'
ELK RIVER COAL
1" = 1500'
Aug 5-67
Wilk + MRW

K-Cominco-Elk River
74(1)A



Section J - J'
Elk River Coal
1" = 1320'
August 5 - 64
Wile & MW



K-COMINCO-ELK RIVER 7411A

The Consolidated Mining and Smelting Company of Canada Limited

DRAWN BY: MPW		TRACED BY:	
REVISED BY	DATE	REVISED BY	DATE

ELK RIVER COAL

Section - possible structure
Lewis Cr to Elk. River
NTS 82J/2W

SCALE: 1:50,000 | DATE: | PLATE: ER-15

COMINCO 210-0610

TR Line 6

K- COMINCO - ELK RIVER 74 (1)A

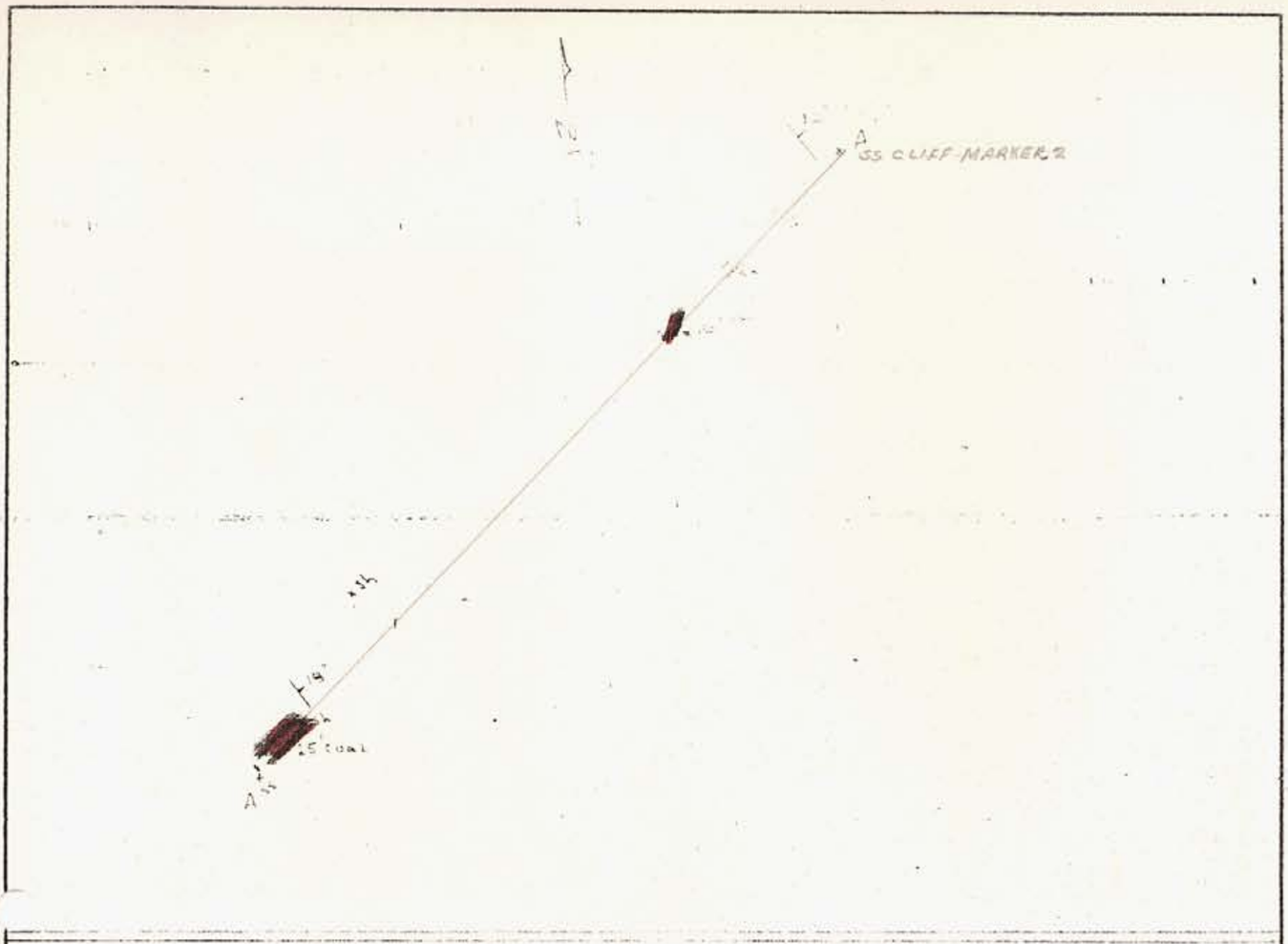
The Consolidated Mining and Smelting Company of Canada Limited

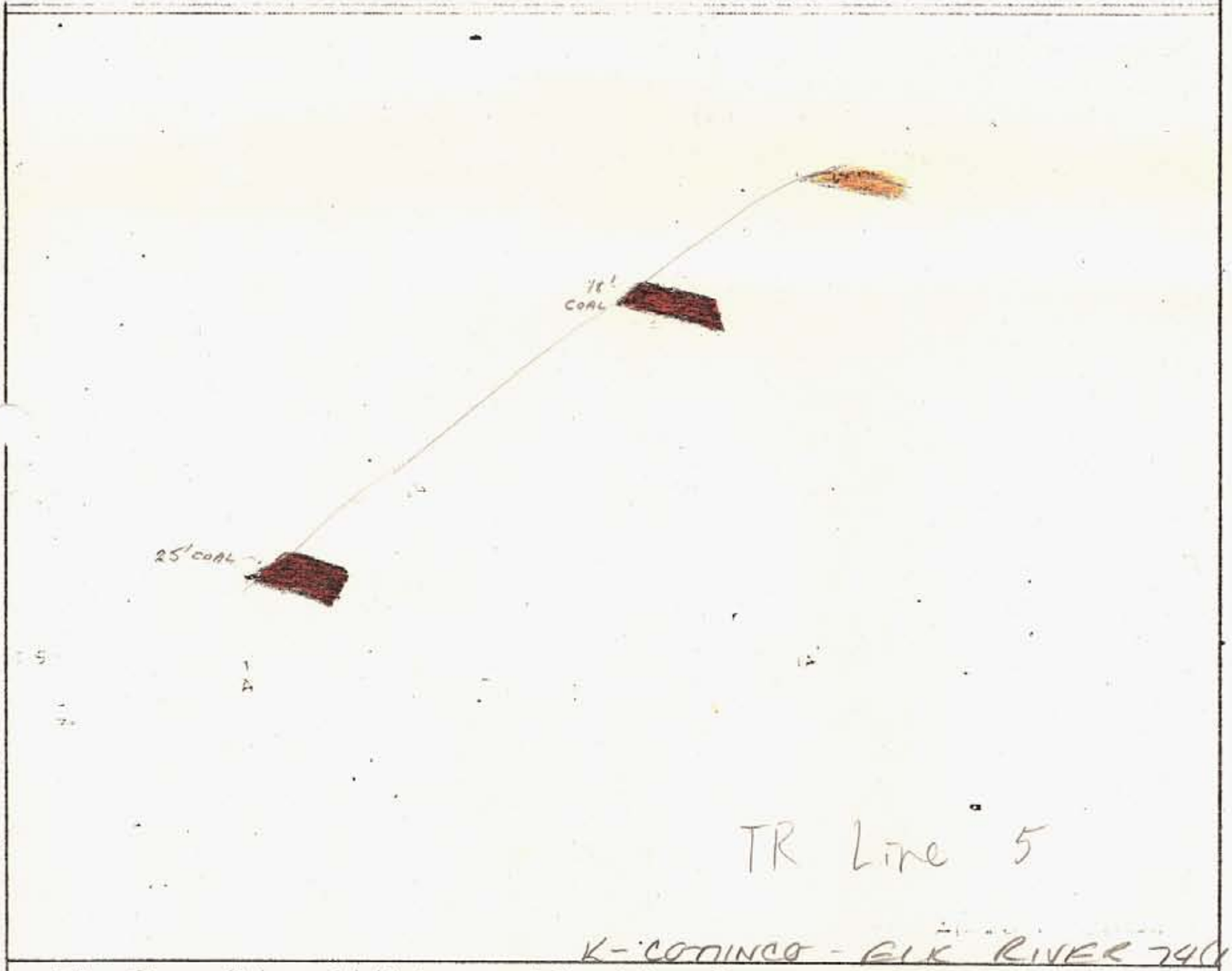
DRAWN BY:		TRACED BY:	
REVISED BY	DATE	REVISED BY	DATE

ELK RIVER COAL

TRENCH LINE NO 6

SCALE: DATE: PLATE:





TR Line 5

K-COMINCO - ELK RIVER 74(1)A

The Consolidated Mining and Smelting Company of Canada Limited

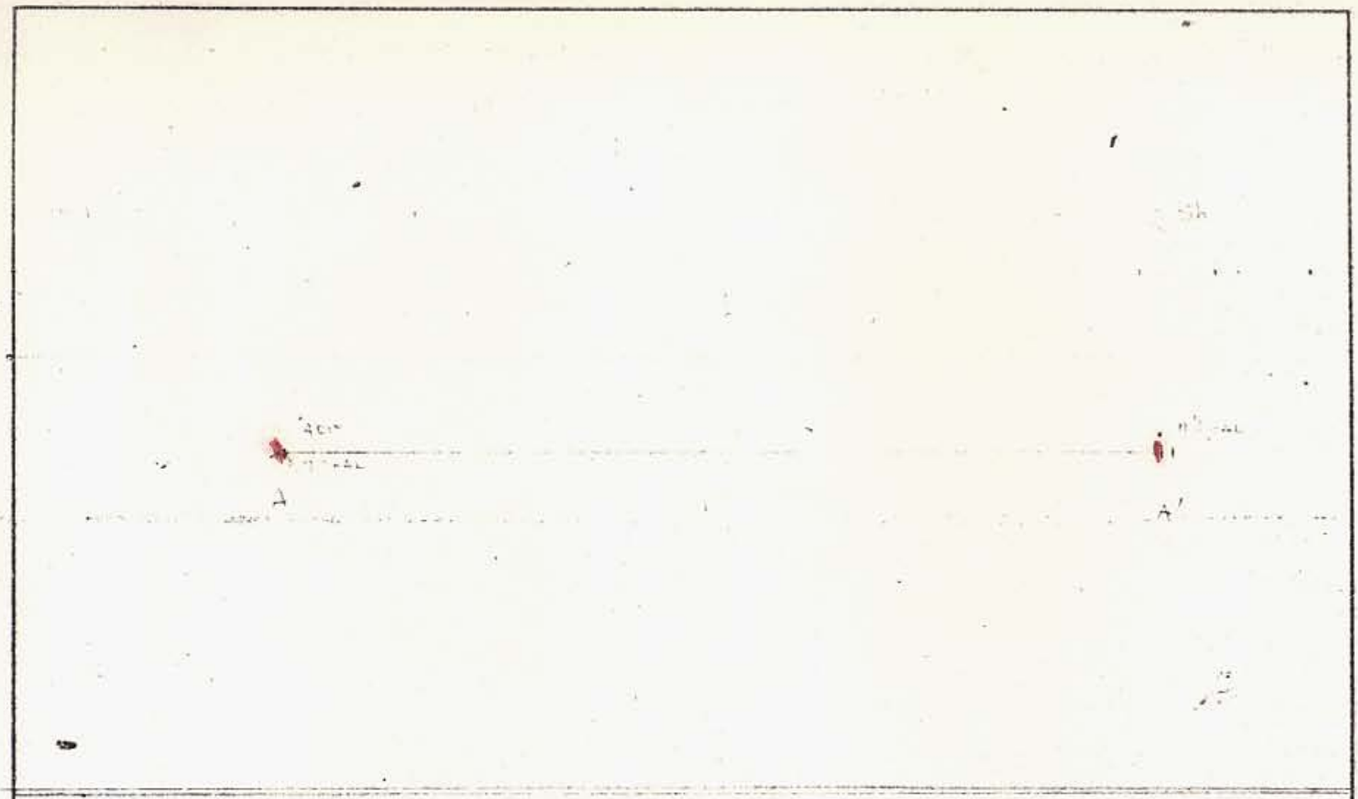
DRAWN BY:	TRACED BY:	
REVISED BY DATE	REVISED BY DATE	

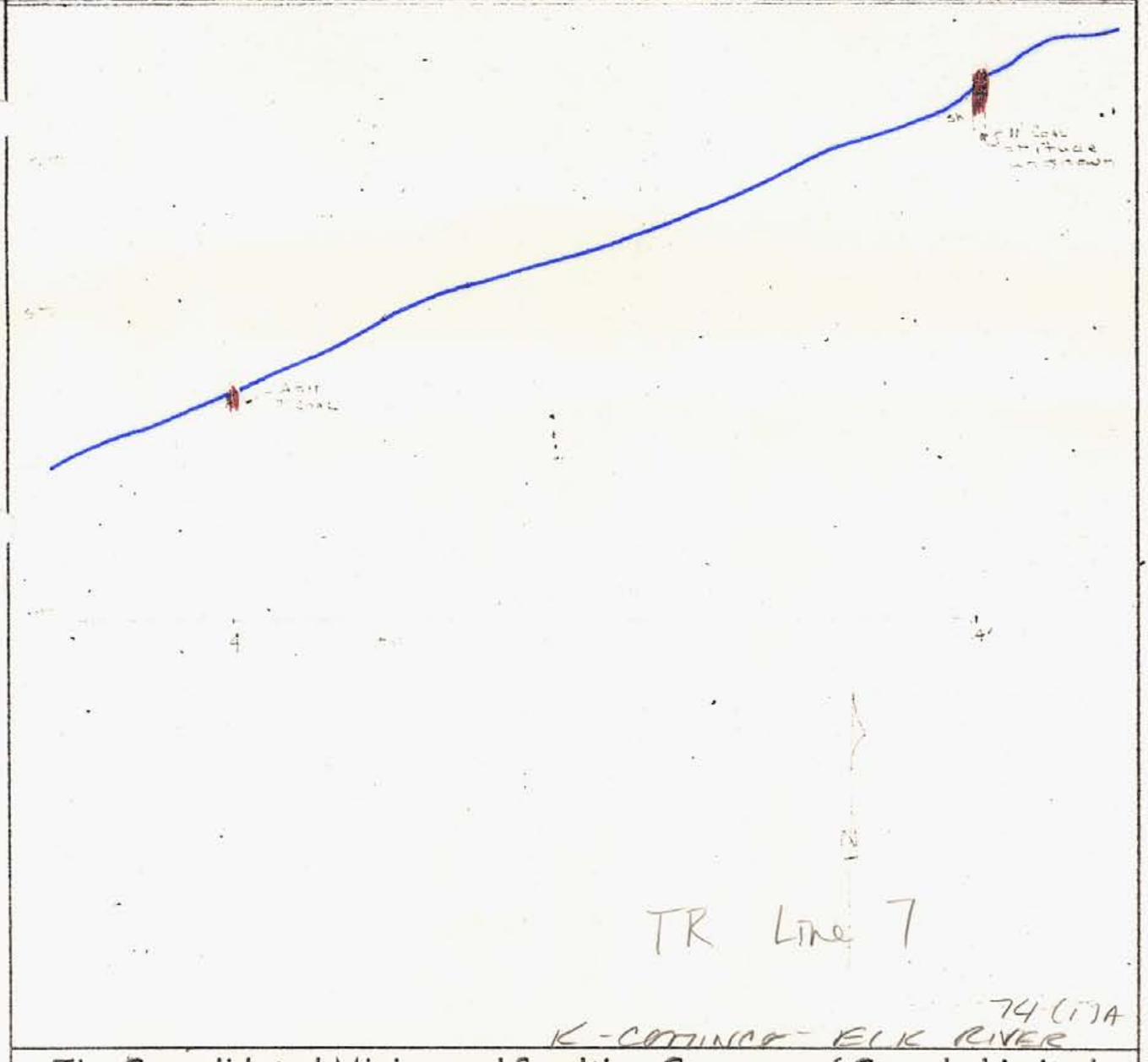
ELK RIVER COAL
PLAN and SECTION
TRENCH LINE No. 5

NTS 82J/W

SCALE: 1" = 100 | DATE: Aug 18, 1967 | PLATE:

COMINCO 210-0610





TR LINE 7

74 (17)A

K-COMINCO - ELK RIVER

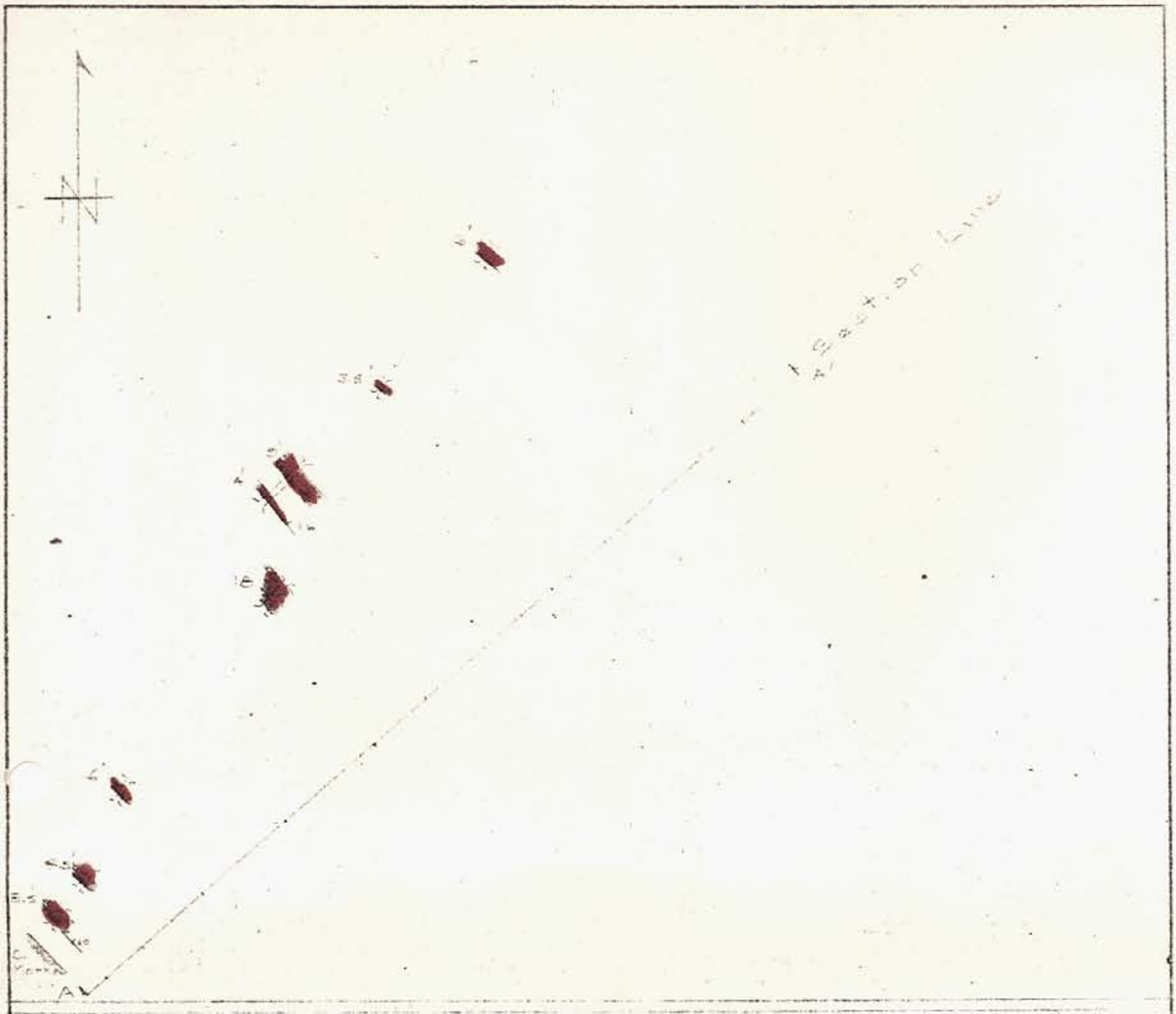
The Consolidated Mining and Smelting Company of Canada Limited

DRAWN BY:		TRACED BY:	
REVISED BY	DATE	REVISED BY	DATE

ELK RIVER COAL
PLAN & SECTION
TRENCH LINE No 7

SCALE: 1" = 100' DATE: AUG. 19 1967 PLATE:

COMINCO 210-0610



The Consolidated Mining and Smelting Company of Canada Limited

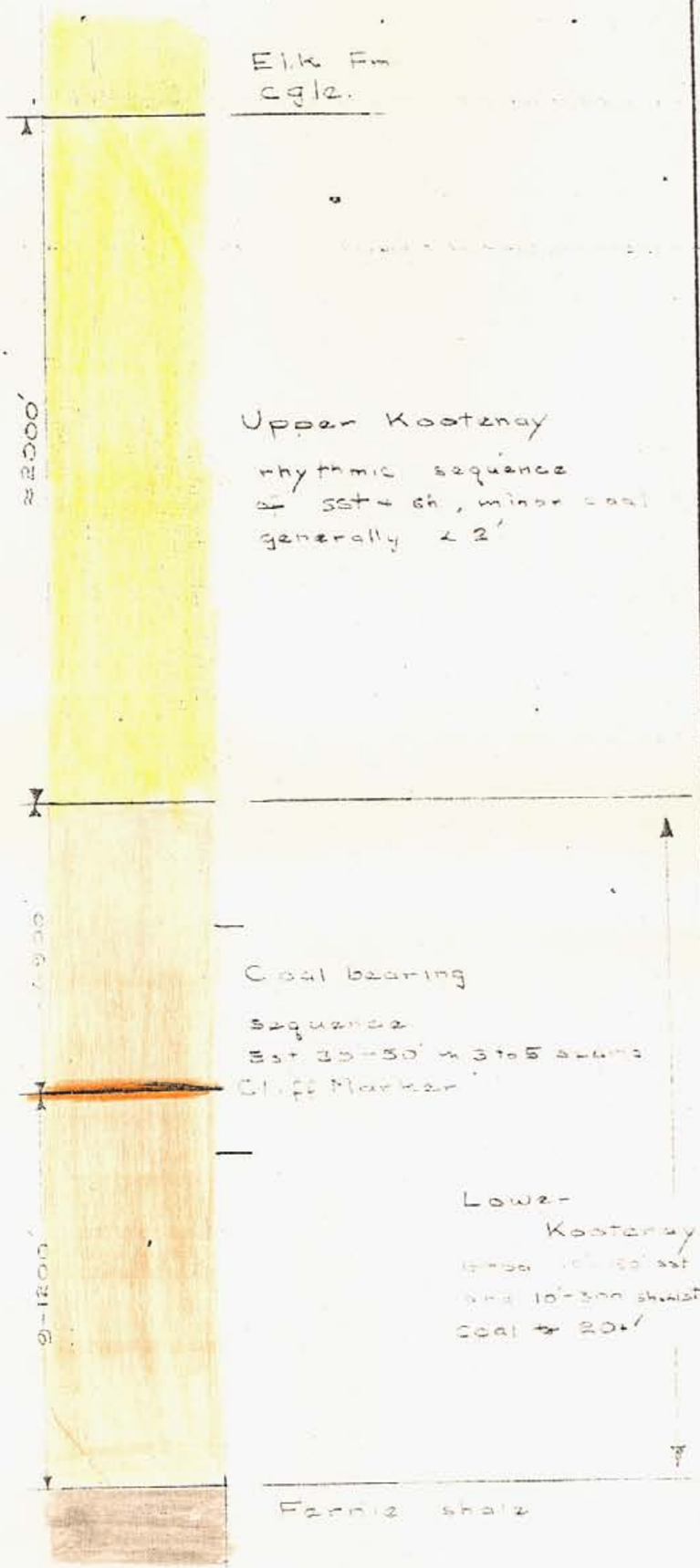
DRAWN BY: –		TRACED BY:	
REVISED BY	DATE	REVISED BY	DATE

ELK RIVER COAL
PLAN + Section
Trench Line #1.

SCALE: 1" = 100' DATE: A_ PLATE: ER-6

BCIL 1071-C.M.S.C.

COMINCO 210-0610



K-COMINCO - ELK RIVER 74(1)A.

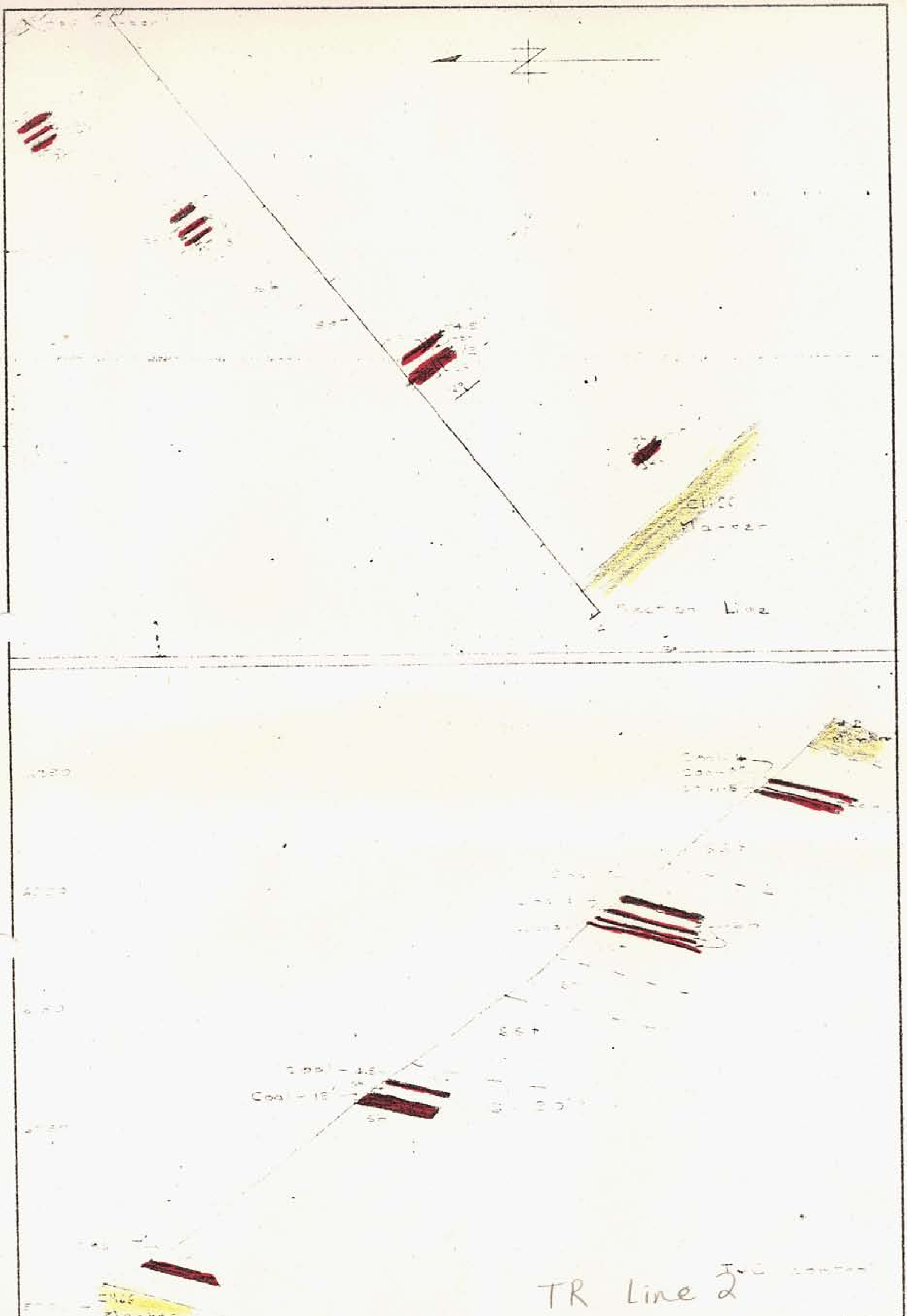
The Consolidated Mining and Smelting Company of Canada Limited

DRAWN BY: MR.	TRACED BY:		
REVISED BY	DATE	REVISED BY	DATE

ELK RIVER COAL
COMPOSITE STRATIGRAPHIC COLUMN

SCALE 1" = [illegible] DATE: Aug 22/67 PLATE: ER-17

COMINCO 210-D61C



The Consolidated Mining and Smelting Company of Canada Limited

DRAWN BY:		TRACED BY:	
REVISED BY	DATE	REVISED BY	DATE

ELK RIVER COAL

Plan + Section

Trench Line #2

SCALE: | DATE: | PLATE: ER-7

COMINCO 210-0610

COMINCO CROWN GRANTED COAL RIGHTS

DECEMBER 1974 DATA

NTS 82 J 2/W , 82 J 7 W

A. C. Taplin P. Eng. December 23, 1974

Copies of Certificate & Letter passed to Mineral Revenue Div. 9/1/75 [illegible]

I.F. Vol. 3 Fol. 77 No. 1832-I
I.F. Vol. 3 Fol. 77 No. 1833-I
I.F. Vol. 3 Fol. 76 No. 1830-I
I.F. Vol 3 Fol. 77 No. 1831-I
I.F. Vol. 3 [illegible] 1829-I

From Certificate No.

No. 71247-I

Certificate of Indefeasible Title

This Certificate of Indefeasible Title is void as against the title of any person adversely in actual possession of and rightly entitled to the hereditaments land included in same at the time of the application upon which this Certificate was granted, and who continues in possession, and is subject to—

(a.) The subsisting exceptions or reservations contained in the original grant from the Crown:

(b.) Any Dominion or Provincial tax, rate, or assessment at the date of the application for registration imposed or made a lien or which may thereafter be imposed or made a lien on the land:

(c.) Any municipal charge, rate, or assessment at the date of the application for registration imposed or which may thereafter be imposed on the land, or which had theretofore been imposed for local improvements or otherwise and which was not then due and payable, including any charge, rate, or assessment imposed by any public corporate body having taxing powers over an area in which the land is situate:

(d.) Any lease, or agreement for lease, for a period not exceeding three years, where there is actual occupation under the same:

(e.) Any public highway or right-of-way, watercourse, or right of water, or other public easement:

(f.) Any right of expropriation by Statute:

(g.) Any lis pendens or mechanics' lien, judgment, caveat, or other charge, or any assignment for the benefit of creditors or receiving order or authorized assignment under the "Bankruptcy Act," registered since the date of the application for registration:

(h.) Any condition, exception, reservation, charge, lien, or interest noted or endorsed hereon:

(i.) The right of any person to show that the whole or any portion of the land is by wrong description of boundaries or parcels improperly included in this certificate:

(j.) The right of any person to show fraud, wherein the registered owner or wherein the person from or through whom the registered owner derived his right or title otherwise than *bona fide* for value has participated in any degree.

(k) Any restrictive condition, right of reverter, or obligation imposed on the land by the 'Forest Act' then noted and endorsed thereon.

Date of Application for registration, the Twenty Sixth day of August 2:32 P.M., 19 47

Register, Vol. 278

This is to certify that THE CONSOLIDATED MINING AND SMELTING COMPANY OF CANADA LIMITED, Trail, B.C

is *absolutely and indefeasibly entitled in fee simple, subject to such charges, liens, and interests as are notified by endorsement hereon, and subject to the conditions, exceptions, and reservations set out hereon, to* those

piece s *of land situate in the* Fort Steele Assessment District.

and Province of British Columbia, and more particularly known and described as:—

Lot Six Thousand Eight Hundred and Twenty One (6821); the West half (W½) of Lot Six Thousand Eight Hundred and Twenty Two (6822); The East half (E ½) of Lot Six Thousand Eight Hundred and Twenty Three (6823); The West half (W ½) of Lot Six Thousand Eight Hundred and Twenty Four (6824); and the East half (E½) of Lot Six Thousand Eight Hundred and Twenty Five (6825), Kootenay District, together with coal and petroleum therein.

THE FOLLOWING PIECES OF LAND HAVE BEEN TRANSFERRED:

Land.					Cert. No.

In witness whereof *I have hereunto set my hand and seal of office*

at Nelson, *British Columbia,*

this 4th *day of* September.

19 47

Registrar.

[OVER.]

I. F. Vol. 3 Fol. 70 1311-I
I. F. Vol. 3 Fol. 71 1312-I
I. F. Vol. 3 Fol. 71 1313-I
From Certificate No. ....

D.D. 71247-I.

No. 71248-I

This Certificate of Indefeasible Title is void as against the title of any person adversely in actual possession of and rightly entitled to the ~~hereditaments~~ land included in same at the time of the application upon which this Certificate was granted, and who continues in possession, and is subject to—

(a.) The subsisting exceptions or reservations contained in the original grant from the Crown:

(b.) Any Dominion or Provincial tax, rate, or assessment at the date of the application for registration imposed or made a lien or which may thereafter be imposed or made a lien on the land:

(c.) Any municipal charge, rate, or assessment at the date of the application for registration imposed or which may thereafter be imposed on the land, or which had theretofore been imposed for local improvements or otherwise and which was not then due and payable, including any charge, rate, or assessment imposed by any public corporate body having taxing powers over an area in which the land is situate:

(d.) Any lease, or agreement for lease, for a period not exceeding three years, where there is actual occupation under the same:

(e.) Any public highway or right-of-way, watercourse, or right of water, or other public easement:

(f.) Any right of expropriation by Statute:

(g.) Any lis pendens or mechanics' lien, judgment, caveat, or other charge, or any assignment for the benefit of creditors or receiving order or authorized assignment under the "Bankruptcy Act," registered since the date of the application for registration:

(h.) Any condition, exception, reservation, charge, lien, or interest noted or endorsed hereon:

(i.) The right of any person to show that the whole or any portion of the land is by wrong description of boundaries or parcels improperly included in this certificate:

(j.) The right of any person to show fraud, wherein the registered owner or wherein the person from or through whom the registered owner derived his right or title otherwise than *bona fide* for value has participated in any degree.

(k) Any restrictive condition, right of reverter, or obligation imposed on the land by the 'Forest Act' when noted and endorsed thereon.

Certificate of Indefeasible Title

Date of Application for registration, the Twenty Sixth day of August 2:32 P.M., 19 47

Register, Vol. 273

This is to certify that THE CONSOLIDATED MINING AND SMELTING COMPANY OF CANADA LIMITED, Trail, B.C

is *absolutely and indefeasibly entitled in fee simple, subject to such charges, liens, and interests as are notified by endorsement hereon, and subject to the conditions, exceptions, and reservations set out hereon, to* those

piece s *of land situate in the* Fort Steele Assessment District.

and Province of British Columbia, and more particularly known and described as:—

Lots Six Thousand and Forty Nine (6049), Six Thousand and Fifty (6050) and Six thousand and Fifty One (6051), Kootenay District, together with coal and petroleum therein.

Crown grant issued
24-1-1910

Calgary Power [illegible]

THE FOLLOWING PIECES OF LAND HAVE BEEN TRANSFERRED:

Land.					Cert. No.

In witness whereof *I have hereunto set my hand and seal of office*

at Nelson, *British Columbia,*

this 4th *day of* September,

19 47

[signature]
Registrar.

[OVER.]

FORM F.

I. F. Vol. 3 Fol 70 No.
I. F. Vol. 3 Fol 70 No. [illegible]9-I
I. F. Vol. 3 Fol.8[illegible] No. [illegible]10-I
From Certificate No. 18[illegible]-I

land

D. P. 71247-I

No. 71[illegible]19-I

This Certificate of Indefeasible Title is void as against the title of any person adversely in actual possession of and rightly entitled to the hereditaments included in same at the time of the application upon which this Certificate was granted, and who continues in possession, and is subject to—

(a.) The subsisting exceptions or reservations contained in the original grant from the Crown:

(b.) Any Dominion or Provincial tax, rate, or assessment at the date of the application for registration imposed or made a lien or which may thereafter be imposed or made a lien on the land:

(c.) Any municipal charge, rate, or assessment at the date of the application for registration imposed or which may thereafter be imposed on the land, or which had theretofore been imposed for local improvements or otherwise and which was not then due and payable, including any charge, rate, or assessment imposed by any public corporate body having taxing powers over an area in which the land is situate:

(d.) Any lease, or agreement for lease, for a period not exceeding three years, where there is actual occupation under the same:

(e.) Any public highway or right-of-way, watercourse, or right of water, or other public easement:

(f.) Any right of expropriation by Statute:

(g.) Any lis pendens or mechanics' lien, judgment, caveat, or other charge, or any assignment for the benefit of creditors or receiving order or authorized assignment under the "Bankruptcy Act," registered since the date of the application for registration:

(h.) Any condition, exception, reservation, charge, lien, or interest noted or endorsed hereon:

(i.) The right of any person to show that the whole or any portion of the land is by wrong description of boundaries or parcels improperly included in this certificate:

(j.) The right of any person to show fraud, wherein the registered owner or wherein the person from or through whom the registered owner derived his right or title otherwise than bona fide for value has participated in any degree.

(k) Any restrictive condition, right of reverter, or obligation imposed on the land by the 'Forest Act' when noted and endorsed thereon.

Certificate of Indefeasible Title

Date of Application for registration, the Twenty Sixth day of August 2:32 P.M. , 19 47

Register, Vol. 273

This is to certify that THE CONSOLIDATED MINING AND SMELTING COMPANY OF CANADA LIMITED, Trail, B.C.

is *absolutely and indefeasibly entitled in fee simple, subject to such charges, liens, and interests as are notified by endorsement hereon, and subject to the conditions, exceptions, and reservations set out hereon, to* those

piece s *of land situate in the* Fort Steele Assessment District.

and Province of British Columbia, and more particularly known and described as:—

Lots Six Thousand and Forty Seven (6047) and Six Thousand and Forty Eight (6048), and the West Half (W½) of the West Half (W ½) of Lot Six Thousand Nine Hundred and Eighty (6980), Kootenay District, together with coal and petroleum therein.

THE FOLLOWING PIECES OF LAND HAVE BEEN TRANSFERRED:

Land.					Cert. No.

In witness whereof *I have hereunto set my hand and seal of office*

at Nelson *, British Columbia,*

this 4th *day of* September.

19 47

A. N. Adams

[OVER.]

Registrar.

I. F. Vol 3 Fol 69 No. 1337-I
I. F. Vol 3 Fol 70 No. 1338-I
From Certificate No. 1338-I

D.D. 71247-I *No.* 71248-I

land

This Certificate of Indefeasible Title is void as against the title of any person adversely in actual possession of and rightly entitled to the hereinafter mentioned land at the time of the application upon which this certificate was granted, and who continues in possession, and is subject to—

(a.) The subsisting exceptions or reservations contained in the original grant from the Crown:

(b.) Any Dominion or Provincial tax, rate, or assessment at the date of the application for registration imposed or made a lien or which may thereafter be imposed or made a lien on the land:

(c.) Any municipal charge, rate, or assessment at the date of the application for registration imposed or which may thereafter be imposed on the land, or which had theretofore been imposed for local improvements or otherwise and which was not then due and payable, including any charge, rate, or assessment imposed by any public corporate body having taxing powers over an area in which the land is situate:

(d.) Any lease, or agreement for lease, for a period not exceeding three years, where there is actual occupation under the same:

(e.) Any public highway or right-of-way, watercourse, or right of water, or other public easement:

(f.) Any right of expropriation by Statute:

(g.) Any lis pendens or mechanics' lien, judgment, caveat, or other charge, or any assignment for the benefit of creditors or receiving order or authorized assignment under the "Bankruptcy Act," registered since the date of the application for registration:

(h.) Any condition, exception, reservation, charge, lien, or interest noted or endorsed hereon:

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(j.) The right of any person to show fraud, wherein the registered owner or wherein the person from or through whom the registered owner derived his right or title otherwise than bona fide for value has participated in any degree.

(k) Any restrictive condition, right of reverter, or obligation imposed on the land by the 'Forest Act' when noted and endorsed thereon.

Certificate of Indefeasible Title

Date of Application for registration, the Twenty Sixth day of August 2:32 P.M., 19 47

Register, Vol. 278

This is to certify that THE CONSOLIDATED MINING AND SMELTING COMPANY OF CANADA LIMITED, Trail, B.C.

is *absolutely and indefeasibly entitled in fee simple, subject to such charges, liens, and interests as are notified by endorsement hereon, and subject to the conditions, exceptions, and reservations set out hereon, to* those

piece s of land situate in the Fort Steele Assessment District.

and Province of British Columbia, and more particularly known and described as:—

Lots Three Thousand Four Hundred and Twenty Three (3423) and Three Thousand Four Hundred and Twenty Four (3424), Kootenay District, together with coal and petroleum therein.

THE FOLLOWING PIECES OF LAND HAVE BEEN TRANSFERRED:

Land.	Cert. No.

In witness wherof I have hereunto set my hand and seal of office

at Nelson, *British Columbia,*

this 4th *day of* September

19 47

A.R. Adams

I. F. Vol 3 Fol 72 1816-I
I. F. Vol 3 Fol 69 1806-I
From Certificate No. .....

D.D. 71247-I *No.* 71261-I

land

This Certificate of Indefeasible Title is void as against the title of any person adversely in actual possession of and rightly entitled to the ~~however~~ land included in same at the time of the application upon which this Certificate was granted, and who continues in possession, and is subject to—

(a.) The subsisting exceptions or reservations contained in the original grant from the Crown:

(b.) Any Dominion or Provincial tax, rate, or assessment at the date of the application for registration imposed or made a lien or which may thereafter be imposed or made a lien on the land:

(c.) Any municipal charge, rate, or assessment at the date of the application for registration imposed or which may thereafter be imposed on the land, or which had theretofore been imposed for local improvements or otherwise and which was not then due and payable, including any charge, rate, or assessment imposed by any public corporate body having taxing powers over an area in which the land is situate:

(d.) Any lease, or agreement for lease, for a period not exceeding three years, where there is actual occupation under the same:

(e.) Any public highway or right-of-way, watercourse, or right of water, or other public easement:

(f.) Any right of expropriation by Statute:

(g.) Any lis pendens or mechanics' lien, judgment, caveat, or other charge, or any assignment for the benefit of creditors or receiving order or authorized assignment under the "Bankruptcy Act," registered since the date of the application for registration:

(h.) Any condition, exception, reservation, charge, lien, or interest noted or endorsed hereon:

(i.) The right of any person to show that the whole or any portion of the land is by wrong description of boundaries or parcels improperly included in this certificate:

(j.) The right of any person to show fraud, wherein the registered owner or wherein the person from or through whom the registered owner derived his right or title otherwise than *bona fide* for value has participated in any degree.

(k) Any restrictive condition, right of reverter, or obligation imposed on the land by the 'Forest Act' when noted and endorsed thereon.

Certificate of Indefeasible Title

Date of Application for registration, the Twenty Sixth day of August 2:32 P.M., 19 47

Register, Vol. 279

This is to certify that THE CONSOLIDATED MINING AND SMELTING COMPANY OF CANADA LIMITED, Trail, B.C.

is *absolutely and indefeasibly entitled in fee simple, subject to such charges, liens, and interests as are notified by endorsement hereon, and subject to the conditions, exceptions, and reservations set out hereon, to* those

piece s *of land situate in the* Fort Steele Assessment District.

and Province of British Columbia, and more particularly known and described as:—

The North West Quarter (N.W.¼) and the East Half (E. ½) of Lot Three Thousand Four Hundred and Twenty Two (3422), and the West Half (W½) of Lot Six Thousand Six Hundred and Thirty Five (6635), Kootenay District, together with coal and petroleum therein.

THE FOLLOWING PIECES OF LAND HAVE BEEN TRANSFERRED:

Land.					Cert. No.

In witness wherof *I have hereunto set my hand and seal of office*

at Nelson, *British Columbia,*

this 4th *day of* September,

19 47

A.R. Adams

Registrar.

[OVER.]

FORM F.

FORDING OPERATIONS

COMINCO LIMITED

GEOLOGICAL REPORT

1974 ELK VALLEY EXPLORATION PROGRAM

NTS 82 J 2/W and J 7/W

December 23, 1974

TABLE OF CONTENTS

Summary and Conclusions, Recommendations.

1974 Exploration Program

- Objective
- Drill Hole Results
- Valuation of Work: Cost Statement
- Plan of Operations Form (For 1975)
- Attachments, in envelope

GEOLOGICAL REPORT
1974 ELK VALLEY EXPLORATION PROGRAM

Summary and Conclusions

Six rotary holes, numbers EV-1 to EV-6, were drilled by Kenting - Big Indian's rig 3 using center-return drill pipe and both compressed air and mud circualtion. Holes EV-1, EV-2 were abandoned in caving overburden. Hole EV-3 was abandoned at 91 feet depth in friable Fernie shale. Hole EV-4 intersected Seams 1, 2 in Kootenay Basal Sandstone which grades to the Passage Beds of the Fernie Formation. Hole EV-5 penetrated Fernie shales to a depth of 259 feet. Hole EV-6 was drilled in Spray River strata and was stopped in a shaly dolomite zone with heavy water flow.

Drill holes EV-3 to EV-6 do not indicate any possibilities for Kootenay Formation at depth below the floor of Elk Valley in this area. The presence of sub-surface Spray River strata and possibly Rocky Mountain Group rocks in EV-6 is interpreted as below the projected trace of the Elk River Thrust Fault. The Basal Kootenay Sandstone is considered to be truncated by this thrust to the north of hole EV-5. Bingay Creek Knoll and the creek bed adjacent to the B.C. Forest Service road are underlain mainly by dolomitic quartz-arenite of the Rocky Mountain Group. Thus there is no evidence for any occurrence of Kootenay Formation coal measures on the west sideof Elk River to the south of Abby Ridge.

Recommendation

That the Coal Licenses 807, 806, 805, 540, 544, 546, 548, 552 presently held by Cominco Limited be abandoned. They have not been applied for under the Coal Act. 1974 for this reason. It is further recommended that Coal Licenses 539, 541, 543, 545, 547, 549, 551, 553 be retained; and that the 1974 Exploration Program Expenditures be applied as work credits for extensions of these licenses beyond 1976.

ACT:kl

December 23, 1974

Signed A. C. Taplin

A. C. Taplin, P. Eng.
Senior Mine Geologist
Fording Operations

cc. B.C. Department of Mines
Assistant Manager W. Dist. Expl., Vancouver

Objective

The program was proposed to test by at least 4 center-return rotary holes for coal bearing strata below the heavily drift covered terraces of the Elk Valley, approximately 15 miles north of Elkford.

Drill Hole Results

Big Indian's rig number 3 moved to the first Elk Valley drill site October 3, 1974. A total of 39 1/4 hours were spent at hole EV-1 in reaching a total depth of 52 feet in wet, caving sand and gravel. The hole was abandoned without reaching bedrock. Hole EV-2 reached 130 feet in similar overburden before it had to be abandoned because of the sloughing conditions.

The rig then moved to the sites prepared along the Kan-Elk Powerline road on the east side of Elk River. Hole EV-3 drilled 37 feet of overburden which was cased, then was extended to 91 feet in extremely friable shale. The hole was abandoned because of caving ground which even dense mud circulation could not prevent. The shale bedrock was interpreted as Fernie Formation from examination of the drill cuttings.

Hole EV-4 was successfully drilled to 502 feet. The radiation log is included in the attachments and shows the Kootenay basal sandstone from 35 feet to approximately 300 feet with the Passage beds of the Fernie Formation below. Typical seams numbers 1,2 are present in the upper third of the basal sandstone.

Hole EV-5 was cased to 41 feet of which 37 feet was overburden. This hole penetrated to 259 feet in very friable Fernie shale which caved when the rods were pulled because they had plugged. The hole was abandoned at this stage.

Hole EV-6 was cased to 60 feet (40 feet O.B.) and was drilled with partial loss of circulation to 258 feet in fractured black siltstone (Spray River strata). From 258 feet to 276 feet the drill penetrated a different formation - a shaly dolomite with a heavy flow of water. The hole could not be deepened further because the drilling mud was being diluted faster than it could be replentished. The hole was radiation logged through the double walled drill stem and then abandoned. No further drilling was considered because of the poor performance and high costs.

The Geological map (Plate 5, 1 in. = 1000 ft.) shows the General Geology from Wolfard's 1967 mapping with revisions due to the 1974 drilling. Sections 3 to 6 illustrate the general structural interpretation.

A. C. Taylor P. Eng.

December 23, 1974.

VALUATION OF WORK: COST STATEMENT

ON-PROPERTY COSTS: Period Worked: from October to October 1974

1. Operator's Fees, Salaries, and Wages:

	Average No. Employees:	Average Rate:	Average No. Days:	Amount
Professional and Technical:	one Geologist	$75/day	approx. 18 days	1320.76
Machine operators & support:				
Miners:				
Other:	Report			500.00
Total Operator's Costs:				$ 1820.76

2. Contractors and Consultants:

Name	Service	Contract Amount
Hollowink Contracting	Bulldozer Work (site) (preparation)	999.00
Kenting - Big Indian	Rotary Drilling (center) (Return)	27535.13
Roke Logging	Drill Hole Radiation Logging	613.05
Elkford Construction	Backhoe Work (mud pits)	160.00
Total Contractor & Consultant Costs:		$ 29307.13

3. Equipment & Instrument Rentals: Owned ____ Rented ____

Type	Rented from	Amount
Total Equipment & Instrument Rental:		$

4. Field Camp Costs: - Drill Crews charged Board at Elkford Camp

Food: ____

Accomodation: ____

Other: ____

Total Field Camp Costs: $ ____

5. Sampling, Analysis & Testing:

Service	Performed by:	Amount
Totals Sampling, Analysis & Testing:		$

6. Supplies & Materials Costs:

Process supplies (except fuel)	Drilling Supplies Mud - 559.08
Operating & maintainance supplies	
Office & technical supplies	Chromaflex Maps - $209.00
Other supplies & materials	
Total Supplies & Materials:	$ 768.08

7. Transportation Costs:

Ground transportation details:

Vehicles	Owner	Rental rate
one 4 W.D. #7307	Rentway	$400/month

Air support details:

Aircraft type	Owner	Charter
Total Transportation Costs:		$ 400.00

8. Travel Expenditures: (Operator's costs only)

No. of Personnel	No. of Trips	Amount
---	---	---
Total Travel Expenditures:		$

TOTAL COST: $ 32295.97

OFF-PROPERTY COSTS: Period Worked: from _____ to _____ 19___

Section 28 Logistics and Field Support: Amount

(a) Technical and feasibility studies _____

(b) Preparation of reports _____

(c) Supplies and services _____

(d) Travelling expenses _____

(itemize)

_____

_____

_____

_____

_____

_____

Total Logistics and Field Support: $_____

Section 29 Supporting Cost Statements: Amount

List _____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

Total Supporting Cost: $_____

S U M M A R Y

On Property Costs: $ 32295.97

Off-Property Costs: $ -

TOTAL COSTS: $ 32295.97

ATTACHMENTS:

Supporting cost statements from:

	11	Hollowink	Contracting	invoice	8432
	21	Kenting	Big Indian	invoice	0143
	31	Kenting	Big Indian	invoice	0184
	41	Roke	Logging	invoice	1631
	51	Roke	Logging	invoice	1634
	61	Elkford	Construction	invoice	11263
	71	Thiessen	Equipment Ltd.	invoice	15069
	81	Thiessen	Equipment Ltd.	invoice	15120
Drilling Supplies	91	Thiessen	Equipment Ltd.	invoice	15121
	101 -	McElhanney technical	Surveying supplies	invoice	74198

In Acc't With---Hollowink Contracting Ltd.
Box 1274,
Fernie, B.C.

Attention Art Taplin

ORDER NO. P.O. # 15880R | DEPT. | DATE September 30th 1974

SOLD TO Fording Coal | ADDRESS Elkford, B.C.

SHIP TO | ADDRESS

WHEN SHIP	HOW SHIP	TERMS	BUYER	SALESMAN

	Prospecting D8-1 & TD15		
	172 Hrs @ $39.00 @ Hr. D8-1	$6,708.00	✓
	TD15 37 Hrs. @ $27.00 @ Hr.	$ 999.00	✓
	21 Overtime Hrs. @ $3.05 @ Hr.	$ 64.05	✓
	Total Cost	$7,771.05	✓
	Sept 7/3 hrs. overtime Saturday @ $3.05	9.15	✓
	Total	$7780.20	

O.K. for payment

C 2410 100 $2721.50 ✓
C 2610 100 999.00 ✓
C 2420 100 $ ~~4059.70~~ 4059.70 ✓

A.C. Taplin Oct. 9/74

8432

SIGNATURE

BLUELINE D 152

INVOICE

KENTING

SEPTEMBER 25 19 74

FORDING COAL LIMITED
P.O. BOX 100
ELKFORD, B. C.

ACL

MAKE CHEQUES PAYABLE TO:
KENTING PETROLIA DRILLING LTD.
BIG INDIAN DRILLING DIVISION
700 - 6TH AVENUE S.W.
CALGARY, ALBERTA, T2P 0T8

INVOICE NO. 0143

WE HAVE TODAY DEBITED YOUR ACCOUNT AS FOLLOWS

MONTH OF CHARGE SEPTEMBER 19 74

PROJECT 1407 - Rig #3	
Mobilization and Demobilization.	$ 2,500 00

C 2610101 $ 2000.00

3120017 $ 500.00

A.C. Taylor Sept. 30/74

CLIENT

INVOICE

KENTING

October 28 74

FORDING COAL LIMITED
P.O. Box 100
ELKFORD, B. C.

Attention: Mr. A. C. Taplin.

MAKE CHEQUES PAYABLE TO:
KENTING PETROLIA DRILLING LTD.
BIG INDIAN DRILLING DIVISION
700 - 6TH AVENUE S.W.
CALGARY, ALBERTA, T2P 0T8

0184
INVOICE NO.

WE HAVE TODAY DEBITED YOUR ACCOUNT AS FOLLOWS

MONTH OF CHARGE OCTOBER 1974

PROJECT 1407 - Rig #3 - October 3 - October 18,1974

EV4 35 - 502' 467' Ttl. - 467'

DAYWORK

EV1 Oct.3 - 4
Oct.4 - 24
Oct.5 - 6.75
34.75 less 5 = 29.75 hrs.

EV2 Oct.5 - 9.25
Oct.6 - 12
21.25 less 5 = 16.25 hrs.

EV3 Oct.6 - 8
Oct.7 - 24
Oct.8 - 6
38 less 5 = 33 hrs.

EV4 Oct.8 - 6.5
Oct.9 - 24
Oct.10 - 1.5
32 less 5 = 27 hrs.

EV5 Oct.12 - 7-3/4
Oct.13 - 24
Oct.14 - 24
Oct.15 - 21 1/2
Oct.16 - 13 1/2
90-3/4 less 5 85-3/4 hrs.

EV6-Oct.16 - 10 1/2 hrs.
Oct.17 - 24
Oct.18 - 24
Oct.19 - 8 - Move to Elkford
66.5 less 5 = 61.5

TOTAL - 253.25 hrs.

253.25 hrs. @ $75.00		$ 18,993 75
467' @ $11.00/ft.		5,137 00
Materials		
3-8-3/4 RT. Bits @ $110.00 each	330.00	
1-7-7/8 RT. Bits @ $70.40	70.40	
6-4-7/8 Bits @ $95.23	571.38	
2-5-1/8 Bits @ $124.71	249.42	1,221 20
		$ 25,352 95
Plus 15% Handling Charge		183 18
TOTAL INVOICE		$ 25,535 13

C2610 101
$ 25,535.13
A. C. Taplin
Oct. 31/74

CLIENT

ROKE

OIL ENTERPRISES LTD.

Telephone 262-9894

2716 - 32nd AVENUE S.W., CALGARY, ALBERTA T3E 0W3

Date: 12 OCT 1974 Customer Order No.: Service Order № 1631

TO ROKE OIL ENTERPRISES LTD.

The Customer, as evidenced by its (his) duly authorized representatives signature hereby retains Roke Oil Enterprises Ltd., (herein called, "the Contractor") to perform or attempt to perform the following services and to furnish the following equipment on the well described herein at the price set out in the Contractor's current price schedule and on the terms and conditions contained herein and on the reverse hereof.

N.B.: THE TERMS AND CONDITIONS ON THE REVERSE HEREOF FORM A PART OF THIS CONTRACT.

SERVICES GRN

WELL IDENTIFICATION

Company FORDING COAL LIMITED

Well Name (herein called the well)

Location

Field FORDING Province B.C.

PERFORATING INSTRUCTIONS

NO. SHOTS	FROM	TO
		Ft.
		Ft.
		Ft.
		Ft.

Customer represents the well is in good condition to feet

No. Field Prints 1 No. Final Prints 4 Total Prints 5

Customer's Name FORDING COAL LIMITED

Mailing Address

By [illegible] (duly authorized representative of customer)

Engr. JOHNSON

Driver

Driver

Unit No. 32

Round Trip Mileage

Mileage Charged

Left Station

Time Set By Client 12/10/74

Arrived on Location

Start Operation 12/10/74

Finish Operation

Returned to Station 12/10/74

ESTIMATED CHARGES

SERVICE	ITEM	QUANTITY	UNIT PRICE	AMOUNT
GRN	F1192	262	85¢ FT	222.70
GRN	RH911	503	85¢ FT	427.55
GRN	RH904	371	85¢ FT	315.35
GRN	RH913	496	85¢ FT	421.60
GRN	RH910	ATTEMPT	[illegible]	21.00
GRN	EV-4	498	85¢ FT	[illegible]
		TOTAL		1885.[illegible]
		LESS 10%		188.[illegible]
				$1696.[illegible]
				1696.95
		EV-4 = 423.30		
		− 42.30		
		$381.00		
			1696.95	
			− 381.00	
			$1315.95	
			Herr[illegible]	

LOGGING DATA

TYPE	SCALE	FROM	TO
			Ft.
			Ft.
			Ft.
			Ft.
			Ft.

Completed Perforations with Gun

NO. SHOTS	FROM	TO
		Ft.
		Ft.
		Ft.
		Ft.
		Ft.

The Service(s) and equipment covered by this Service order have been performed or received,

[signature] [signature]

ACT.

ROKE OIL ENTERPRISES LTD.

2716 - 32nd AVENUE S.W., CALGARY, ALBERTA • TELEPHONE 262-9894

TO: Fording Coal Limited,
Box 100,
Elkford, B.C.

INVOICE № 584

DATE October 29th, 1974

SERVICES RENDERED Re: Your P.O. #81-15981X
Re: Service Order #1634 - dated October 17, 1974

Logging Charges	$ 1,352.35

C 2610 201 $232.05
C 2400 201 $1120.30 ✓
D.C. Taplin Oct. 31/74

INVOICE

			Ft.
			Ft.

Completed Perforations with

..... Gun

NO. SHOTS	FROM	TO
		Ft.
		Ft.
		Ft.
		Ft.
		Ft.

The Service(s) and equipment covered by this Service order have been performed or received.

D.C. Taplin
Signature of customer's duly authorized representative

Roke Engineer

ROKE
OIL ENTERPRISES LTD.

Telephone 262-9894

2716 - 32nd AVENUE S.W., CALGARY, ALBERTA T3E 0W3

Date: OCT 17/74 Customer Order No.: Service Order No 1634

TO ROKE OIL ENTERPRISES LTD.

The Customer, as evidenced by its (his) duly authorized representatives signature hereby retains Roke Oil Enterprises Ltd., (herein called "the Contractor") to perform or attempt to perform the following services and to furnish the following equipment on the well described herein at the price set out in the Contractor's current price schedule and on the terms and conditions contained herein and on the reverse hereof.

N.B.: THE TERMS AND CONDITIONS ON THE REVERSE HEREOF FORM A PART OF THIS CONTRACT.

SERVICES GRN

WELL IDENTIFICATION

Company FORDING COAL LIMITED

Well Name ..... (herein called the well)

Location EAGLE MTN, HENRIETTA, ELK VALLEY

Field FORDING Province BRITISH COLUMBIA

PERFORATING INSTRUCTIONS

NO. SHOTS	FROM	TO
		Ft.
		Ft.
		Ft.
		Ft.

ustomer represents the well is in good condition to ..... feet

No. Field Prints 1 No. Final Prints 4 Total Prints 5

Customer's Name FORDING COAL LIMITED

Mailing Address .....

By Dennis Bell Fording Coal Ltd.
(duly authorized representative of customer)

Engr. JOHNSON

Driver .....

Driver .....

Unit No. 33

Round Trip Mileage .....

Mileage Charged .....

Left Station .....

Time Set By Client 17/10/74

Arrived on Location .....

Start Operation 17/10/74

Finish Operation .....

Returned to Station .....

ESTIMATED CHARGES

SERVICE	ITEM	QUANTITY	UNIT PRICE	AMOUNT
GRN	RH360	325 FEET	85% OFF	$74.25
GRN	RH361	547 FEET	85% OFF	464.95
GRN	RH362	244 FEET	85% OFF	329.40
GRN	EU 6			1
				868.60

LOGGING DATA

TYPE	SCALE	FROM	TO
			Ft.
			Ft.
			Ft.
			Ft.
			Ft.

Completed Perforations with

..... Gun

NO. SHOTS	FROM	TO
		Ft.
		Ft.
		Ft.
		Ft.
		Ft.

The Service(s) and equipment covered by this Service order have been performed or received.

D. C. Tafft

Signature of customer's duly authorized representative

Roke Engineer

Requisition for Cheque or Cash

Please have cash/cheque issued in Canadian Funds:—

Date Nov. 4/24

Payable To Elkford Construction
Box 263
ELKFORD, BC

Payment Of
Work as per attached

$ 160.00

Charge: 09-C2610101 — # 160.00

Signed A.C. Taylor

Approved		Appropriation No. (if any)

Copies
Of Cheque
Of Sub-Voucher
Of Form
Of Form

Cash Received:

Note:- Pencil is not to be used in filling out or signing this form.

211-7123

Elford Construction
BOX 263 ELKFORD, B.C.
PHONE 865-2328

No. 5263

November 5 1974

Date Oct 30 1974

M Fording Coal Ltd
-Re. F. Taylor

SOLD BY	C.O.D.	CHARGE	ON ACCT.	ACCT. FWD.
1				
2 Oct 4 loader				
3 excavating @ drill				
4 sights - Elk Valley				
5				
6 4hrs @ 20.00				80 00
7				
8 Oct 5 - same				80 00
9				
10				160.00
11				
12				
13				
14				
15				

11 263

Dollars $ 160.00

COMINCO LTD. - CONTINGENT ACCOUNT

NOT NEGOTIABLE

$160.00

THIESSEN EQUIPMENT LTD.

1170 GLEN DRIVE, VANCOUVER, B.C. V6A 3M6 • TEL. 254-6258
TELEX 04-55221

DATE: October 10, 1974

INVOICE TO: Fording Coal Limited
c/oCominco Purchasing
Trail, B.C.

CONSIGNED TO: above @ Fording Valley, B.C.

INVOICE No. 15,069

PPED VIA	PREPAID	COLLECT	SHIPPING ORDER No.
Kiki's Transfer	X		11517

SHIPPING DATE	FEDERAL SALES TAX	PROVINCIAL SALES TAX	CUSTOMER'S ORDER No.
Oct. 3/74	Exempt	5% SS Tax extra	FC-13958

Quantity	Unit	Description	Unit Price	Amount
50	50#/bags	Quik-Gel	$4.20	$210.00
			5% SS Tax	10.50
				$220.50
		Prepaid Freight		15.00
				$235.50

ALL INVOICES NET 30 DAYS
REMIT FROM THIS INVOICE — NO STATEMENTS ISSUED
Baroid [illegible]ng Muds & Chemicals — Rock Bolting Supplies — Sub's & Stabilizers — Drill Stems — Rotary Bits

THIESSEN EQUIPMENT LTD.

1170 GLEN DRIVE, VANCOUVER, B.C. V6A 3M6 • TEL. 254-6258
TELEX 04-55221

DATE: October 21, 1974

INVOICE TO: Fordimg Coal Ltd.
c/o Cominco Purchasing
Trail, B.C.

CONSIGNED TO: above @ Fording Valley, B.C.

INVOICE No. 15,120

SHIPPED VIA	PREPAID	COLLECT	SHIPPING ORDER No.
Picked-Up @ Kiki's Transfer		X	11525

SHIPPING DATE	FEDERAL SALES TAX	PROVINCIAL SALES TAX	CUSTOMER'S ORDER No.
Oct. 18/74	Exempt	5% SS Tax extra	FC-13958

Quantity	Unit	Description	Unit Price	Amount
20	50#/bags	Quik-Gel	$4.20	$84.00
2	40#/bags	Kwik-Seal Fine	$24.75	49.50
				$133.50
			5% SS Tax	6.68
				$140.18

ALL INVOICES NET 30 DAYS
REMIT FROM THIS INVOICE — NO STATEMENTS ISSUED

THIESSEN EQUIPMENT LTD.

1170 GLEN DRIVE, VANCOUV. B.C. V6A 3M6 • TEL 254-6238
TELEX 04-55221

DATE: October 21, 1974

INVOICE TO: Fording Coal Ltd.
c/o Cominco Purchasing
Trail, B.C.

CONSIGNED TO: above @ Fording Valley, B.C.

INVOICE No. 15,121

SHIPPED VIA	PREPAID	COLLECT	SHIPPING ORDER No.
Kiki & Sons Transfer	X		11521

SHIPPING DATE	FEDERAL SALES TAX	PROVINCIAL SALES TAX	CUSTOMER'S ORDER No.
Oct. 9/74	Exempt	5% SS Tax extra	FC-13958

Quantity	Unit	Description	Unit Price	Amount
40	50#/bags	Quik-Gel	$4.20	$168.00
			5% SS Tax	8.40
				$176.40
		Prepaid Freight		7.00
				$183.40

ALL INVOICES NET 30 DAYS
REMIT FROM THIS INVOICE — NO STATEMENTS ISSUED

ACT

INVOICE

McELHANNEY SURVEYING & ENGINEERING LTD.

Please remit to: 1200 West Pender St., Vancouver, B. C.

Fording Operations of Cominco Ltd.
P.O. Box 100
Elkford, B. C.

Invoice No. 74-198

Date 27 November 1974

Your Order No.

Attention: Mr. A. Taplin

Our Job No. 06103-8

FOR PROFESSIONAL SERVICES IN RESPECT TO:

Provisions of 5 cronaflex positives of Elk Valley as requested 22 October 1974 $209.00

D.C. Taplin Nov. 29/74
C 2610 301 8 202.00

Terms: Net 30 days. Interest at 1½% per month will be charged on overdue accounts

PLAN OF OPERATIONS 1975

Coal Licenses 539, 541, 543, 545, 547, 549, 551, 553

The proposed programme of operations detailed hereunder shall be carried out from January 30, 1975 to January 30, 1976, covering a period of 12 months.

Total estimated costs are $ Nil, an average of $ _____ per acre.

GEOLOGICAL MAPPING (Specify details) Yes__ No✓ Estimated cost: $ Nil

	Area (acres)	Scale	Estimated time
Reconnaissance			
Detail - Surface			
Detail - Underground			
Other			

GEOPHYSICAL OR GEOCHEMICAL SURVEYS Yes__ No✓ Estimated cost: $_____

Method: _____ Line Miles: _____

OTHER SURVEYS: (Specify type and scale) Yes__ No✓ Estimated cost: $_____

Licences: _____ Topographic: _____ Other: _____

ROAD CONSTRUCTION Yes__ No✓ Estimated cost: $_____

Length: On Licences _____ Access (off Licences) _____

SURFACE WORK Yes__ No__ Estimated cost: $_____

	Length:	Licence location:
Seam tracing		
Crosscutting		
Other		

UNDERGROUND WORK Yes__ No✓ Estimated cost: $_____

Test adits: Number _____ Average length: _____ Total footage: _____

Other workings: _____ Total footage: _____

DRILLING Yes__ No✓ Estimated cost: $_____

	Hole size	No. of Holes	Total footage:
Core: Diamond__ Wireline__			
Rotary: Air__ Water/mud__			
Other:			

LOGGING, SAMPLING & TESTING (check) Yes__ No✓ Estimated cost: $_____

Lithology: Drill samples __ Core samples__ Bulk samples__

Mechanical logs: Gamma-Neutron __ Density__ Other: _____

Testing: Proximate analysis__ FSI____ Washability ____ Other_____

CONTRACTORS

Name:	Service:	Estimated Contract amount:

REMARKS: No program is currently proposed for the area covered by these Cominco held licenses.

A.C. Gaskin P.Eng.
Senior Mine Geologist, Fording Operations
Cominco Ltd.

OPERATIONS Work to be supervised by: _____ Position _____

Is this person a registered or licensed Professional Engineer in B.C.? Yes___ No___

SUMMARY STATEMENT

The Table of Contents lists the data submitted to comply with Section 39 (3) (c) to (f) inclusive of the Coal Act, 1974. The history of Cominco and Canadian Pacific Railway Exploration in this area is adequately summarized in M. R. Wolfard's 1967 Geological Report. Final items to be reported are Coal Reserve Estimates and Short and Long Range Plans.

Coal Reserve Estimates

120,000,000 short tons of indicated reserves, as per Wolfard's 1967 estimate. Because the area has not been drilled, no measured reserves can be presently estimated.

Short and Long Range Plans

No exploration and development work is planned for the area covered by the Cominco Crown Grants in 1975.

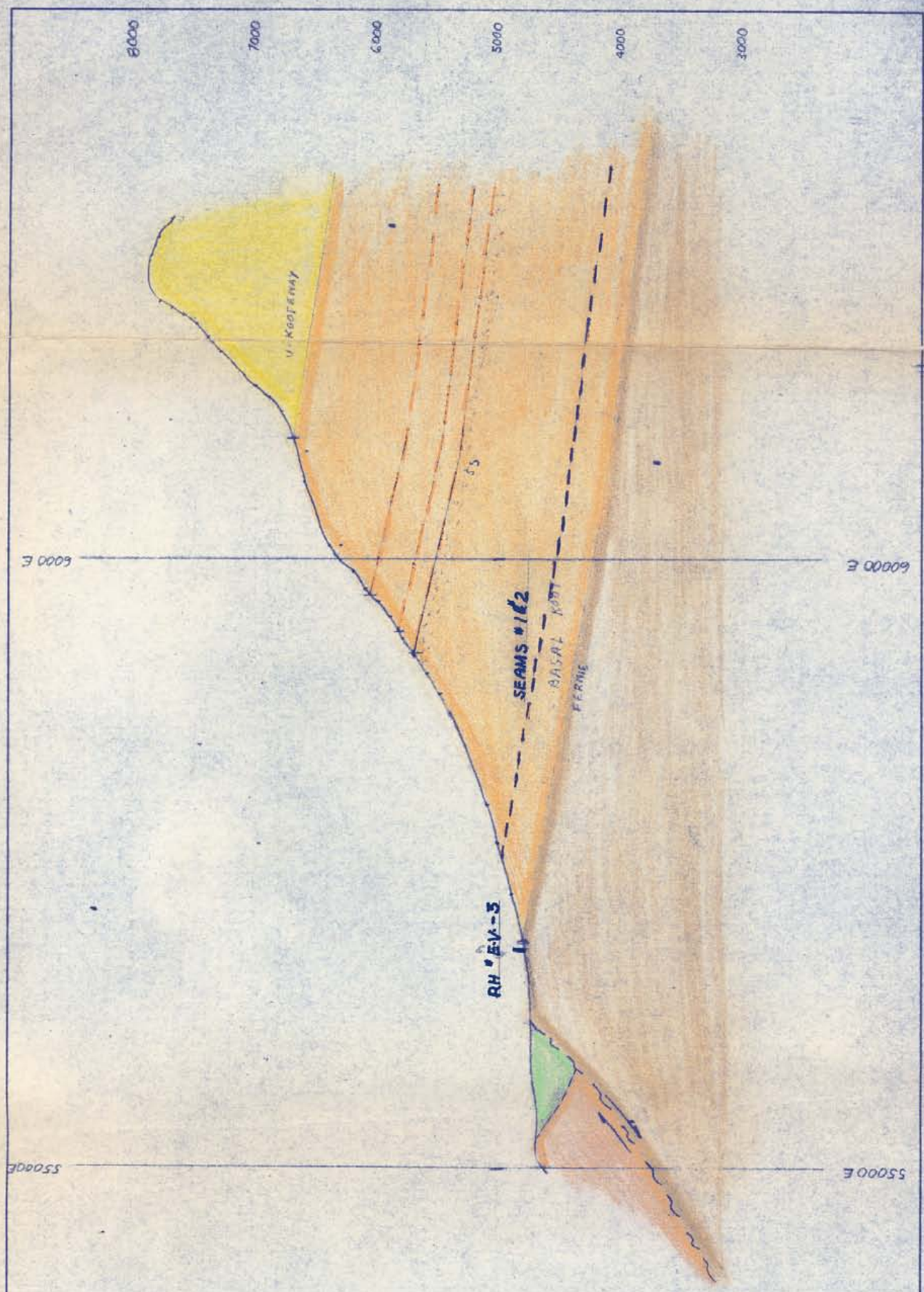
On a long term basis it is proposed to undertake a more detailed geological mapping and cross-trenching program, with improved topographic control surveys and maps. Follow-up deep core hole drilling is a requisite project, but would be very difficult along the steep, west face of the Greenhills Range, because of the difficult access and lack of water.

Submitted by A. C. Taplin

A. C. Taplin, P. Eng.
Senior Mine Geologist
Fording Operations

ACT:ldm
December 23, 1974

cc: S. Pedley
Assistant Manager,
Western District
Cominco Exploration



FR 74(2)B A.

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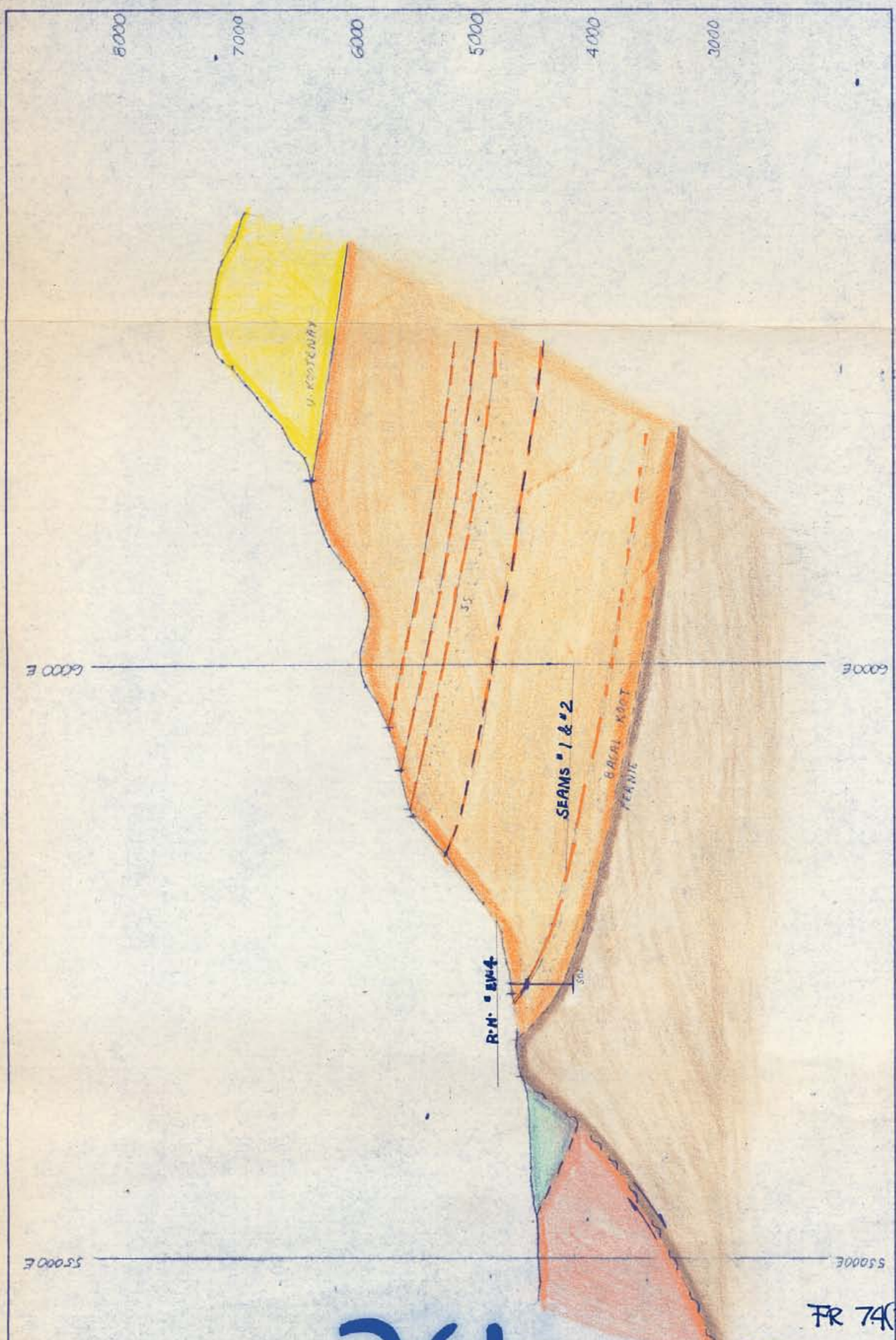
Cominco

Drawn by: KK		Traced by:		SECTION 3 THROUGH R.H. "E.V.-3 ELK VALLEY		
Revised by	Date	Revised by	Date			
				Scale: 1" = 1000 FT	Date: 15/NOV/74	Plate:

BCIL-2187-C

210-0610



FR 74(2)B-A

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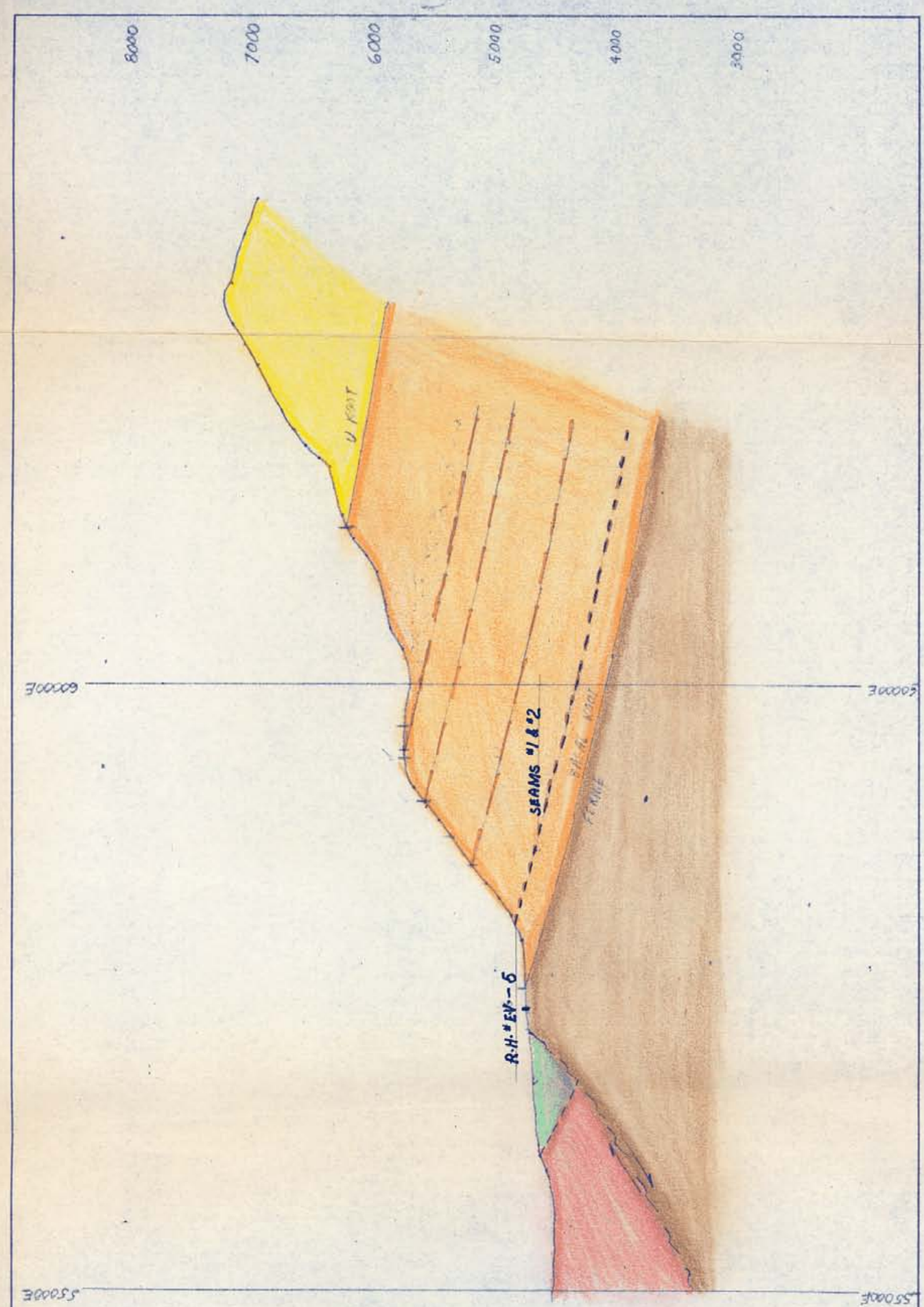
Drawn by: KK	Traced by:			
Revised by / Date	Revised by / Date			

SECTION 4 THROUGH R.H "EV-4
ELK VALLEY

Scale: 1" = 1000' | Date: 15 / NOV / 74 | Plate:

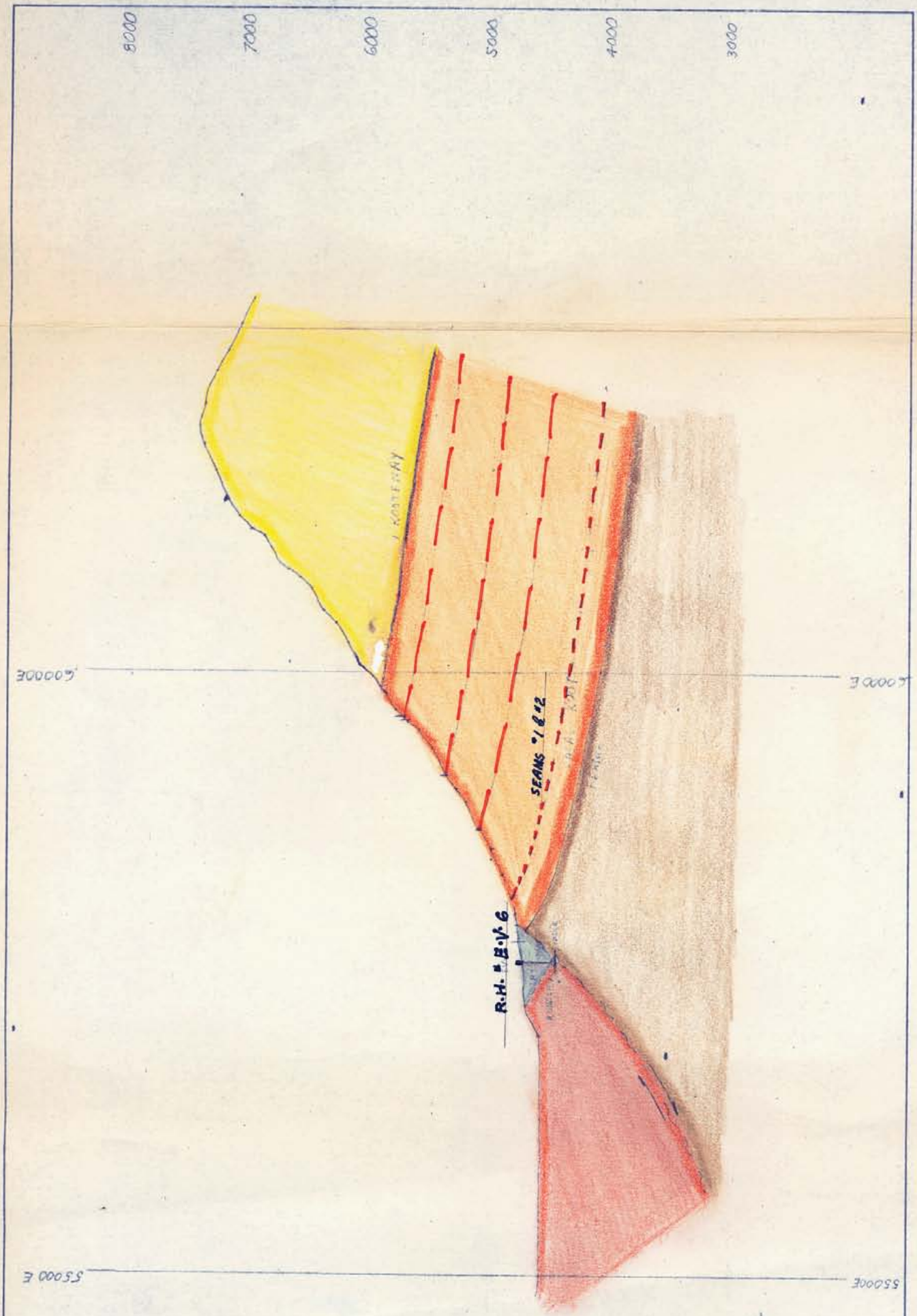


261

FR 74(2)BA.

Cominco

Drawn by: KK		Traced by:		SECTION 5 THROUGH R.H. "E.V.-5 ELK VALLEY		
Revised by	Date	Revised by	Date			
				Scale: 1" = 1000'	Date: 15/NOV/74	Plate:



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FR 74(2)BA.

Cominco

Drawn by: KK	Traced by:		
Revised by	Date	Revised by	Date

SECTION 6 THROUGH R.H. "E.V.-6
ELK VALLEY

Scale: 1" = 1000'

Date: 15/NOV/74.

Plate:

FORDING RIVER

L 6051 Burnie

L 6050 Nelson

L. 6980

L 3424 Bingay

L 3423 Hennetta

Aldridge L 6049

Village L 6048

L 6047

ELK RIVER

HEADQUARTERS CK.

Adits + coal this area not seen - plotted from 100 scale plan in MS 398

LEGEND

- L. CRETE. &/OR UPPER JURASSIC — ELK FORMATION? cgle.
- KOOTENAY FORMATION (UNDIVIDED) sst., slst., sh., + coal
- UPPER KOOTENAY — rhythmic sequence of 2'-15' layers of sst., slst., sh., + few coal seams<2'.
- LOWER KOOTENAY — intbd. 10'-150' sequences, each consisting predominantly of 6 either sst.) or slst. and sh. Up to 6 coal seams >2'.
- JURASSIC — FERNIE FORMATION — gy-bn and bk shale
- IMPORTANT COAL SEAM — def., prob., assumed
- CLIFF FORMING SAND — useful as a rough marker
- GEOLOGICAL CONTACT — def., prob., assumed
- FAULT — HIGH ANGLE REVERSE
- FAULT — THRUST
- FOLD AXIS — anticline, syncline
- DIRT ROAD — Elk Valley main, 4WD road passable, impassable
- LOT BOUNDARY — COMINCO COAL LEASE
- Trench Line

FR - 74(2)A

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SHEET 1

Drawn by: MRJ		Traced by:	
Revised by	Date	Revised by	Date

ELK RIVER COAL

PROPERTY PLAN & GENERAL GEOLOGY

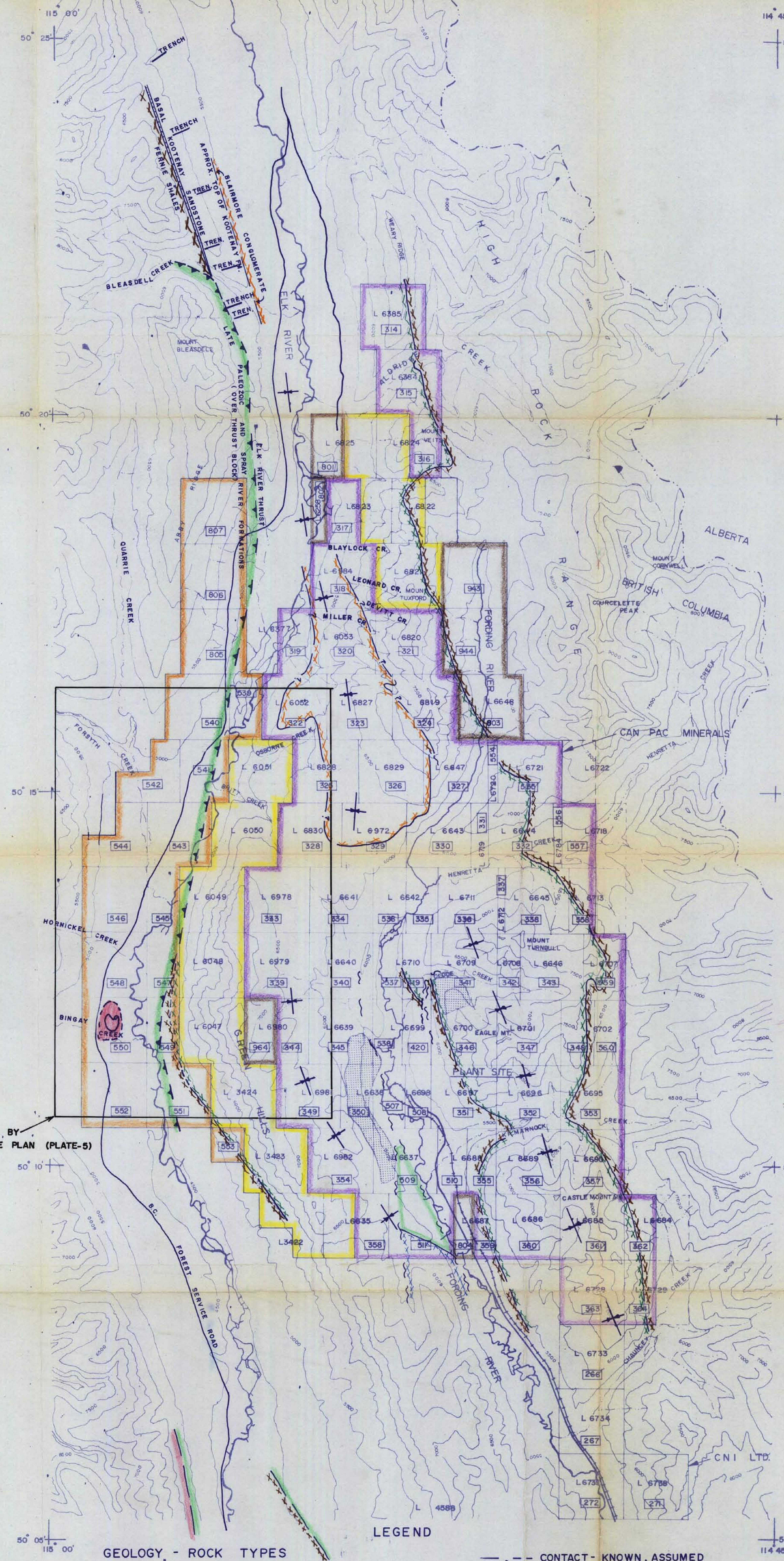
NTS 82 J 2/W

Scale: 1"- 1/4 MI. | Date: AUG. /67 | Plate: ER-4

BCIL - 2077 - C

210 - 0660


GENERAL GEOLOGY & COAL PROPERTIES
ELK VALLEY
Engineering
Drawn by K.K. NOV 8 '74
Checked by
Design Eng.
Proj. Eng.
Approved
KEY MAP
Scale 1" to 1000'
Drawing No. 5
Revision
Revisions
No. Made by Date Description
Reference
Issued to
Topographic compilation by
Photography flown May 1970
McELHANNEY SURVEYING & ENGINEERING LTD.
Job No. 05533-1
Job No.
Drawing No.
Revision
L 6052
CL 322
L 6828
CL 325
L 6830
CL 328
L 6641
CL 334
L 6640
CL 340
L 6639
CL 345
L 6981
CL 349
L 6978
CL 333
L 6979
CL 339
L 6980
E 12
W 12
CL 344
CL 964
L 3424
L 6051
L 6050
L 6049
L 6048
L 6047
CL 539
CL 540
CL 541
CL 542
CL 543
CL 544
CL 545
CL 546
CL 547
CL 548
CL 549
CL 550
CL 551
CL 552
2' Seam
3, 1' Seams
2', 3.5' & 4' Seams
2 Thin Seams
3, 4' Seams
3 Thin Seams
5 Seams (1'-1.5)
7' Poor Coal
Two or more 2' Seams
4' & 3.5' Seams
3' Seam
2.5', 4.5' Seams
20' Seam
8' Seam
9.5' & 15' Seams
TRENCH-1
TRENCH-2
TRENCH-3
TRENCH-4
TRENCH-5
SECTION-3
SECTION-4
SECTION-5
SECTION-6
EV-1
EV-2
EV-3
EV-4
EV-6
FROM 100 SCALE PLAN IN MS 398 ADITS NOT SEEN IN 1967
FROM PLAN 1909 YR. ADIT SEEN 1967
GEOL. FROM PLAN 1909 YR. ADIT SEEN 1967
KAN - ELK POWER LINE
POWER LINE ROAD
B.C. FOREST SERVICE ROAD
QUARRIE CREEK
FORSYTH CREEK
HORNICKEL CREEK
BINGAY CREEK
CUT LINE
X649,150E 5567,950N.
X645,550E 5,565,350N.
X647,500E 5,561,500N
LEGEND
BLAIRMORE CONGLOMERATE
UPPER KOOTENAY FM. -Rhythmic sequence of 2-15' layers of s.s., silt, sh., a few coal seams < 2'.
LOWER KOOTENAY FM. - Interbedded 10-150' sequences, each consisting predominantly of either s.s., or silt. & sh. Up to 6 coal seams > 3'.
After MR Wolfard Aug. 1967 (Plate ER-4)
FERNIE FM.
SPRAY RIVER FM.
ROCKY MOUNTAIN GROUP
CLIFF MARKER s.s.
COAL SEAM defined, assumed
GEOLOGICAL CONTACT definite, approximate
FAULT - high angle reverse
THRUST FAULT - assumed surface trace
ADIT



LEGEND

COAL LICENSES / NOS., OWNERSHIP

346	CANPAC MINERALS LTD.
547	COMINCO LTD.
804	FORDING COAL LTD.
L 6048	LOT NO, COMINCO CROWN GRANTS
	MINING AREAS
	RAILROAD
	EXISTING HIGHWAYS

LEGEND

GEOLOGY - ROCK TYPES

- SANDSTONE - BASAL KOOTENAY
- SHALE - FERNIE FM.
- LIMESTONE - RUNDLE FM.
- CONGLOMERATE - BLAIRMORE FM.

- —, - - CONTACT - KNOWN, ASSUMED
- FAULTS - NORMAL, THRUST
- SYNCLINAL AXIS
- ANTICLINAL AXIS
- PLATY SILTSTONE, SILTY SHALE } SPRAY RIVER FM.
- SILTY DOL. DOLOMITIC S.S. QTZITE } ROCKY MOUNTAIN FM.

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FORDING OPERATIONS

RK

GENERAL GEOLOGY and COAL PROPERTIES

FORDING COAL LIMITED

1 : 50,000 DATE NOV. 20, 74