FIVE CABIN CREEK PROJECT

1985

GEOLOGICAL REPORT

00718

Crows Nest Resources LIMITED
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April 4, 1986

CONFIDENTIAL

Ministry of Energy, Mines & Petroleum Resources
525 Superior Street
Victoria, B.C.
V8V 1T7

Dear Sirs:

Enclosed please find our report on the Five Cabin Creek Project.

This report has been prepared by Mr. B. McKinstry, an employee of Crows Nest Resources Limited.

Mr. B. McKinstry, M.Sc., graduated in Geology from Carleton University, Ottawa in 1971. Prior to graduation, Mr. McKinstry worked as an assistant for a major mining firm and after graduation as a geologist with a mining firm, a research assistant at Carleton University and a geologist with a consulting firm. Mr. McKinstry has been employed by Crows Nest Resources Limited as a Staff Geologist since 1981, and is a member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta.

I consider the aforementioned geologist to be well qualified to undertake the responsibilities assigned on this project. I am satisfied that the attached report has been competently prepared and justly represents the information obtained from this project.

Yours very truly

B.D. Ryan, P. Geol.
Manager - Geology

Enclosure

00718

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FIVE CABIN CREEK

PEACE RIVER LAND DISTRICT
B.C. COAL LICENCE NUMBERS: 6137-6143 INCLUSIVE
GROUP NUMBER: 376
OWNER: SHELL CANADA LIMITED
OPERATOR: CROWS NEST RESOURCES LIMITED

NTS	93 I/14E, 93 I/15W
LONGITUDE	121° 01' W
LATITUDE	54° 51' N

REPORT PREPARED BY:
BRIAN McKINSTRY
STAFF GEOLOGIST
MARCH, 1986

received April 3, 1986

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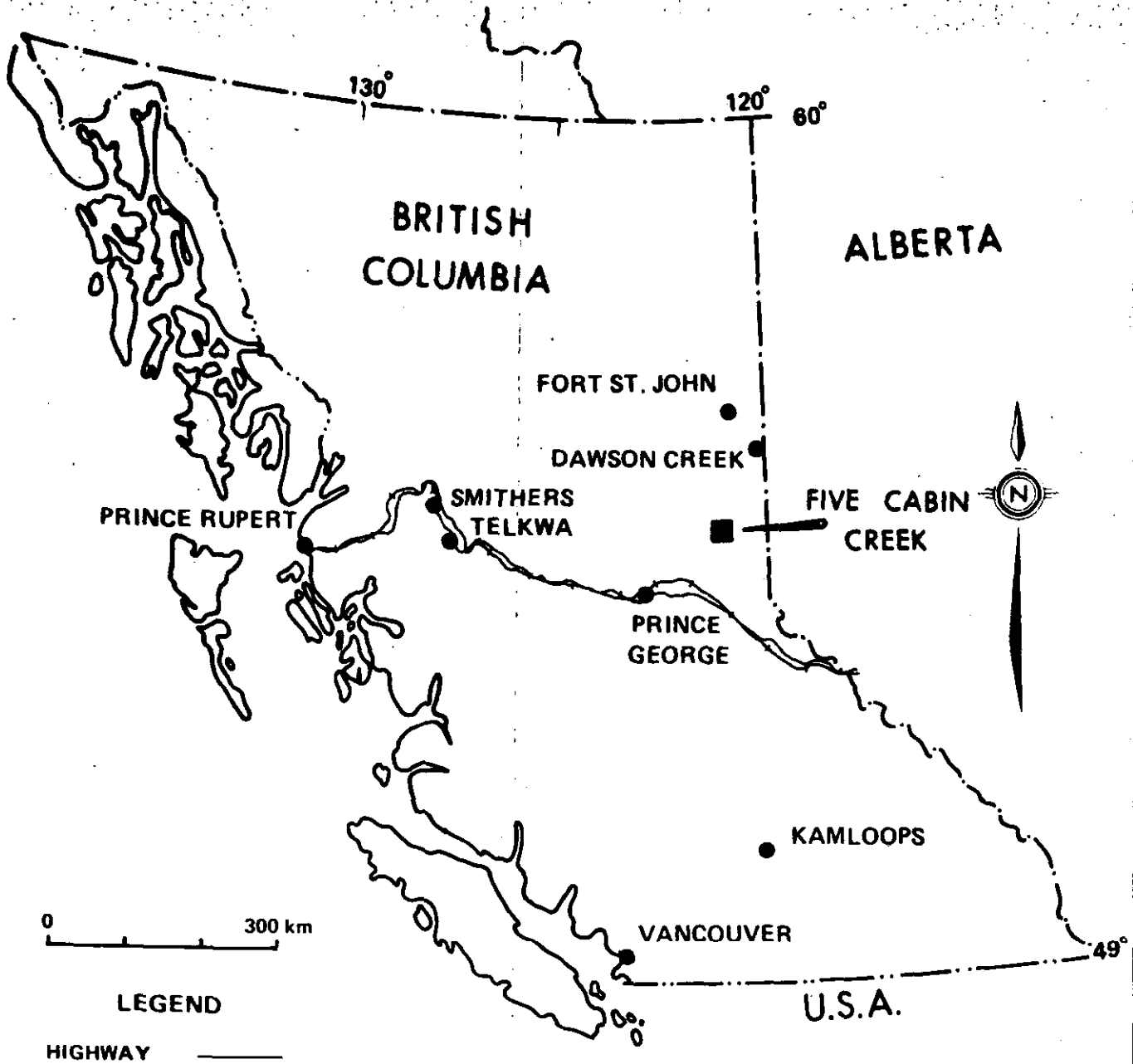

Crowe Nest Resources Limited
EXPLORATION

FIVE CABIN CREEK
NE BC

LOCATION MAP

AUTHOR: A. WHITE	SCALE: AS SHOWN	ENCLOSURE No:
DATE: 82 04 12	REVISED:	DRAWING No: AA-884
To Accompany		

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SUMMARY

The Five Cabin coal property is located within British Columbia coal licences 6137 through 6143 inclusive covering some 2015 hectares of land. The licences are located immediately west of Quintette mountain in northeastern B.C. Access to the property is via helicopter, although a fair weather four wheel drive road approaches the lower east side of the licences from Kinuseo Creek drainage. Total distance from the rail facilities at Quintette mine is 30 kilometers.

Coal licences, 6137-6143 (Group #376) have been held since 1980 by Shell Canada Resources Limited with operations carried out by its wholly-owned subsidiary, Crows Nest Resources Limited. Exploration to date has included 1:20000 and some 1:5000 geological mapping and the drilling of two helicopter assisted diamond drill holes.

Geology within the licence area is dominated by the Five Cabin Creek synclinal structure. Jurassic and lower Cretaceous stratigraphy have been folded into a broad asymmetric synclinal structure plunging at a very shallow angle to the south and with axial plane dipping steeply east and trending northwest-southeast.

Thickness of the coal-bearing Gates member of the lower Cretaceous Commotion Formation is estimated to be 475 meters with up to 11 coal zones in the section of which eight are greater than 1.0 meter. Aggregate thickness of seven of these seams total 21.6 meters over a sectional thickness of 214.0 meters.

Analyses of coal samples from drill core present an unresolved difference in coal rank between the east and west limbs of the synclinal structure. Variable raw ash, medium volatile coal seams on the east limb provide sharp comparison to relatively low raw ash, high volatile coal seams on the west limb.

Coal reserves for Five Cabin Creek property are considered to be of underground mining potential and this qualification tempers the immediacy of future exploration on the property.

1.0 INTRODUCTION

1.1 Location and Access (NTS 93I/14E, 93I/15W)

The Five Cabin Creek property is located in northeast British Columbia, specifically 15 kilometers due east of the confluence of the Murray River and Kinuseo Creek (Enclosure 1). In addition, the property is 30 kilometers due south of the Tumbler Ridge townsite, and 140 kilometers west-southwest of Grande Prairie, Alberta. Access can be gained via a fair weather four wheel vehicle road connecting the upper drainage of Babcock Creek with Kinuseo Creek to the south.

1.2 Geography and Physiography

Relief in the licence area varies from 1120 meters in the drainage areas to 1934 meters on one of the higher ridge tops. The terrain within the licences is almost entirely above treeline with scrub spruce dominant on the lower slopes. The area is cold and windy with snow cover till mid-May. Slopes can be steep but resistant rock units are well exposed.

1.3 Tenure of Land and Coal Rights

Seven licences (6137-6143 inclusive) have been grouped into Group #376 and comprise the Five Cabin Creek property with a total area of 2015 hectares. An application to extend the term of these licences is provided in Enclosure 11.

2.0 WORK DONE

2.1 Summary of Previous Work

In 1980, surface mapping of the property by consultant personnel working for Crows Nest Resources was conducted at a scale of 1:20,000. The work was regional in scope and verified stratigraphy and structure within the area as outlined in Geological Survey of Canada and B.C. Ministry of Energy, Mines and Petroleum Resources maps. (Bell, 1980)

In 1981, a helicopter assisted drilling program was initiated to test the coal-bearing Gates Member of the Commotion Formation. A 241 meter hole was located on the west limb of the Five Cabin Creek syncline and the lower two thirds of the Gates stratigraphy was cored, intersecting five coal seams. Coal quality results from this program suggested a medium-high volatile bituminous rank for this coal. (Bell, 1981)

2.2 Work Accomplished, 1985

In 1985, it was decided to establish a helicopter assisted inclined drill hole on the east limb of the Five Cabin syncline which would core the upper third of the Gates member and hopefully provide correlation across the structure. A site was initially selected at the top of the ridge close to the Gates-Hulcross Member boundary. However, inspection of this site in late spring 1985 necessitated a change in location due to high wind conditions and lack of water. Accordingly, the site was moved south and down-slope to a flat, protected site below treeline close to drainage creeks.

A Longyear 44 drill contracted from D.W. Coates Limited of Vancouver, B.C. was mobilized to a staging area at the headwaters of Babcock Creek. Access to this staging area was via an all weather road from the Heritage Highway - Boundary Road. The drill was air lifted to the prepared drill site using a Bell 205 helicopter. Crew changes and support while drilling were accomplished with a Bell 206 Jet Ranger. Crews were accomodated at the Quasar Petroleum Gas camp near Thunder Mountain. Core was periodically retrieved and flown to the Gas camp for logging and sampling. Due to severe difficulties in drilling through the overburden, the initial hole was abandoned at 45.0 meters and the hole relocated a meter away. Upon completion of drilling of this second hole to 306 meters, a geophysical logging unit owned by BPB Instruments, Calgary Alberta was flown in with an Astar and the hole logged. Finally, the hole was cemented to surface and equipment was returned to the staging area. No survey was conducted of the hole location and the following borehole coordinates have been estimated from 1:5000 orthophotos. Northings and eastings are considered to be accurate to within 25 meters while elevation was continually checked with the helicopter altimeter and is considered accurate to within 5 meters.

Borehole:	FC 85-1
Northing:	6079613.0
Easting:	627877.0
Elevation:	1605.0
Inclination from Surface:	64°
Azimuth:	080
Total Depth:	306.2m

Upon completion of the program, the core was shipped to Charlie Lake for storage.

2.3 Costs of Work, 1985

Enclosure 11 also itemizes specific costs incurred for various aspects of the drilling program. A total of $86,212.07 was spent in 1985 on Five Cabin Creek.

3.0 GEOLOGY

3.1 Regional Geology

Enclosure 3 illustrates the regional geology specific to the Five Cabin Creek area. A series of northeast-southwest trending synclinal and anticlinal fold axis dominate the Cretaceous and Jurassic stratigraphy.

In the Kinuseo Creek area, the oldest rocks exposed are of Mesozoic and Paleozoic age exposed to the west of Five Cabin Creek. These carbonates, sandstones and shales are separated from younger strata by a major west-dipping, northeast-southwest trending thrust fault.

East of this thrust are sediments of Jurassic to Cretaceous age representing recurring cycles of transgression and regression of marine environment. Nomenclature discussed is that of Stott, 1979.

Of specific interest to the Five Cabin Creek area, these sediments have been folded into an elongate, open, asymmetrical syncline gently plunging southward. Particular descriptions of the strata are discussed in the following section.

3.2 Licence Geology

D. Bell, 1981 outlined the stratigraphy evident locally in the Five Cabin area (Enclosure 5). Minnes, Bullhead and portions of the lower Fort St. John Group strata are present in the project area (Enclosure 4). The following is a brief description of each litho-stratigraphic unit.

Minnes Group:

Stratigraphically lying beneath the Cadomin Formation, the Minnes strata are typified by medium and course grained grey sandstones and pebble and cobble conglomerate units. This strata forms a prominent headwall to a glacial cirque carved into the east limb of the syncline.

The Minnes lithology appears to change abruptly along strike and can contain coal, siltstone and shale beds as well as conglomerate and sandstone. Where lithology is principally conglomerate, contact with the overlying Cadomin Formation is difficult to define.

The Group is composed of a sequence of both marine and non-marine strata; often coal or coaly beds occur, but they are rarely thicker than one or two meters, and seem to have little areal extent.

Bullhead Group:

Cadomin Formation

Bell, 1981 restricted the Cadomin Formation to a mostly conglomeratic unit which was characteristically very resistant, light-gray weathering, siliceous and extremely well indurated. In addition, it contains chert clasts with particular shades of rosey pink, jade green and light grey. The unit averages 55m thick.

Gething Formation

To complicate matters further, the Gething Formation also contains considerable amounts of conglomerate. However, clast sizes appear to be slightly smaller than those of the Cadomin. In addition, there appears to be two non-economic coal zones within the unit. The Formation is considerably thinner than the type section in the Peace River Canyon, averaging only 95 meters thick.

Moosebar Formation

This recessively weathering unit is thicker in the Sukunka region but thins southward toward Five Cabin Creek. Exposures of the marine shale lithology were not observed in the map area and average thickness of 130 meters is only an estimate from field observations.

GATES Fm.

Commotion Formation

Stott, 1979 subdivided the Commotion Formation into three separate identifiable sub-units; the Boulder Creek, Hullcross ~~and Gates~~ members.

Gates ~~Member~~ Fm

The Gates ~~member~~ Fm is perhaps the most consistent in thickness of all the units in the Secus mountain - Onion Lake region. It is composed of alternating sequences of conglomerates, sandstones, siltstones, mudstones and coal beds (Enclosure 6). As a general rule the coal seams, while remaining numerous, become thinner upsection. Individual conglomerate units, while massive and often prominent, are thinner and more well-bedded than Gething or Cadomin conglomerates. The borehole drilled in 1981 cored three prominent sandstone - conglomerate marker units in the lower section of the Gates and are referred to as the Torrens sandstone, 1st Gates sandstone and 2nd Gates sandstone (Enclosure 7).

The Torrens sandstone is a distinctive and prominently weathering unit which can be traced for kilometers along strike and represents the base of the Gates member. The upper part is hard and gray changing to a softer brown to tan sandstone in the lower part. The unit probably is representative of a delta front sheet sand. 15-20 meters upsection from the top of the Torrens is the base of the 1st Gates sandstone, often defined by thin characteristic lag conglomerate lenses. The 1st Gates appears to represent a major channel sandstone facies and can average 35-40 meters in thickness. The 2nd Gates sandstone is located in the middle of the Gates section and averages 40-50 meters in thickness. It also contains channel lag conglomerate lenses and may represent successive stacked channel sand units. These three distinctive sandstone beds act as correlation tools in the middle to lower section of the Gates. However, evidence from borehole 85-1 which cored the upper section of Gates (Enclosure 7) indicates a lack of distinctive correlation lithologies. Borehole

85-1 was correlated with borehole 81-1 on the basis of the lowest most 10 meters of sandstone - conglomerate in hole 85-1 being equivalent to the top of the 2nd Gates sandstone in hole 81-1. In effect, this correlation establishes a net total thickness for the Gates member of the Commotion Formation to be 475 meters (Enclosure 8).

Hullcross Member

Overlying the Gates is a sequence of marine shales which thicken northward from Five Cabin. Hole 85-1 successfully cored the entire section establishing a true thickness of 90 meters for the member. Core descriptions detail a monotonous succession of alternating siltstone and fine grained sandstone beds exhibiting laminar and cross-bedding, rip-up clasts, burrowing features and disrupted bedding. The alternate lithologies give the rock a pronounced striped appearance on fresh surface (Enclosure 10).

Boulder Creek Member

The Boulder Creek member is a prominent sandstone unit overlying the Hulcross member and represents a return to non-marine conditions of sedimentation. It is hard, generally gray-weathering, massive and provides a convenient resistant cap to underlying lithologies. It too, can be mapped for kilometers along strike. Boulder debris from this member is considered to have been responsible for initial overburden drilling difficulties at hole 85-1.

3.3 Structural Geology

Previous mapping (Bell, 1980, 1981) has shown that lithological units of the Commotion Formation, GATES Fm Moosebar Formation, Bullhead Group and Minnes Group have been folded into an elongate, open asymmetrical syncline on the Five Cabin licences. Stereoplot data indicate a gentle 4° plunge south for the fold axis. Width across the structure from Gething Formation to Gething Formation is approximately 4 kilometers. To the northwest, the fold is increasingly bevelled by erosion. The style of this folded structure along with thicknesses for each litho stratigraphic unit to be found on the Five Cabin Creek licences are illustrated with two cross-sections 080 and 048 (Enclosure 8). 1985 drilling results reinforced this simple fold model.

4.0 COAL GEOLOGY

Enclosures 6 and 7 illustrate the stratigraphic section of the coal-bearing Gates member of the lower Cretaceous, ~~Commotion Formation~~ in the Five Cabin Creek area. To date, 11 coal seams or zones have been identified based upon present correlation between hole 81-1 and 85-1. Of the eleven coal zones, only eight are greater than 1 meter.

Seam 1 lies directly upon the top of the Torrens sandstone. In hole 81-1 it was 1.9 meters true thickness, consisting of bright soft coal, and tending to be slicked with pyrite staining common. The next coal zone of any significant thickness is seam 5, having a true thickness of 2.1 meters in hole 81-1. This coal seam is located 29.0 meters below the base of the 2nd Gates sandstone, and is characterized by slicked surfaces and carbonaceous, dull coal with bright vitrain bands.

Seam 6 is perhaps the thickest seam in the section with hole 81-1 intersecting 5.16 meters true thickness. It is only 4-5 meters below the base of the 2nd Gates sandstone and is slicked, dull coal with occasional bright banded sections.

Seam 7 is a split seam with the lower part averaging a thickness of 1.15 meters, a 1.1 - 1.8 meter intervening parting of mudstone or siltstone and an upper part averaging 1.6 meters. This coal zone is located 6-15 meters above the 2nd Gates sandstone. Seam 8 also exceeds 1 meter having a true thickness of 1.1 meters in hole 85-1. It is mostly dull coal with occasional bright cleated bands and has a mudstone-rich base located 26.5 meters above 7 seam.

Seam 9 is 3.07 meters true thickness in hole 85-1 and is characterized by hard, dull chunky coal and several .1 - .2 meter siltstone partings.

Seam 10 is similar to seam 7 in being a split coal zone with upper and lower sections. The lower section is 1.75 meters thick consisting of dull and bright coal. 1.35 meters of mudstone separate the lower coal seam from 3.85 meters of bright cleated coal in the upper section.

The final coal zone greater than 1 meter in thickness is 11 seam occurring 10 meters beneath the top of the Gates member. It also is a split seam with two 1 meter seams separated by .75 meters of mudstone. Both coal bands are flakey to polished and slicked in appearance.

Clearly most of the thicker coal seams occur in the middle and upper parts of the Gates section, associated with the 2nd Gates sandstone. In this respect, this sandstone unit may act as an effective field mapping tool in locating surface exposures of thick coal zones within the Gates section.

5.0 COAL QUALITY

Enclosure 11 presents a tabulation of coal analyses from the coal intersections of hole 85-1. These include ash, FSI and moisture determinations on a raw basis; ash, volatile matter, fixed carbon, FSI, calorific value, sulphur and moisture determinations on a washed basis and Geiseler plasticity measurements for seams 9, 10 upper and 11 upper. In addition quality has been posted alongside the true thickness strip logs for holes 81-1 and 85-1.

A comparison of results from the two boreholes from each limb of the syncline reveals a surprising discrepancy. Earlier results from 81-1 suggested low raw ash, high volatile coal was present at Five Cabin Creek. However, results from this year's program reveal an entirely different quality regime for coal on the east limb of the syncline. While raw ash values are quite variable, volatile matter values on a dry mineral matter free basis indicate a medium volatile rank for this coal. In addition, the volatile matter is apparently decreasing down section. This is in contrast to hole 81-1 where no such trend is observed. Even more surprising is that the results from hole 85-1 are from coal seams in the upper section of the Gates member while hole 81-1 cored the middle and lower sections of the Gates member.

In effect, analytical results from each limb of the syncline appear to be entirely independent of each other. No suitable explanation for this phenonenon is available at this time.

6.0 RESERVES

No estimation of reserves has been made in this report. This is attributed to restricted surface exposure of the Gates member, limited drilling information and tenuous correlation to date.

Future exploration may resolve these difficulties allowing for determination of a resource value for the Five Cabin Creek coal measures.

7.0 RECOMMENDATIONS FOR FURTHER WORK

In the fall of 1985, a new orthophoto base map at a scale of 1:5000 was constructed. This base now provides an accurate control from which detailed mapping of Five Cabin Creek should be completed.

Future drilling would, by the sensitive, high alpine nature of the property, be restricted to helicopter assisted sites. Due to the expensive nature of this type of drilling, exploration should be concentrated on the west limb of the syncline testing the upper section of the Gates member. In addition, surface samples from coal seams on the east limb should be collected and reflectance measurements made to substantiate the medium volatile rank of the coal in this area.

In addition, there remains considerable scope for detailed mapping of the Gates member stratigraphy as well as hand trenching for coal samples.

At present, Five Cabin Creek must be regarded as an underground prospect and this qualification may limit exploration activity for the immediate future.

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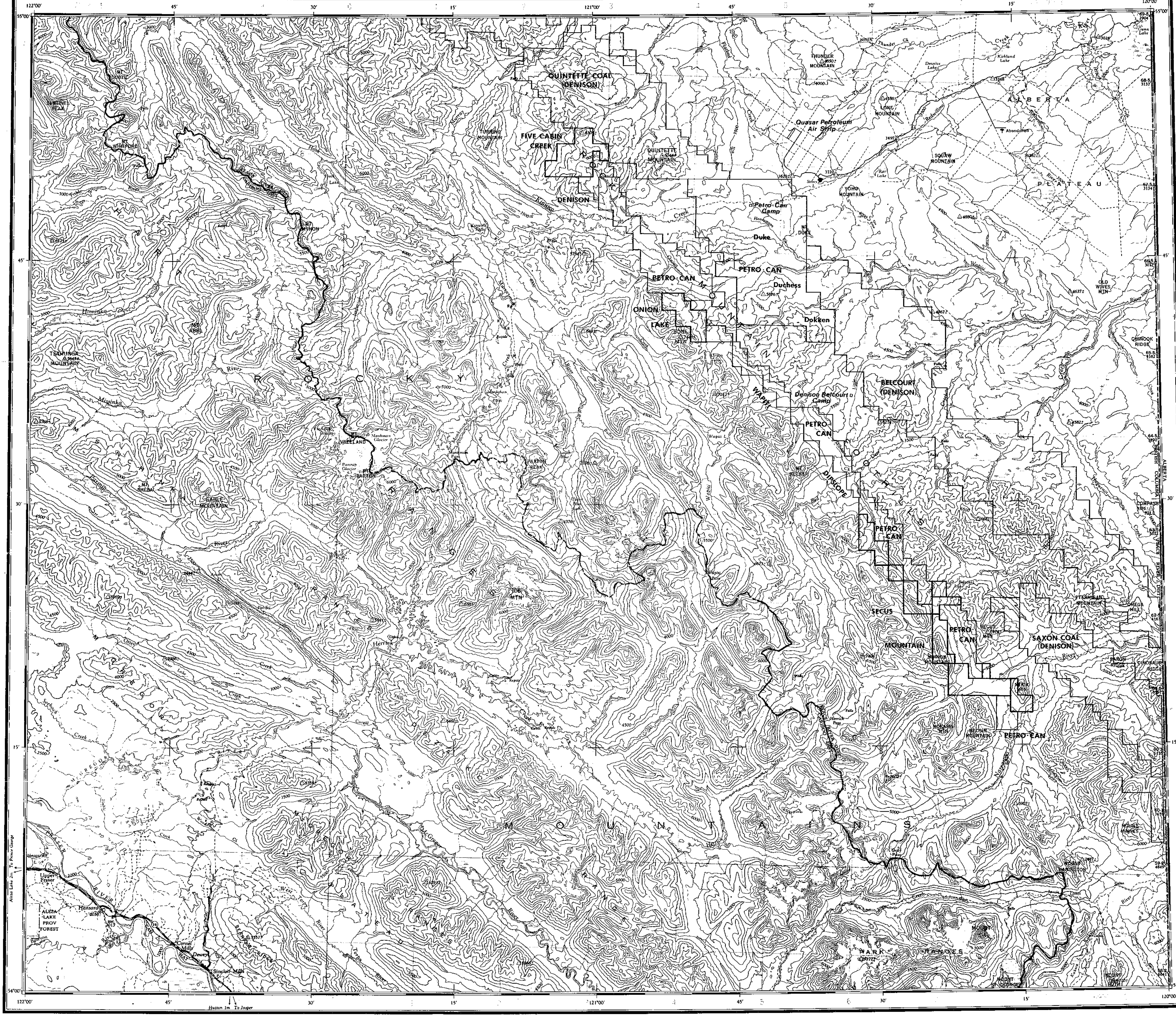
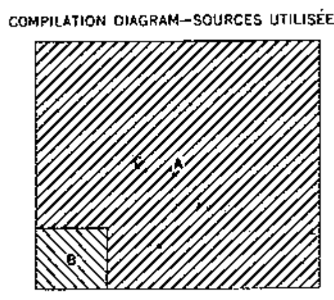


COMPILATION DIAGRAM—SOURCES UTILISÉES



A– Large scale topographic manuscripts, photogrammetric, 1956-59
B– Large scale topographic maps, photogrammetric, 1961.

A– Manuscrits topographiques et photogrammétriques à grande échelle, de 1956-59
B– Cartes topographiques et photogrammétriques à grande échelle, de 1961.

Produced by the ARMY SURVEY ESTABLISHMENT, R.C.E.
Information depicted current as of 1963. Printed 1966.

1964 Magnetic declination for this map varies from 26° 44' easterly at the centre of the west edge to 26° 24' easterly at the centre of the east edge. Annual change decreasing 3.7'

Property outline incorrect

Crows Nest Resources Limited

EXPLORATION
SECUS MOUNTAIN
N.E. B.C.

LOCATION MAP

Scale 1:250,000 Échelle

Miles 5 0 5 10 15 20 Miles
Kilometres 5 0 5 10 15 20 25 30 Kilomètres

Transverse Mercator Projection
North American Datum 1927
Contour Interval 500 feet
Elevations in feet above Mean Sea Level

Projection transverse de Mercator
Réseau géodésique nord-américain unifié 1927
Équidistance des courbes 500 pieds
Élévations en pieds au-dessus du niveau moyen de la mer

Copies may be obtained from the Map Distribution Office, Department of Mines and Technical Surveys, Ottawa.

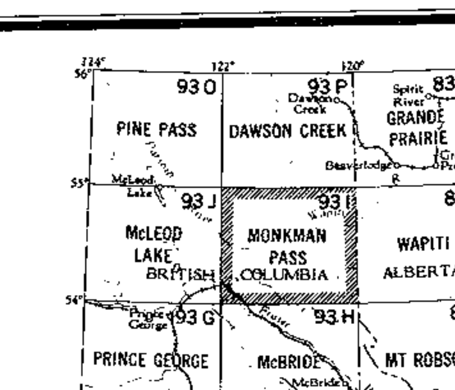
Ces cartes sont en vente au Bureau de distribution des cartes, ministère des Mines et des Relevés techniques, Ottawa.

Publiée par le SERVICE TOPOGRAPHIQUE DE L'ARMÉE, (G.R.C.) Renseignements à jour en 1963. Imprimée en 1966.

La déclinaison magnétique (1964) varie de 26° 44' vers l'est au centre de la bordure ouest de la feuille à 26° 24' vers l'est au centre de la bordure est. Variation annuelle décroissante 3.7'

Roads: / Routes:
hard surface, all weather .... pavée, toute saison .... more than 2 lanes / plus de 2 voies; 2 lanes / 2 voies; less than 2 lanes / moins de 2 voies
loose surface, all weather .... de gravier, toute saison .... 2 lanes or more / 2 voies ou plus; less than 2 lanes / moins de 2 voies; dry weather / période sèche
cart track or trail .... de terre ou sentier
Railway, normal gauge . Chemin de fer, écartement normal ... station / gare; multiple track / voies multiples; flagstop / arrêt; single track / voie unique; (abandoned) / (abandonné)
Township or Parish .... Canton ou Paroisse ...... surveyed / levée; unsurveyed / non levée
Depression contours ..... Courbes de cuvette
Spot elevation; precise, approximate ..... Point coté; précis, approximatif ..... 950 . 950±
Power transmission line ..... Ligne de transport d'énergie

Town .... Ville
Village or Settlement .. Village ou hameau
Post Office .... Bureau de poste
Church .... Église
School .... École
Boundary monument ... Borne-frontière
Airport .... Aéroport
Seaplane base .... Base d'hydravions
Stream intermittent or dry .. Cours d'eau intermittent ou à sec
Intermittent lake .... Lac intermittent
Rapids; falls ...... Rapides; chute
Marsh or Swamp .... Marais ou marécage
Lighthouse .... Phare
Horizontal control point ..... Point géodésique
Landing ground .... Piste d'atterrissage
Seaplane anchorage .. Amarrage d'hydravions



Index to adjoining maps of the National Topographic System
Tableau d'assemblage du Système National de Référence Cartographique

MONKMAN PASS
93 I
EDITION 1

ENCLOSURE 1

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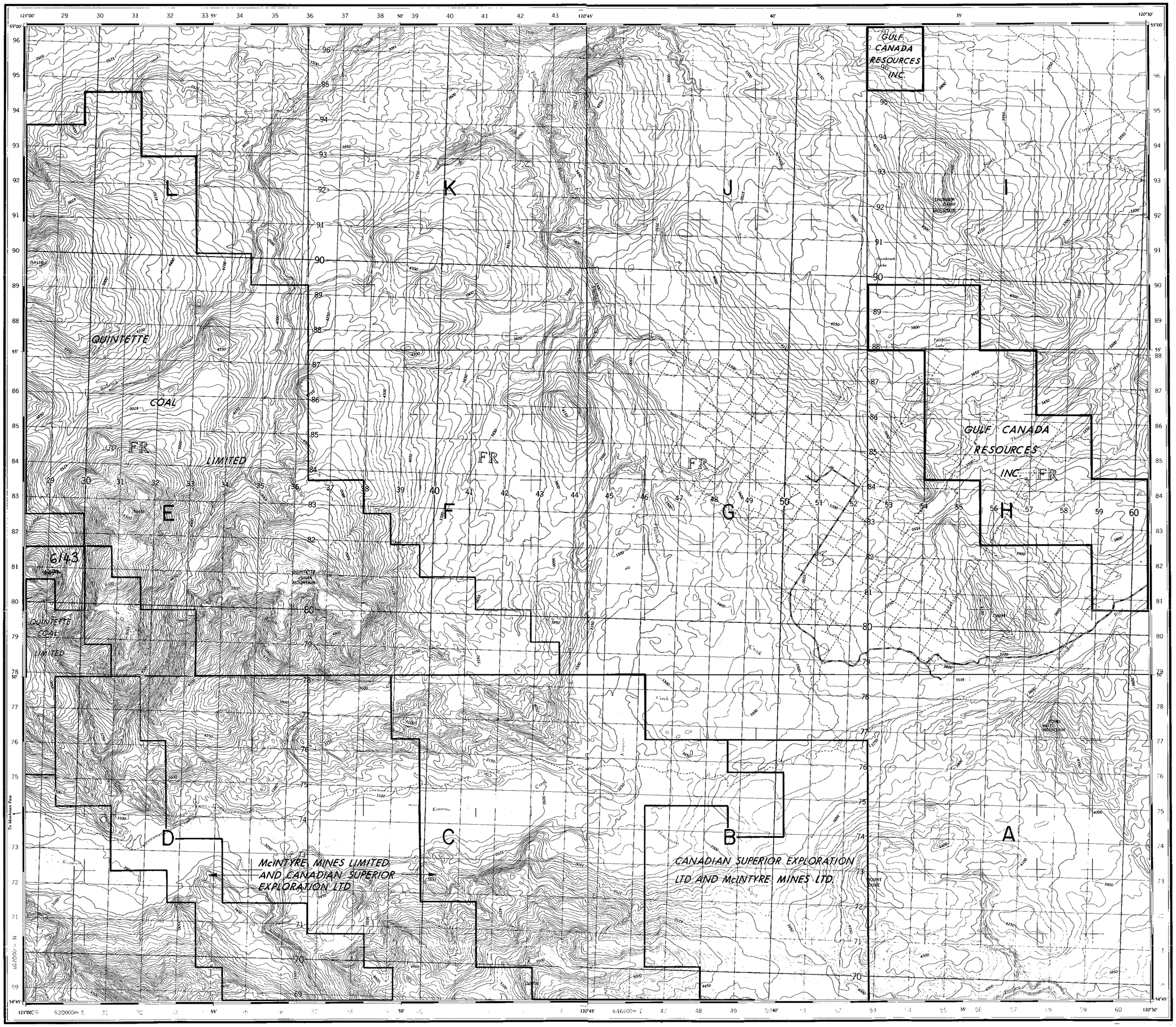
93 I/15W 1:50,000 CANADA EDITION 1

1:50,000 CANADA EDITION 1 93 I/15E



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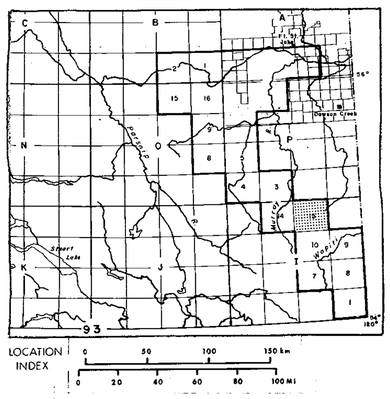
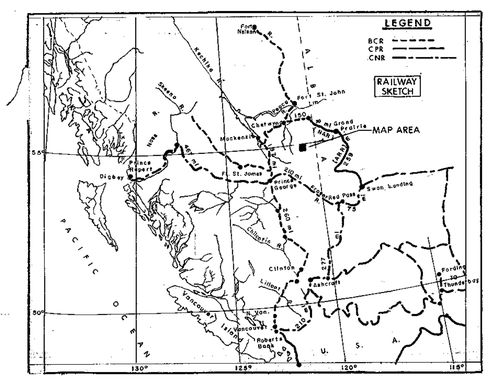




KINUSEO CREEK

PEACE RIVER DISTRICT,

BRITISH COLUMBIA

SCALE 1:50,000 ÉCHELLE

Miles 1 0 1 2 3 Miles

Metres 1000 500 0 1000 2000 3000 4000 Mètres

Yards 1000 500 0 1000 2000 3000 4000 Verges

CONTOUR INTERVAL 50 FEET
Elevations in Feet above Mean Sea Level

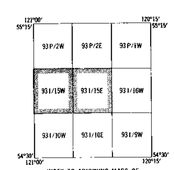
Transverse Mercator Projection
North American Datum 1927

MAGNETIC DECLINATION 25°54' EAST
AT CENTRE OF MAP 1965.
Annual change decreasing 4.1'

ÉQUIDISTANCE DES COURBES 50 PIEDS
Élévations en pieds au-dessus du niveau moyen de la mer

Projection transverse de Mercator
Réseau géodésique nord-américain unifié 1927

DÉCLINAISON MAGNÉTIQUE AU CENTRE
DE LA FEUILLE EN 1965: 25°54' EST
Variation annuelle décroissante 4.1'



93 I/15

Crows Nest Resources Limited

EXPLORATION

KINUSEO CREEK

NORTHEASTERN B.C.
PEACE RIVER LAND DISTRICT

COAL LAND DISPOSITION MAP

SHELL- CNRL LICENCES: FIVE CABIN CREEK
NTS: 93-I-15 BLK: E
MAP 2 OF 2

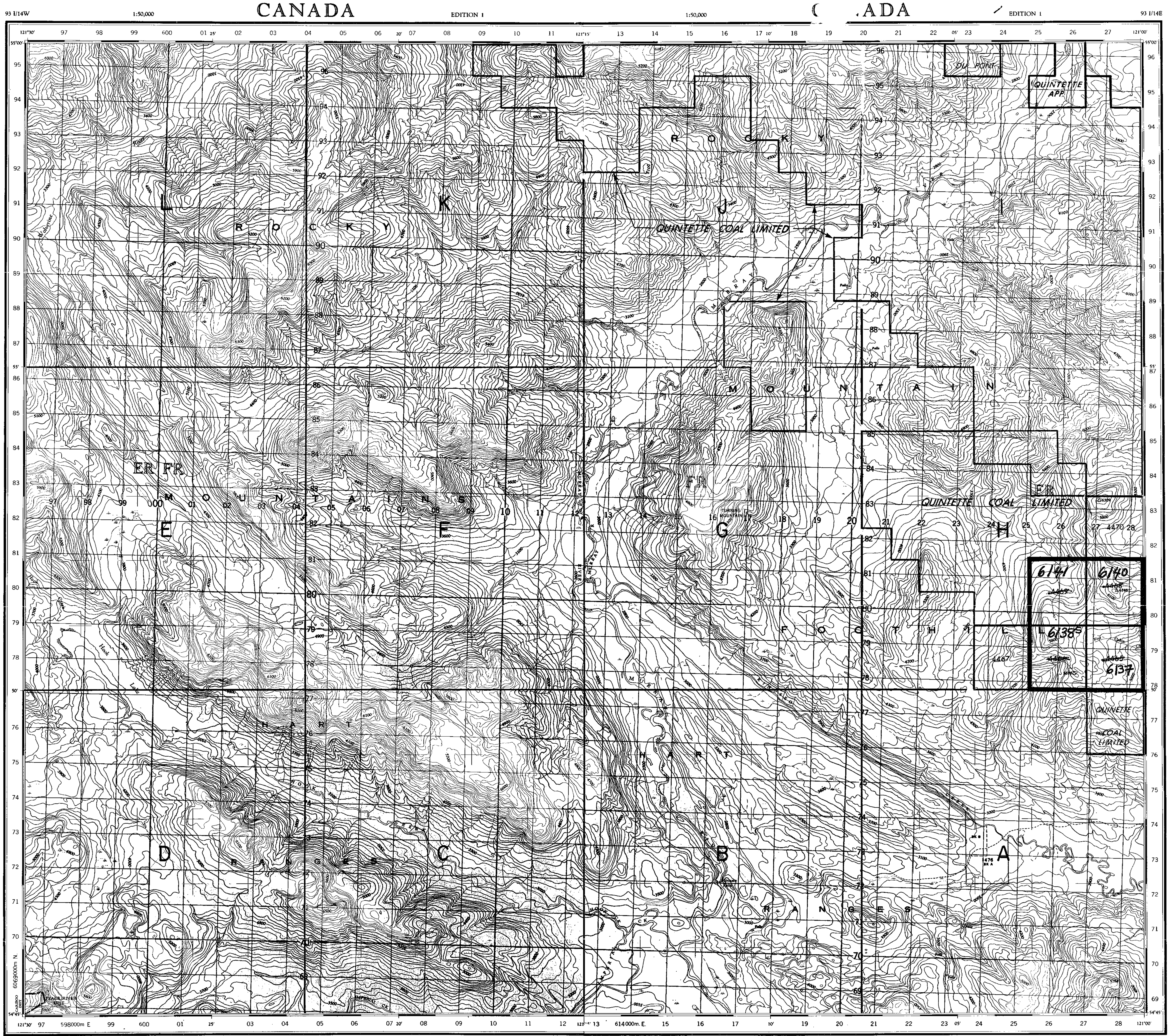
NTS 93 I/15

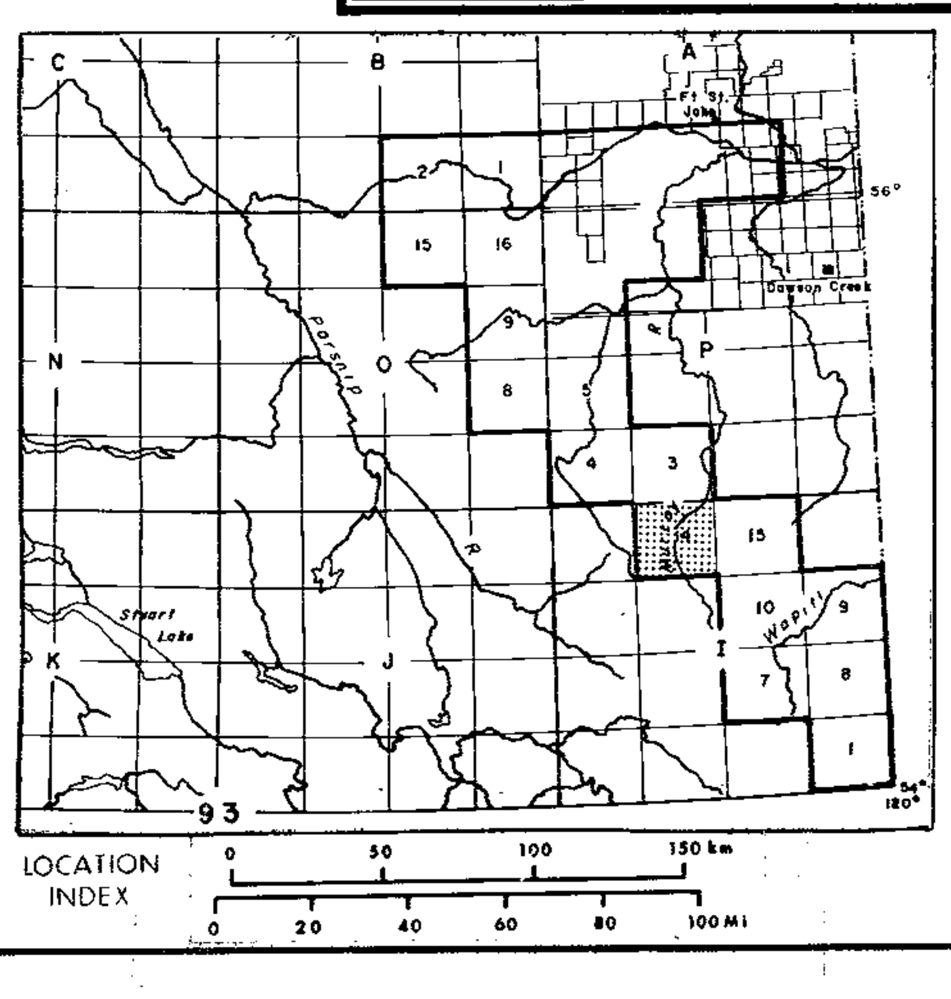
AUTHOR: OLSON-MARTONHEGYI	SCALE: 1: 50 000	ENCLOSURE No :
DATE: DEC. 1979	REVISED:	DRAWING No: HC-18D
To Accompany		

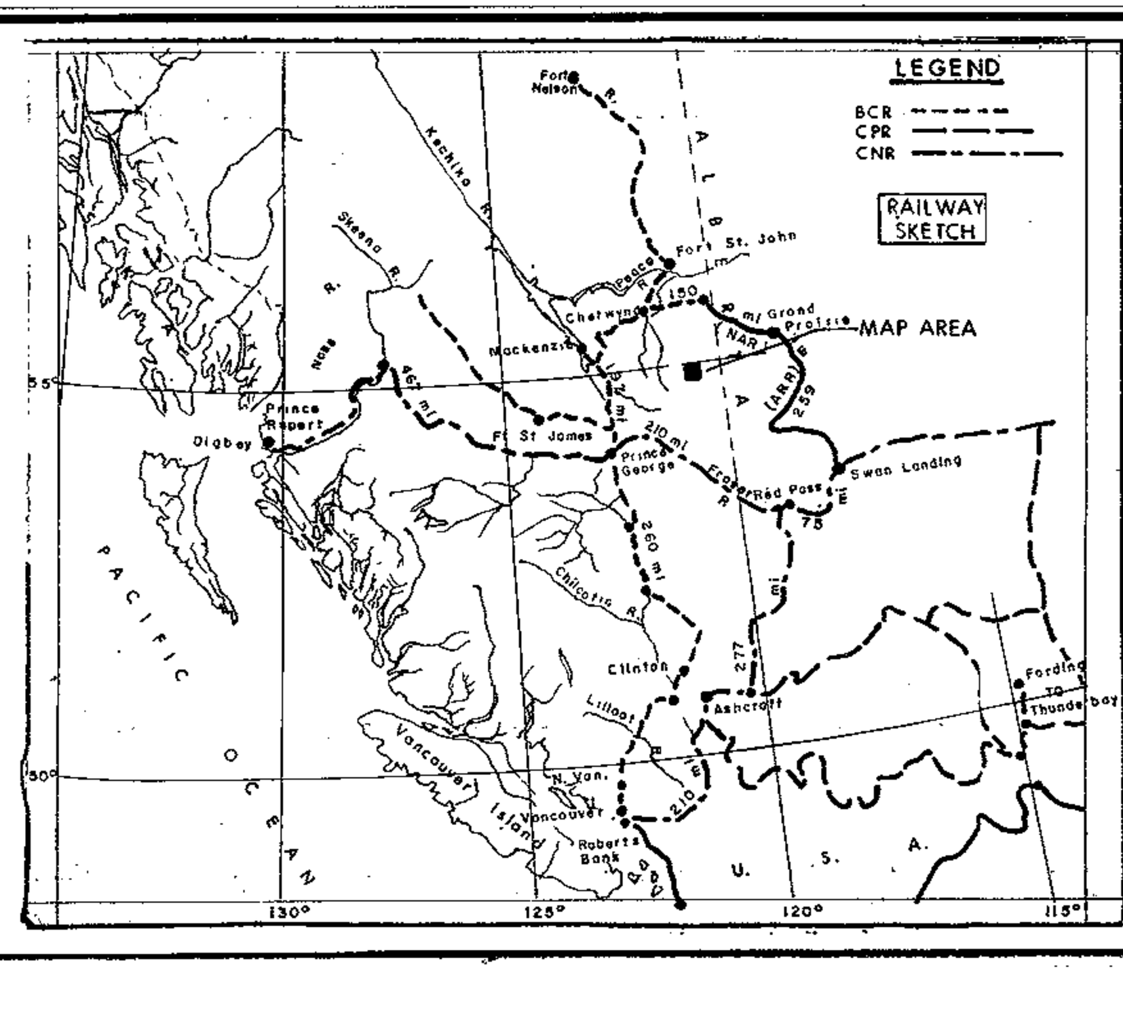
RMSH16

ENCLOSURE 2

00718







KINUSEO FALLS

BRITISH COLUMBIA

SCALE 1:50,000 ÉCHELLE

Miles 1 0 1 2 3 Milles
Metres 1000 500 0 1000 2000 3000 4000 Mètres
Yards 1000 500 0 1000 2000 3000 4000 Verges

CONTOUR INTERVAL 100 FEET
Elevations in Feet above Mean Sea Level

Transverse Mercator Projection
North American Datum 1927

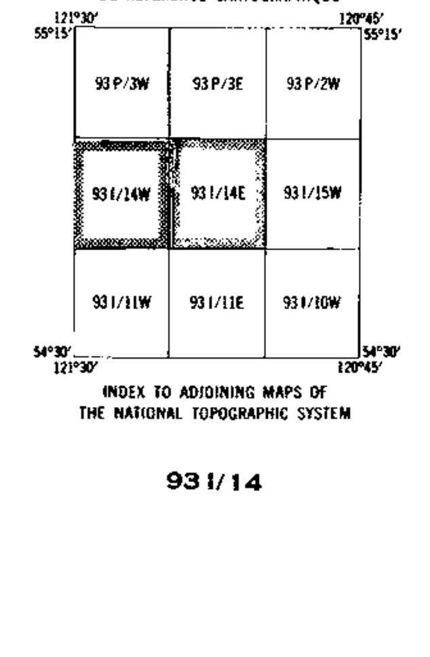
MAGNETIC DECLINATION 25°59′ EAST AT CENTRE OF MAP 1965
Annual change decreasing 4.1′

ÉQUIDISTANCE DES COURBES 100 PIEDS
Élévations en pieds au-dessus du niveau moyen de la mer

Projection transverse de Mercator
Réseau géodésique nord-américain unifié 1927

DÉCLINAISON MAGNÉTIQUE AU CENTRE DE LA FEUILLE EN 1965 : 25°59′ EST
Variation annuelle décroissante 4.1′

TABLEAU D'ASSEMBLAGE DU SYSTÈME NATIONAL DE RÉFÉRENCE CARTOGRAPHIQUE



INDEX TO ADJOINING MAPS OF THE NATIONAL TOPOGRAPHIC SYSTEM

93 I/14

Crows Nest Resources Limited

EXPLORATION

KINUSEO FALLS

NORTHEASTERN B.C.
PEACE RIVER LAND DISTRICT

COAL LAND DISPOSITION MAP

SHELL-CNRL LICENCES: FIVE CABIN CREEK
NTS: 93-I-14 BLK: H
MAP 1 OF 2

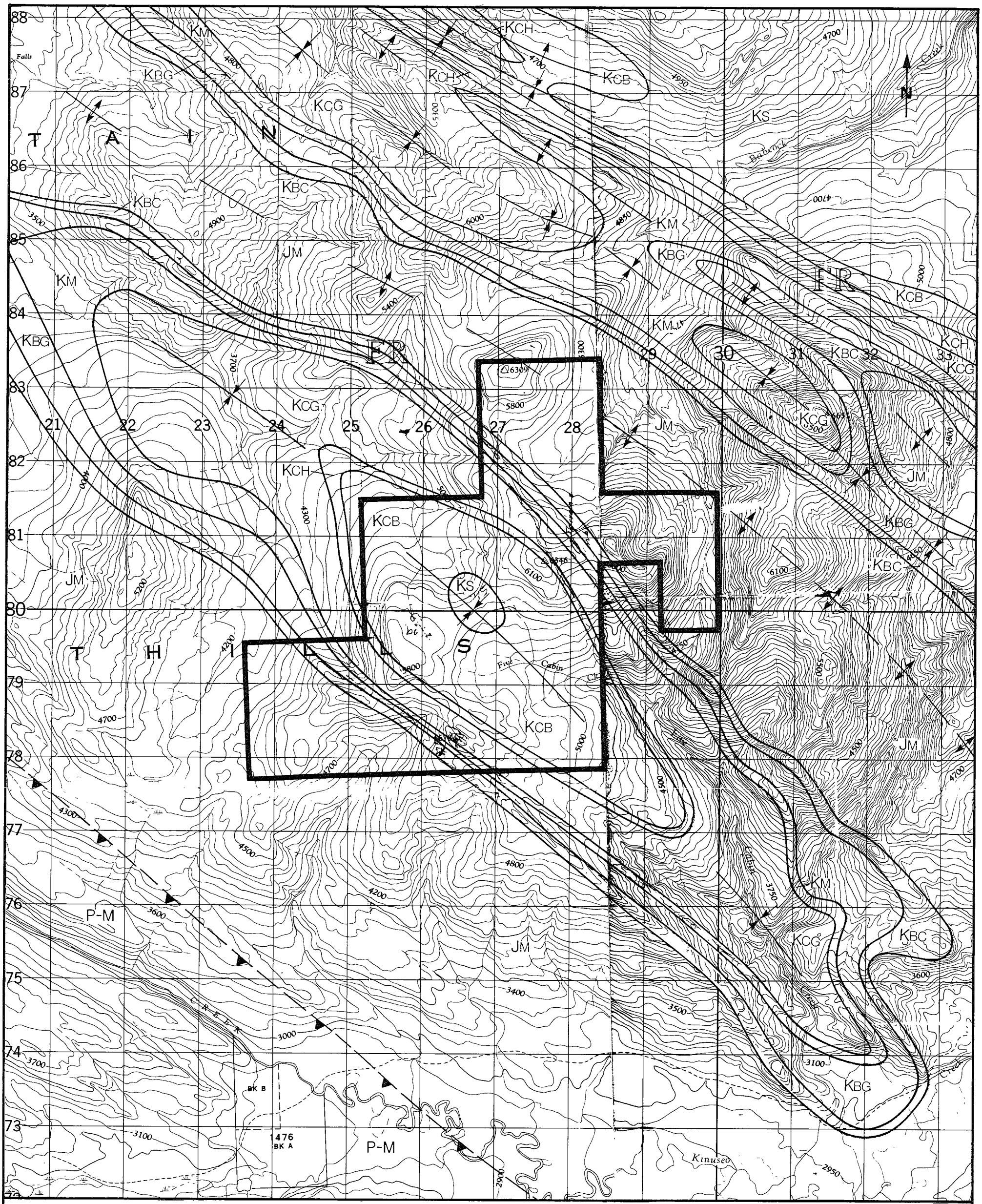
NTS 93 I/14

AUTHOR: WHITE/FIETZ	SCALE: 1:50000	ENCLOSURE No:
DATE: DEC. 1979	REVISED: JULY, 1984	DRAWING No: RM5H15
To Accompany		

HC-18C

ENCLOSURE 2

00718



LEGEND

CRETACEOUS

- KS SHAFTSBURY FORMATION
- KC COMMOTION FORMATION
  - KCB BOULDER CREEK MEMBER
  - KCH HULCROSS MEMBER
  - KCG GATES MEMBER
- KM MOOSEBAR FORMATION
- KB BULLHEAD GROUP
  - KBG GETHING FORMATION
  - KBC CADOMIN FORMATION

JURASSIC

- JM MINNES GROUP

PALEOZOIC/MESOZOIC

- P-M UNDIVIDED STRATA

THRUST FAULT

ANTICLINE, SYNCLINE

Crows Nest Resources Limited

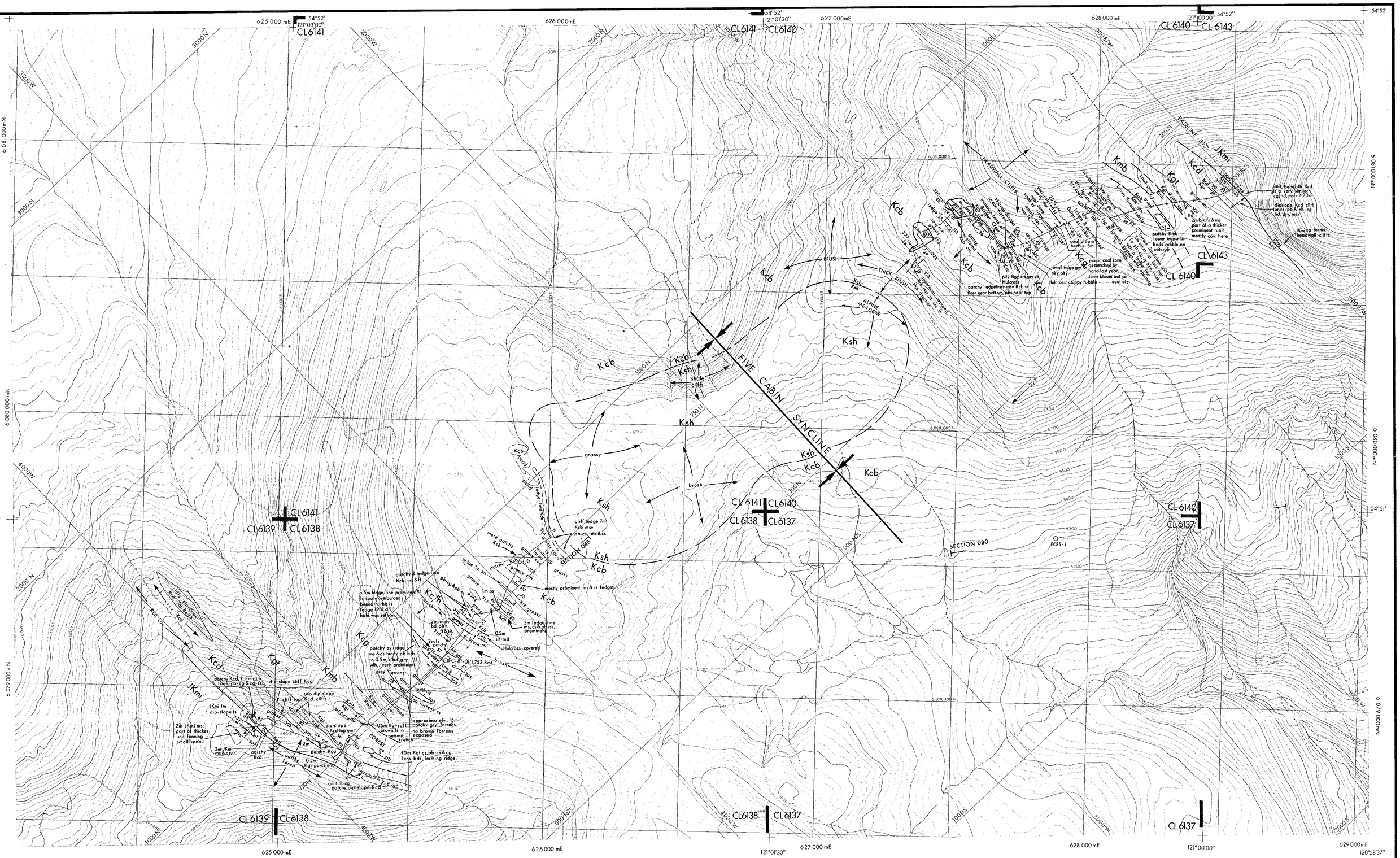
FIVE CABIN CREEK
B.C.

COMPILATION GEOLOGY

AUTHOR McKINSTRY	SCALE 1:50 000	DRAWN BY R G P
DATE 86-04	REVISED	DRAWING No CA-330
To Accompany		

00718

ENCLOSURE 3



REFERENCE

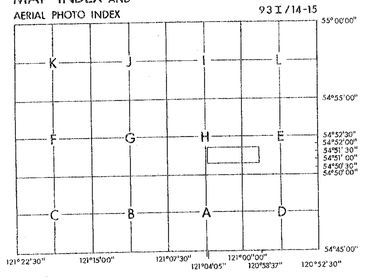
Improved road		River	
Secondary road		Stream	
Track or trail		Intermittent stream	
Railway		Swamp	
Fence		Contours	4700
Wall		Control-Monument	△ T-12
Cut line		Control-Photo	△ 22003
Tree area		Spot elevation	4567
Tree line		Photo point	+18-162

Compiled by
NORTH WEST SURVEY CORP. LTD

T.N.
Grid North

MAP INDEX AND AERIAL PHOTO INDEX

93 I/14-15



GEOLOGICAL LEGEND

CRETACEOUS

- Ksh — Shaftesbury Formation
- Kc — Fort St. John Group
- Kcb — Commotion Formation
- Kch — Boulder Creek Member
- Kcg — Hulcross Member
- Gates Member

- Kmb — Ballhead Group
- Kcd — Moosebar Formation
- Cadomin Formation

JURASSIC - CRETACEOUS

- JKmi — Minnes Group

Thrust fault, position exposed

Thrust fault, position approximate

Fault other than thrust

Anticline

Syncline

Isolated outcrop, sketched to extent and size:

Strike & dip where strike line of symbol touches outcrop outline

Strike & dip where strike & dip lines of symbols intersect

Patchy, indeterminate outcrop

Outcrop with exposed contact

Chain-and-compass line (tick marks are stations) with outcrop sketched to size and limits along chained line; strike & dip where strike line of symbol touches chained line.

Chain & compass line; attitudes refer to strike & dip at nearest tick (chain station).

SCALE 1:5 000

100 0 100 200 300

CONTOUR INTERVAL: 20'
DATE OF PHOTOGRAPHY JULY, 1971
DATE OF MAPPING DECEMBER, 1971

ABBREVIATIONS LEGEND, MAPS AND CROSS SECTIONS

1. Sizes	cm	centimeters true thickness
	m	meters true thickness
2. Lithologic Types	cg, cgs	conglomerate, -s
	md	mudstone
	sh	shale
	slt	siltstone
	ss	sandstone
	qzt	quartzite, -itic
3. Grain Sizes	bld, blds	boulder, -s
	cb, cbs	cobble, -s
	pb, pbs	pebble, -s
	cs	coarse-grained sandstone
	ms	medium-grained sandstone
	fs	fine-grained sandstone
	vfs	very fine-grained sandstone
4. Bed Thickness	fiss	fissile
	flgy	flaggy
	mav	massive
	platey	platey
4. Bedding	bd, bds	bed, -s
	intbd	interbedded
	x-bd	cross-beddad
5. Colours	blk	black
	brn	brown
	grn	green
	gry	grey
	rsty	rusty
	lt	light
	drk	dark
6. Miscellaneous	otc, otcs	outcrop, -s
	occ	occasional
	mnr	minor
	cov	covered
	rsv	recessive
	res	resistent
	hd	hard
	ovlie	overlain
	unlin	underlain
	wth, wthg	weathers, weathering

Crows Nest Resources Limited
EXPLORATION

FIVE CABIN CREEK
N.E. BRITISH COLUMBIA

GEOLOGY MAP

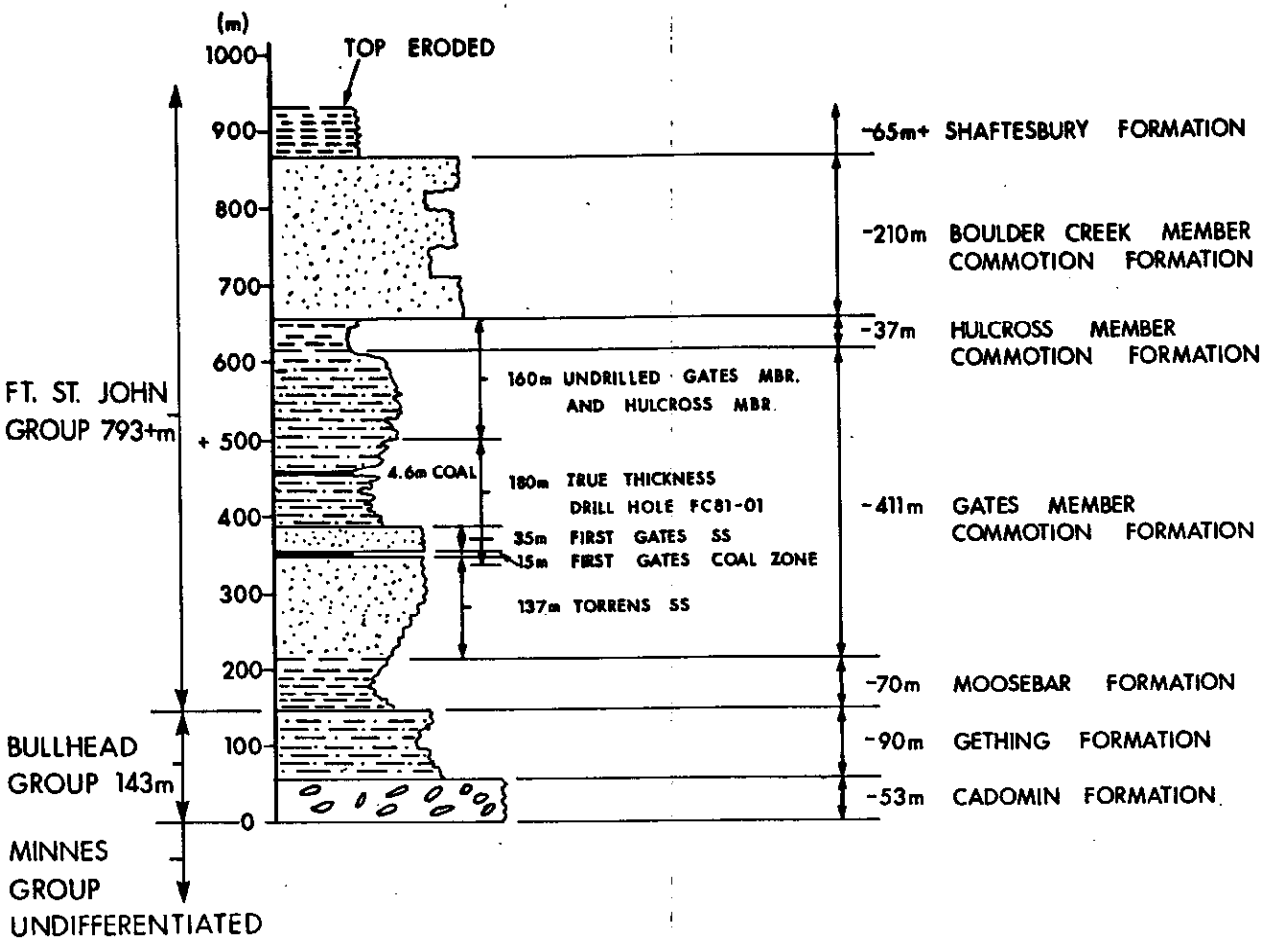
N.T.S. 93I/14-15 U.T.M ZONE 10

AUTHOR: D. BELL	SCALE: 1:5 000	ENCLOSURE No:
DATE: 82-03	REVISED: 86-03	DRAWING No. FC2U01
To Accompany		

HA 100

ENCLOSURE 4

00718



SANDSTONE, prominent

COAL SEAM or ZONE, recessive

SANDSTONE, SILTSTONE, SHALE COAL SEAMS

MARINE SHALE, recessive

CONGLOMERATE, prominent

ENCLOSURE 5

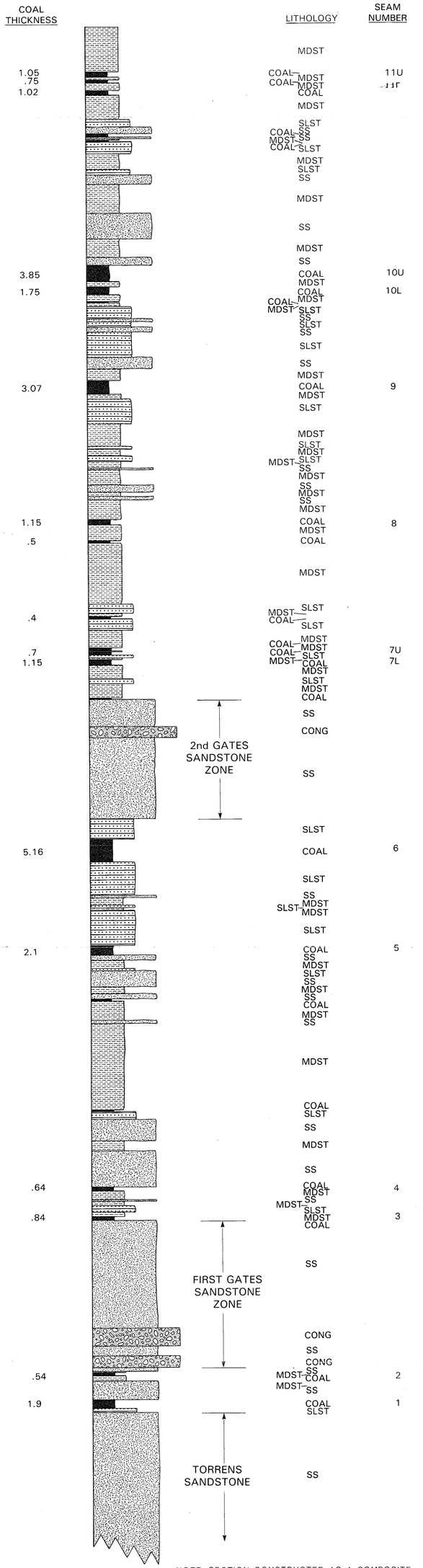
Crows Nest Resources Limited
EXPLORATION

FIVE CABIN CREEK
N.E. BRITISH COLUMBIA

STRATIGRAPHIC SECTION

AUTHOR: D. BELL	SCALE: 1:10 000	ENCLOSURE No:
DATE: MAR. 82	REVISED:	DRAWING No: AA-885
To Accompany		

00718



NOTE: SECTION CONSTRUCTED AS A COMPOSITE OF BOREHOLES FC81-1 AND FC85-1

Crows Nest Resources Limited

FIVE CABIN CREEK
N.E. B.C.

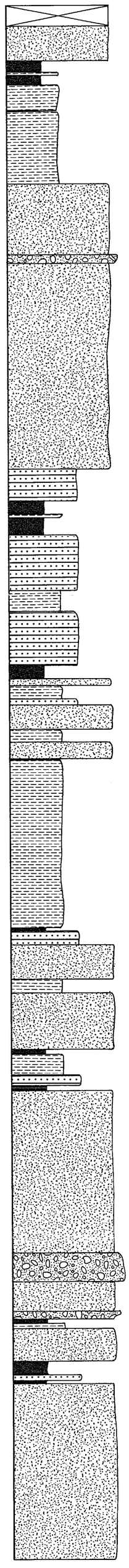
GATES MEMBER (COMMOTION FORMATION) STRATIGRAPHIC SECTION (TRUE THICKNESS)

NTS-93I/14

AUTHOR: B. McKINSTRY	SCALE: 1:500	DRAWN BY: R. G. P
DATE: 86-01	REVISED:	DRAWING No: FC6U02
To Accompany		

00718

ENCLOSURE 6



LITHOLOGY	SEAM	QUALITY RAW ASH	CLEAN ASH	CLEAN VM (DMMF)	CLEAN FSI	CLEAN S	YIELD
CASING							
SS							
COAL	7	12.82	7.12	30.3	0.0	.47	79
MDST		13.24	9.56	31.3	0.5	.44	83
COAL							
MDST							
COAL							
MDST							
SS							
CONG							
2nd GATES SS							
SS							
SS							
SLST							
COAL	6	10.88	6.6	32.2	7.0	.32	85
MDST							
COAL							
SLST							
MDST							
SLST							
COAL	5	26.94	9.49	30.9	7.5	.51	60
SS							
MDST							
SLST							
SS							
MDST							
SS							
COAL							
MDST							
COAL							
SLST							
SS							
MDST							
SS							
COAL	4						
MDST							
SLST							
COAL	3						
SS							
1st GATES SS							
CONG							
SS							
CONG							
COAL	2						
MDST							
SS							
COAL		12.54	4.43	33.0	8.5	.53	83.0
SLST	1						
COAL							
TORRENS SS							
SS							

CRETACEOUS

FORT ST. JOHN GROUP

COMMOTION FORMATION

KCB BOULDER CREEK MEMBER

KCH HULCROSS MEMBER

KCG GATES MEMBER

Crows Nest Resources Limited

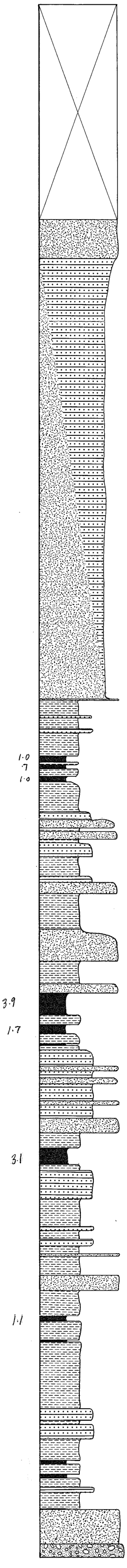
FIVE CABIN CREEK
N.E. B.C.

TRUE THICKNESS
STRIP LOG DH 81-1 (241m)
AZIM.: 227 INCL.: 57°

NTS-93I/14

AUTHOR: B. McKINSTRY	SCALE: 1:500	DRAWN BY: R.G.P.
DATE: 86-01	REVISED:	DRAWING No: FC6U04
To Accompany		

00718



	LITHOLOGY	SEAM	QUALITY	RAW ASH	CLEAN ASH	CLEAN VM (DMMF)	CLEAN FSI	CLEAN S	YIELD	FLUIDITY (DDPM MAX)
		Kcb								
	CASING									
	SS									
	BOULDER CREEK									
		Kch								
	SS/SLST									
	HULCROSS									
	CONG									
	MDST									
	SLST									
	MDST									
1.0	COAL									
.7	MDST									
1.0	COAL		11U	15.51	7.75	30.70	8.0	.76	84.6	70
	MDST			33.43	8.56	33.05	8.5	1.14	58.4	
	COAL		11L	8.56	6.21	23.44	1.0	.70	98.6	
	MDST									
	SLST									
	SS									
	SS									
	MDST									
	SLST									
	MDST									
	SLST									
	SS									
	MDST									
	SS									
3.9	COAL		10U	25.04 [19.34	10.55] 10.1	26.95] 27.38	3.5] 5.0	.43] .43	81.8] 62.9	2
	MDST									
1.7	COAL		10L	21.62	7.62]	28.45]	7.0]	.41]	72.2]	
	MDST									
	COAL									
	MDST									
	SLST									
	SS									
	SLST	Kcg								
	SS									
	SLST									
	SS									
	SLST									
	SS									
	MDST									
3.1	COAL		9	35.35	8.16	27.75	4.5	.42	55.8	7
	MDST									
	SLST									
	MDST									
	SLST									
	MDST									
	SLST									
	SS									
	MDST									
	SS									
	MDST									
1.1	COAL		8	30.28	13.42	26.94	4.5	.46	65.6	
	MDST									
	COAL									
	MDST									
	SLST									
	MDST									
	SLST									
	MDST									
	COAL		7U	8.68	7.19	23.37	3.0	.54	96.9	
	MDST		7L	30.58	6.93	26.47	7.5	.67	58.1	
	COAL									
	MDST									
	SLST									
	MDST									
	COAL									
	SS									
	CONG									

CRETACEOUS

FORT ST. JOHN GROUP

COMMOTION FORMATION

KCB BOULDER CREEK MEMBER

KCH HULCROSS MEMBER

KCG GATES MEMBER

Crows Nest Resources Limited

FIVE CABIN CREEK
N.E. B.C.

TRUE THICKNESS
STRIP LOG 85-1 (308.2m)
AZIM.: 080 INCL.: 64°

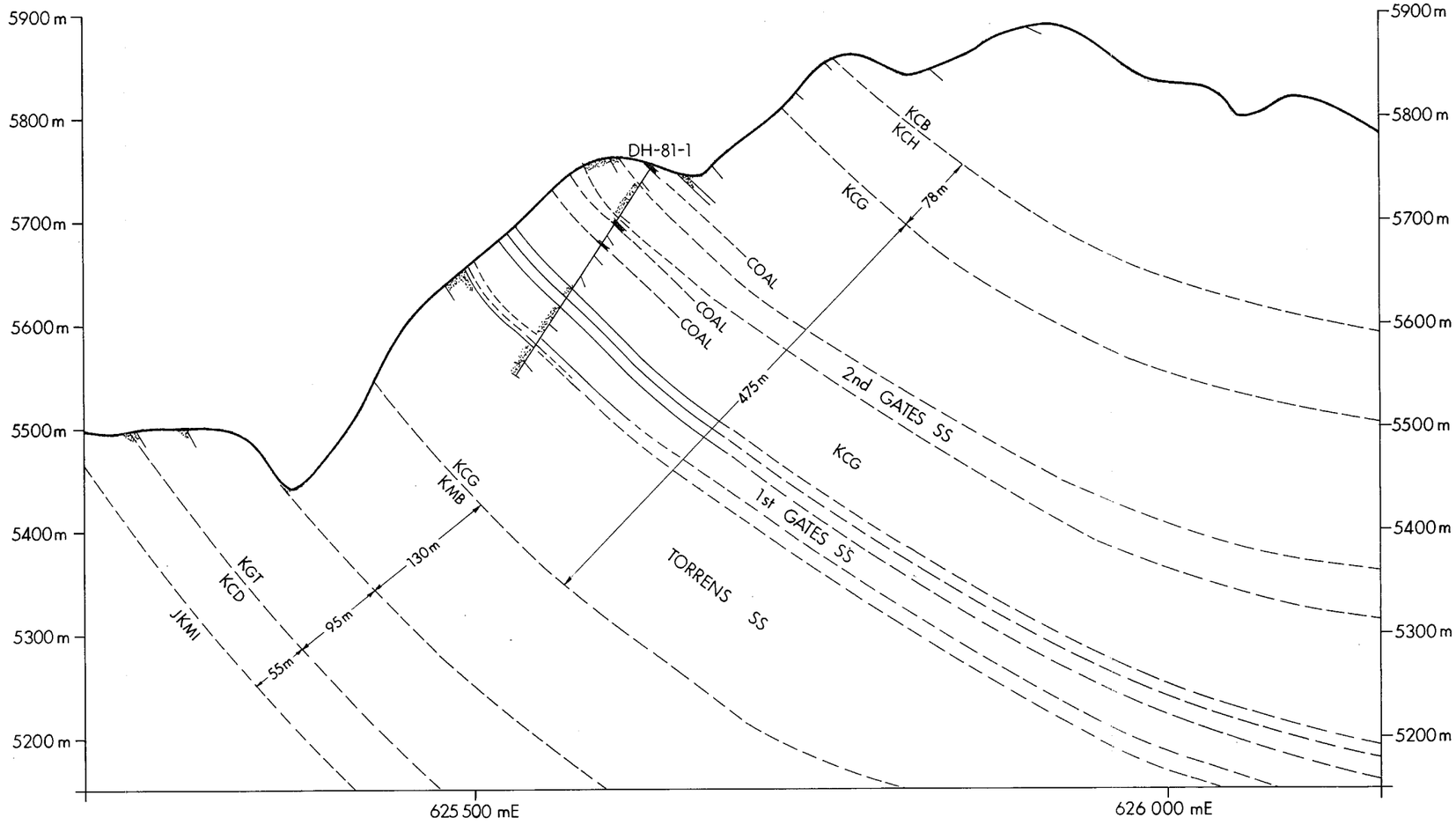
NTS-93I/14

AUTHOR: B. McKINSTRY	SCALE: 1:500	DRAWN BY: R.G.P.
DATE: 86 · 01	REVISED:	DRAWING No: FC6U03
To Accompany		

00718

ENCLOSURE 7

SECTION 048



LEGEND

CRETACEOUS

FORT ST. JOHN GROUP
- KC COMMOTION FORMATION
  - KCB BOULDER CREEK MEMBER
  - KCH HULLCROSS MEMBER
  - KCG GATES MEMBER
- KMB MOOSEBAR FORMATION

BULLHEAD GROUP
- KGT GETHING FORMATION
- KCD CADOMIN FORMATION

JURASSIC-CRETACEOUS
- JKMI MINNES GROUP
- COAL SEAM
- SS UNIT
- ---,— GEOLOGICAL CONTACT (assumed, defined)

NOTE: SECTION ORIENTED SUCH THAT THICKNESS SLIGHTLY EXAGGERATED FROM TRUE THICKNESS.

ENCLOSURE 8

Crows Nest Resources Limited

FIVE CABIN CREEK
N.E. B.C.

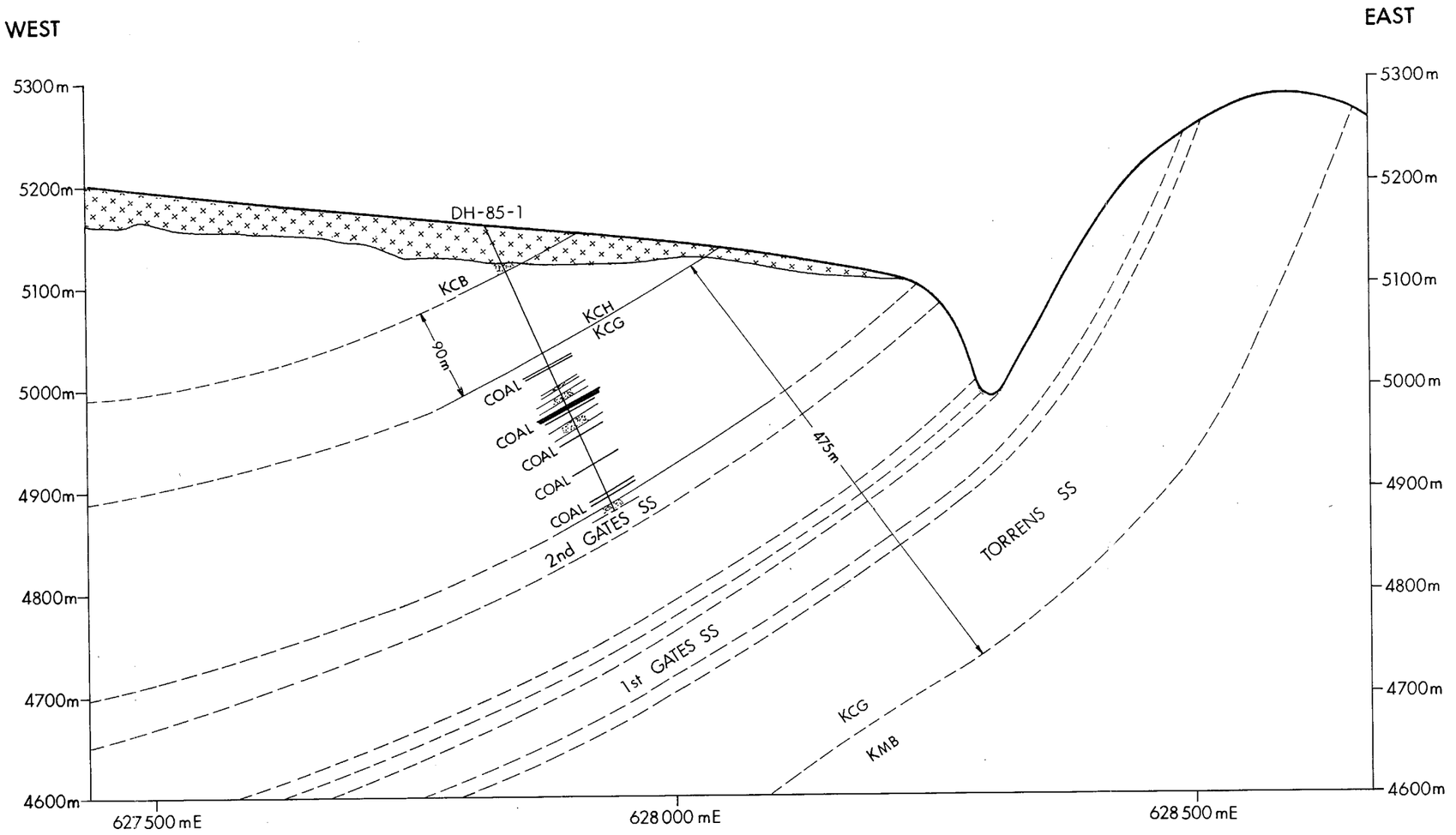
SECTION 048

NTS-93I/14

AUTHOR: B. McKINSTRY	SCALE: 1:5000	DRAWN BY: RGP
DATE: 85-07	REVISED:	DRAWING No: FC2X03
To Accompany		

00718

SECTION 080



LEGEND

CRETACEOUS

FORT ST. JOHN GROUP

- KC COMMOTION FORMATION
  - KCB BOULDER CREEK MEMBER
  - KCH HULLCROSS MEMBER
  - KCG GATES MEMBER
- KMB MOOSEBAR FORMATION

- COAL SEAM
- SS UNIT
- GEOLOGICAL CONTACT (assumed, defined)
- OVERBURDEN

NOTE: SECTION ORIENTED SUCH THAT THICKNESS SLIGHTLY EXAGGERATED FROM TRUE THICKNESS.

ENCLOSURE 8

Crows Nest Resources Limited

FIVE CABIN CREEK
N.E. B.C.

SECTION 080

NTS-93I/14

AUTHOR: B.McKINSTRY	SCALE: 1:5000	ENCLOSURE No:
DATE: 86-01	REVISED:	DRAWING No: FC2X04
To Accompany		

00718

0078

Gamma Ray & Neutron/Neutron

BORHOLE DATA header:

BOREHOLE 85-1
CLIENT Crows Nest Resources Ltd.
AREA Five Cabin
COUNTRY Canada
DATE LOGGED 28/08/85

DEPTH SCALE 1:200

2 OF 3 LOGS

BOREHOLE DATA REFER TO Lithology LOG
OPERATION DATA REFER TO Lithology LOG

EQUIPMENT AND RECORDING DATA

LOG	LOG TAPED	RECORD SPEED	DIRECT or REPLAY	SPEED	T.C. SECS	NORM	CAL COEFF
N/N	Y	9m/m	D	9	1	.87	-
G/R	Y	9m/m	R	9	1	-	1.6

SONDE NO 18 SOURCE NO 196

REMARKS
Please note Neutron/Neutron was logged through drill rods.

Gamma Ray	DEPTH	Neutron/Neutron
0 API 200		0 SNU 600

0 API 200		0 SNU 600
Gamma Ray	DEPTH	Neutron/Neutron

BOREHOLE 85-1
CLIENT Crows Nest Resources Ltd.
AREA Five Cabin
COUNTRY Canada

MY A58452R

00718


SEAM THICKNESS LOG
BPB
SONDE TYPE COAL COMBINATION SONDE
LOG SUITE CALIPER B.R. DENSITY
BOREHOLE
CLIENT
AREA
COUNTRY
DATE LOGGED
DEPTH SCALE
BOREHOLE DATA
OPERATION DATA
EQUIPMENT AND RECORDING DATA
SEAM THICKNESS LOG INTERVALS
REMARKS
B P B SEAM THICKNESS LOG
CALIPER
DEPTH
BED RESOLUTION DENSITY

00718

COAL LITHOLOGY LOG

BOREHOLE	85-1
CLIENT	Crows Nest Resources Ltd.
AREA	Five Cabin
COUNTRY	Canada
DATE LOGGED	28/08/85
DEPTH SCALE	1:200
	1 OF 3 LOGS

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: GAMMA RAY, L.S. DENSITY, CALIPER

BOREHOLE DATA

PERMANENT DATUM	Ground Level	
ELEVATION OF P.D.	Not Available	
MEASUREMENTS FROM	G.L.	G.L.
	BPB	DRILLER
DEPTH REACHED	307.6	308.13
CASING SHOE	42.6	42.6
BIT SIZES	1 HQ TO 42.6	2 NQ TO 307
	3 TO	4 TO
CASING SIZES	1 HQ TO 42.6	2 TO

FLUID DATA

NATURE	Bentonite/Polymer
SG	1.01 gm/cc.
LEVEL	0.0m
VISCOSITY	Not Available
Rm at meas temp	Not Available
BHT	Not Available

OPERATION DATA

FIRST READING	305.0m
LAST READING	0.0m
INTERVAL LOGGED	305.0m
UNIT-TRUCK No	Heli-Unit/V215
ENGINEER	Cavendish
WITNESS	McKinstry

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE #101

LOG	EQUIPMENT SONDE	EQUIPMENT SOURCE	EQUIPMENT CALIBRATOR	TAPING LOG TAPED	TAPING RECORD SPEED	TAPING DIRECT or REPLAY	PANEL SPEED	PANEL TC SECS	PANEL NORM	CAL COEFF	DEPTHS FROM	DEPTHS TO	DEPTHS INTERVAL	SEAM LOG RUN
	101	0592												
GAMMA RAY	SIDEWALL POSITION		242	Y	9m/m	D	9	1	-	1.6	305	00	305	Yes
L.S. DENSITY			0042	Y	9m/m	D	9	.3	7.2	-	304	34	270	Yes
CALIPER			7"..2"	Y	9m/m	D	9	.3	-	-	302	01	301	Yes

COAL QUALITY/SEAM THICKNESS LOG INTERVALS (Refer to relevant log)

							INTERVAL TOTAL
FROM	299.0m	279.0m	226.0m	204.0m	171.0m	157.0m	
TO	283.0m	257.0m	218.0m	190.0m	166.0m	141.0m	
INTERVAL	18.0m	22.0m	8.0m	14.0m	5.0m	16.0m	83.0m

ADDITIONAL SONDES RUN

SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG
18	N/N	1:200	
236	Vert.	CDS	

REFER TO ADDITIONAL HEADINGS

REMARKS

Please note Neutron/Neutron only available through drill rods.

BPB COAL LITHOLOGY LOG

CALIBRATION DATA

JIG No 242 VALUE 46.5 @ 5" DIAM — JIG MARK SHOWN AT ABOVE VALUE - X.3

JIG CAL DATE 02/08/85 — JIG VALUE 3064 SDU @ 2.09 g/cm³ — 8 ins 788 cps

JIG No 0042 — SPAN 6,000 — NORM SDU/CPS = 7.22 — 4 ins 564 cps

BOREHOLE 85-1 AREA Five Cabin

CLIENT Crows Nest Resources Ltd. COUNTRY Canada

COAL LITHOLOGY LOG

MY (1)137483 R

CONTINUOUS VERTICALITY ANALYSIS

CLIENT____ C.N.R.L.

BOREHOLE_ 85-1

AREA_____ FIVE CABIN B.C

COUNTRY___ CANADA

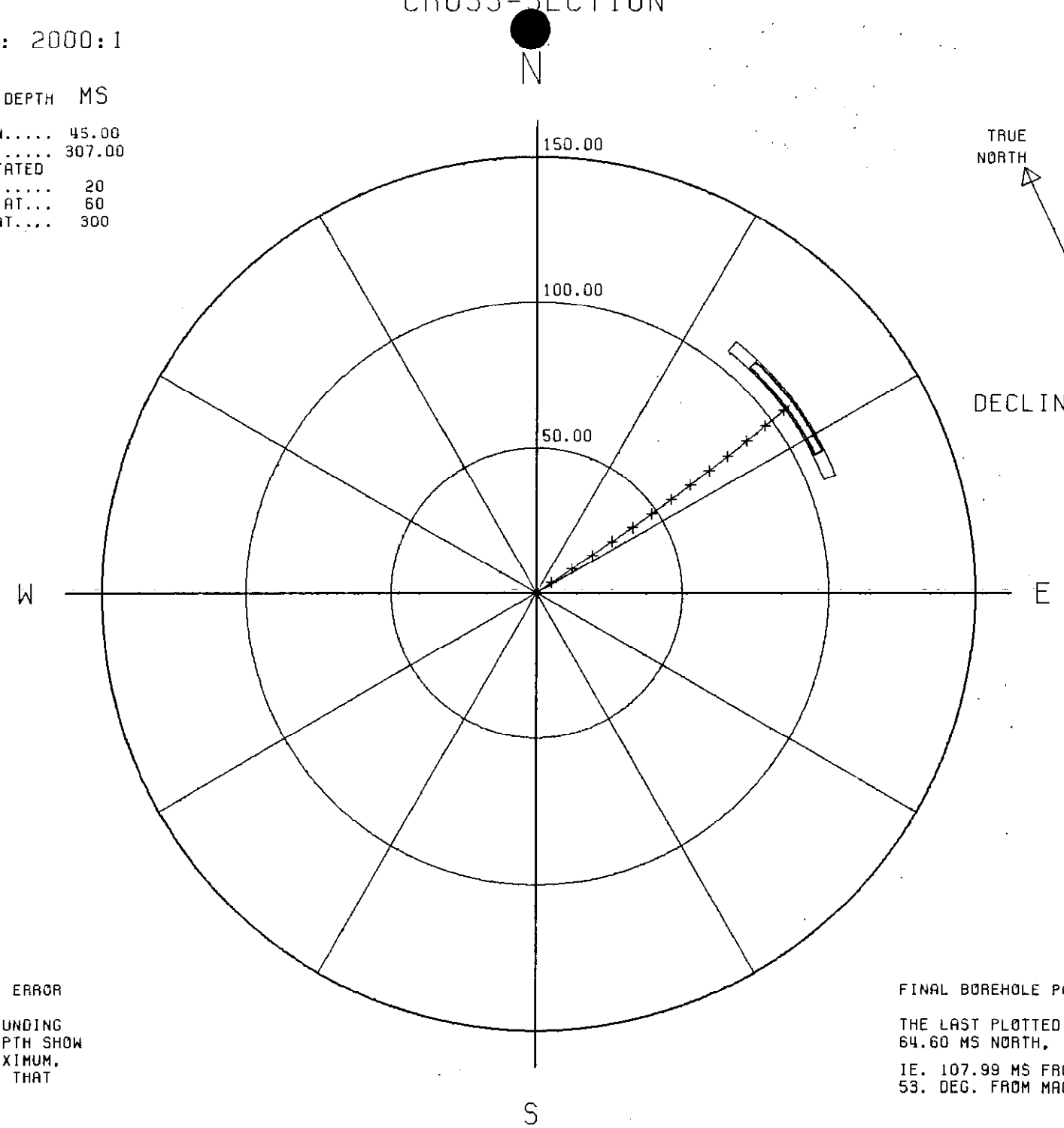
DATE LOGGED.....28-AUG-85
DATE PROCESSED..26-SEP-85
UPPER REFERENCE POINT....CASING SHOE
LOWER REFERENCE POINT....TOTAL DEPTH
ANGLE HOLE (65 DEG.)

CROSS-SECTION

SCALE: 2000:1

ALL FIGURES IN LOG DEPTH MS

TARGET ORIGIN DEPTH.....	45.00
LAST PLOTTED DEPTH.....	307.00
DEPTH MARKERS ANNOTATED IN MULTIPLES OF.....	20
FIRST DEPTH MARKER AT...	60
LAST DEPTH MARKER AT....	300



MAGNETIC NORTH

TRUE NORTH

DECLINATION 25.0 DEG.

BOREHOLE POSITIONAL ERROR

THE TWO BOXES SURROUNDING THE LAST PLOTTED DEPTH SHOW THE TYPICAL, AND MAXIMUM, POSITIONAL ERROR AT THAT DEPTH.

FINAL BOREHOLE POSITION

THE LAST PLOTTED DEPTH IS AT
64.60 MS NORTH, 86.54 MS EAST

IE. 107.99 MS FROM THE ORIGIN.
53. DEG. FROM MAGNETIC NORTH

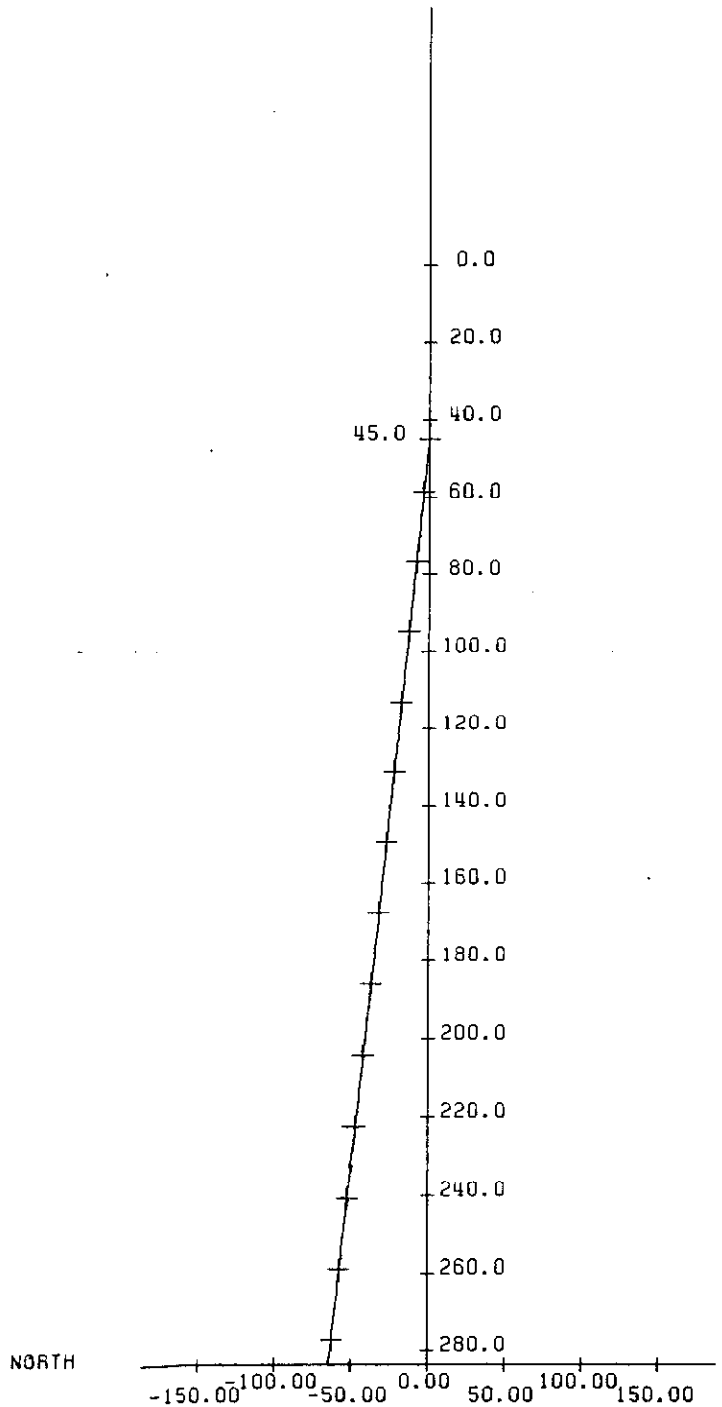
VERTICAL SECTIONS

(TRUE DEPTH VS. DISPLACEMENT)

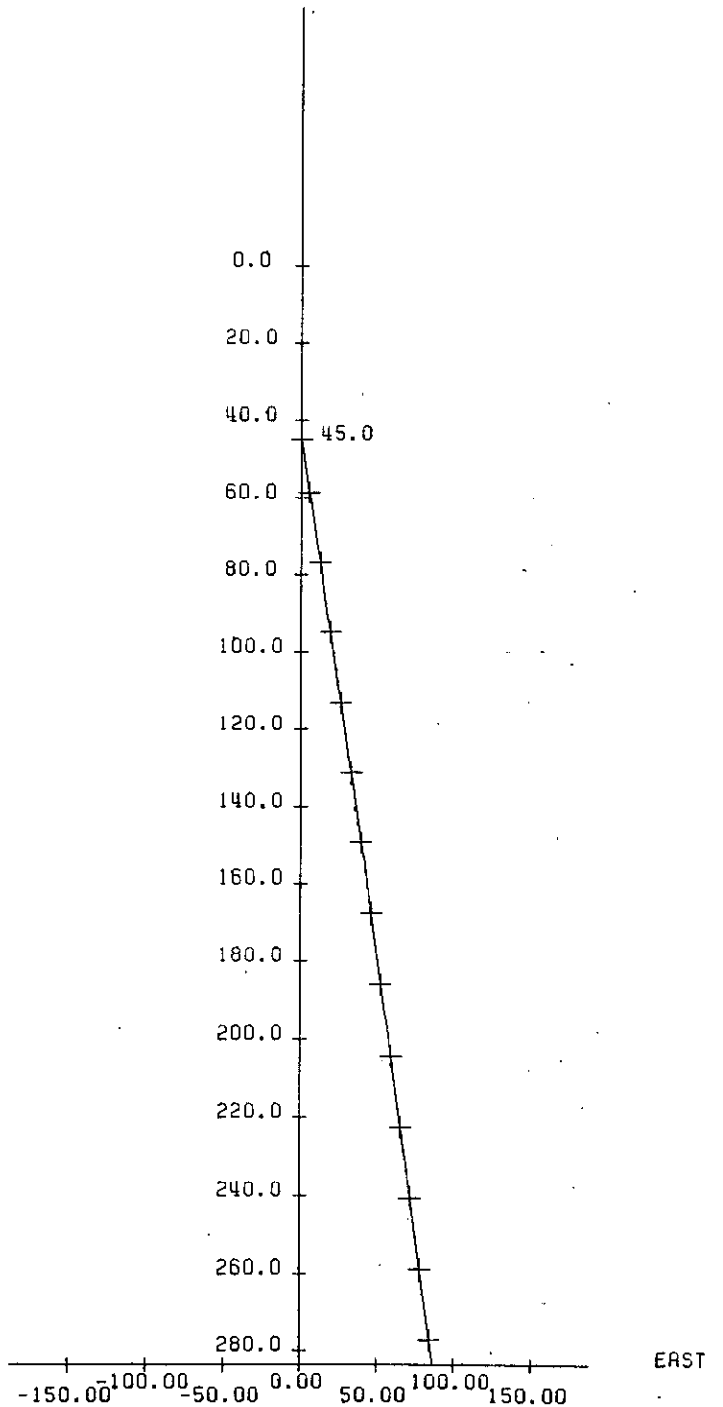
N-S SECTION

VERTICAL SCALE 2000 :1

MARKERS ANNOTATED
AS ABOVE

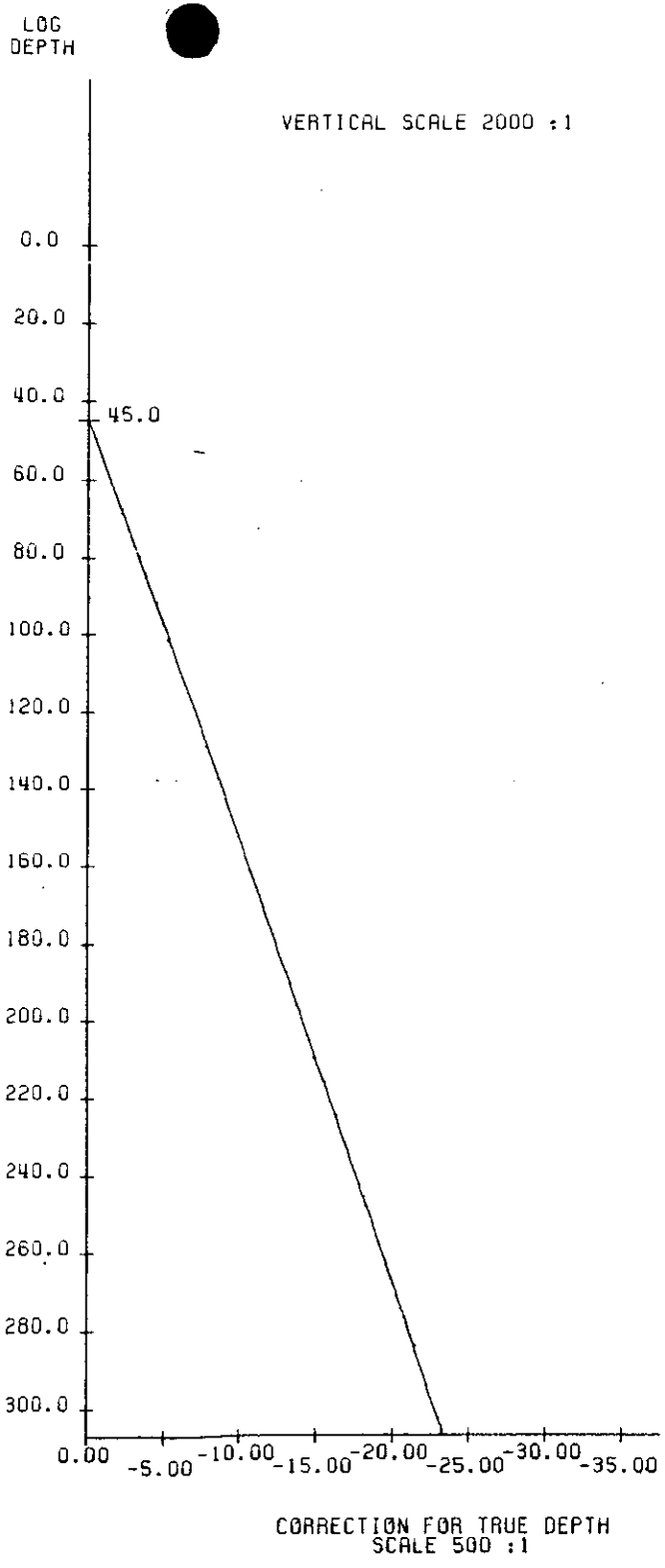


W-E SECTION



HORIZONTAL SCALE 5000 :1

DEPTH CORRECTION ANALYSIS



DEPTHS:		DEPTHS:	
LOG	TRUE	LOG	TRUE
46.00	45.91	186.00	173.13
48.00	47.71	188.00	174.95
50.00	49.52	190.00	176.77
52.00	51.33	192.00	178.60
54.00	53.15	194.00	180.43
56.00	54.96	196.00	182.25
58.00	56.77	198.00	184.08
60.00	58.58	200.00	185.91
62.00	60.39	202.00	187.73
64.00	62.21	204.00	189.56
66.00	64.02	206.00	191.39
68.00	65.83	208.00	193.21
70.00	67.64	210.00	195.04
72.00	69.45	212.00	196.87
74.00	71.26	214.00	198.69
76.00	73.07	216.00	200.52
78.00	74.88	218.00	202.34
80.00	76.70	220.00	204.17
82.00	78.51	222.00	206.00
84.00	80.32	224.00	207.83
86.00	82.13	226.00	209.65
88.00	83.95	228.00	211.48
90.00	85.76	230.00	213.31
92.00	87.58	232.00	215.13
94.00	89.40	234.00	216.96
96.00	91.21	236.00	218.79
98.00	93.03	238.00	220.62
100.00	94.84	240.00	222.44
102.00	96.66	242.00	224.27
104.00	98.48	244.00	226.09
106.00	100.29	246.00	227.92
108.00	102.11	248.00	229.75
110.00	103.93	250.00	231.57
112.00	105.74	252.00	233.40
114.00	107.56	254.00	235.22
116.00	109.38	256.00	237.05
118.00	111.20	258.00	238.87
120.00	113.02	260.00	240.70
122.00	114.83	262.00	242.53
124.00	116.65	264.00	244.36
126.00	118.47	266.00	246.19
128.00	120.29	268.00	248.02
130.00	122.11	270.00	249.84
132.00	123.92	272.00	251.67
134.00	125.74	274.00	253.50
136.00	127.56	276.00	255.33
138.00	129.38	278.00	257.15
140.00	131.20	280.00	258.98
142.00	133.02	282.00	260.81
144.00	134.85	284.00	262.64
146.00	136.67	286.00	264.47
148.00	138.49	288.00	266.30
150.00	140.31	290.00	268.12
152.00	142.13	292.00	269.95
154.00	143.95	294.00	271.78
156.00	145.77	296.00	273.60
158.00	147.60	298.00	275.43
160.00	149.42	300.00	277.25
162.00	151.24	302.00	279.08
164.00	153.06	304.00	280.91
166.00	154.88	306.00	282.73
168.00	156.71	308.00	284.65
170.00	158.53		
172.00	160.35		
174.00	162.17		
176.00	164.00		
178.00	165.82		
180.00	167.65		
182.00	169.47		
184.00	171.30		

BPB VERTICALITY ANALYSIS
INTERPRETATION NOTES

1. All plotted output is automatically scaled to obtain the best visual effect within the physical space available. The maximum scales being 50000:1 (metric) & 48000:1 (imperial), and the minimum 1:1.

2. The analysis is derived by integrating 10 cm./6" sampled data down the borehole. However the listing supplied will contain a maximum of 200 points in multiples of 1,2,5,10,20,25,50, or 100 metres/feet depending upon the total range of the analysis. However the analysis is calculated for the entire range of the borehole, and the final borehole position is included in the listing.

3. Computed verticality may only be fully derived in open sections of the borehole, away from the influence of any magnetic media (as the azimuth calculations are derived from three solid state magnetometers). So the analysis will generally begin at the end of the casing, and all borehole positional information will relate to this depth.

4. Up to ten cross-sections may be requested for any borehole to be displayed at any scale (the default scale is that of the cross-section for the entire hole).

5. Borehole positional error is derived assuming the following parameters:

	TILT(degrees)	AZIMUTH(degrees)
Typical Error	+/- 0.33333	+/- 10.0
Maximum Error	+/- 0.5	+/- 15.0

6. Error analysis may be calculated and plotted from the data listing as follows:

   a) Plot the four coordinates from the error listing (based upon zero azimuth error) on a target plot, origin at the start of the analysis.
   b) Describe arcs of +/- 10 degrees & +/- 15 degrees (centre at the origin) through the inner and outer points respectively.
   c) Connect the respective arcs together with straight lines to give the typical & maximum borehole positional error.

7. Given below is a full description of the parameters displayed on the ensuing listing:

LOG DEPTH	the depth recorded on the field logs for the borehole
TRUE DEPTH	the true vertical depth corresponding to the above depth, corrected from the start of the analysis
HOLE TILT & AZIMUTH	the SAMPLED borehole orientation
AXIAL COORDINATES	the coordinates North & East from the target origin
POLAR COORDINATES	the polar, or radial, coordinates of the borehole
ERROR COORDINATES	the polar coordinates corresponding to the typical and maximum tilt error

N.B. The reference point for ALL bearing angles on this listing is given at the top of each sheet

All co-ordinates with respect to Magnetic North

DEPTHS log	DEPTHS true	BOREHOLE tilt	BOREHOLE AZI	AXIAL CO-ORDS. North	AXIAL CO-ORDS. East	POLAR brng	POLAR radius	POLAR ERROR CO-ORDINATES (maximum & typical) brng	radius	brng	radius	brng	radius	brng	radius
46.00	45.91	24.9	58.	0.23	0.35	56.	0.42	56.	0.43	56.	0.42	56.	0.43	56.	0.42
48.00	47.71	25.3	58.	0.71	1.06	56.	1.28	56.	1.30	56.	1.26	56.	1.30	56.	1.26
50.00	49.52	24.6	58.	1.18	1.77	56.	2.13	56.	2.17	56.	2.09	56.	2.16	56.	2.10
52.00	51.33	25.2	55.	1.65	2.48	56.	2.98	56.	3.03	56.	2.92	56.	3.01	56.	2.94
54.00	53.15	24.5	60.	2.11	3.19	56.	3.83	56.	3.90	56.	3.75	56.	3.87	56.	3.78
56.00	54.96	25.4	56.	2.58	3.89	56.	4.67	56.	4.76	56.	4.58	56.	4.73	56.	4.61
58.00	56.77	24.9	55.	3.05	4.60	56.	5.51	56.	5.62	56.	5.41	56.	5.58	56.	5.45
60.00	58.58	24.7	58.	3.52	5.30	56.	6.36	56.	6.48	56.	6.24	56.	6.44	56.	6.28
62.00	60.39	24.9	58.	4.00	6.00	56.	7.21	56.	7.34	56.	7.08	56.	7.30	56.	7.12
64.00	62.21	24.9	58.	4.48	6.70	56.	8.06	56.	8.21	56.	7.91	56.	8.16	56.	7.96
66.00	64.02	24.9	57.	4.96	7.40	56.	8.91	56.	9.07	56.	8.74	56.	9.02	56.	8.79
68.00	65.83	24.6	55.	5.44	8.10	56.	9.75	56.	9.93	56.	9.57	56.	9.87	56.	9.63
70.00	67.64	25.4	51.	5.92	8.79	56.	10.60	56.	10.80	56.	10.40	56.	10.73	56.	10.47
72.00	69.45	24.6	58.	6.40	9.49	56.	11.45	56.	11.66	56.	11.23	56.	11.59	56.	11.31
74.00	71.26	24.9	57.	6.88	10.19	56.	12.29	56.	12.52	56.	12.06	56.	12.45	56.	12.14
76.00	73.07	25.3	54.	7.37	10.89	56.	13.14	56.	13.39	56.	12.90	56.	13.31	56.	12.98
78.00	74.88	24.9	58.	7.85	11.58	56.	13.99	56.	14.25	56.	13.73	56.	14.16	56.	13.82
80.00	76.70	24.7	57.	8.34	12.27	56.	14.83	56.	15.11	56.	14.56	56.	15.02	56.	14.65
82.00	78.51	25.4	54.	8.82	12.96	56.	15.68	56.	15.97	56.	15.39	56.	15.87	56.	15.48
84.00	80.32	24.8	58.	9.31	13.65	56.	16.52	56.	16.83	56.	16.22	56.	16.73	56.	16.32
86.00	82.13	24.5	58.	9.81	14.34	56.	17.37	56.	17.70	56.	17.05	56.	17.59	56.	17.16
88.00	83.95	24.8	54.	10.27	15.04	56.	18.21	56.	18.55	56.	17.87	56.	18.44	56.	17.99
90.00	85.76	24.8	55.	10.75	15.73	56.	19.05	56.	19.41	56.	18.69	56.	19.29	56.	18.81
92.00	87.58	25.0	54.	11.23	16.42	56.	19.89	56.	20.26	56.	19.52	56.	20.14	56.	19.64
94.00	89.40	24.3	60.	11.69	17.11	56.	20.72	56.	21.11	56.	20.34	56.	20.98	56.	20.47
96.00	91.21	24.4	56.	12.17	17.80	56.	21.56	56.	21.96	56.	21.16	56.	21.83	56.	21.29
98.00	93.03	24.3	57.	12.64	18.49	56.	22.40	56.	22.82	56.	21.98	56.	22.68	56.	22.12
100.00	94.84	25.0	53.	13.12	19.18	56.	23.24	56.	23.67	56.	22.80	56.	23.53	56.	22.95
102.00	96.66	24.4	59.	13.59	19.87	56.	24.07	56.	24.52	56.	23.62	56.	24.37	56.	23.77
104.00	98.48	24.4	58.	14.06	20.56	56.	24.91	56.	25.38	56.	24.44	56.	25.22	56.	24.60
106.00	100.29	24.7	56.	14.53	21.25	56.	25.75	56.	26.23	56.	25.26	56.	26.07	56.	25.43
108.00	102.11	25.2	53.	15.01	21.94	56.	26.58	56.	27.08	56.	26.09	56.	26.92	56.	26.25
110.00	103.93	24.6	57.	15.49	22.63	56.	27.42	56.	27.93	56.	26.91	56.	27.76	56.	27.08
112.00	105.74	24.3	55.	15.96	23.31	56.	28.26	56.	28.78	56.	27.72	56.	28.61	56.	27.90
114.00	107.56	25.0	55.	16.44	24.00	56.	29.09	56.	29.64	56.	28.54	56.	29.45	56.	28.73
116.00	109.38	24.1	57.	16.91	24.69	56.	29.92	56.	30.48	56.	29.36	56.	30.30	56.	29.55
118.00	111.20	24.6	56.	17.39	25.37	56.	30.76	56.	31.33	56.	30.18	56.	31.14	56.	30.37
120.00	113.02	24.3	56.	17.86	26.05	56.	31.59	56.	32.18	56.	30.99	56.	31.98	56.	31.19
122.00	114.83	24.4	57.	18.33	26.74	56.	32.42	56.	33.03	56.	31.81	56.	32.83	56.	32.01
124.00	116.65	24.6	54.	18.81	27.42	56.	33.25	56.	33.88	56.	32.63	56.	33.67	56.	32.84
126.00	118.47	24.6	55.	19.29	28.11	56.	34.09	56.	34.73	56.	33.45	56.	34.51	56.	33.66
128.00	120.29	24.8	55.	19.76	28.79	56.	34.92	56.	35.57	56.	34.26	56.	35.35	56.	34.48
130.00	122.11	24.9	55.	20.24	29.47	56.	35.75	56.	36.42	56.	35.08	56.	36.20	56.	35.30
132.00	123.92	24.6	56.	20.72	30.16	56.	36.59	56.	37.27	56.	35.90	56.	37.05	56.	36.13
134.00	125.74	25.0	53.	21.19	30.83	55.	37.42	55.	38.12	55.	36.71	55.	37.88	55.	36.95
136.00	127.56	24.8	54.	21.67	31.52	55.	38.25	55.	38.96	55.	37.52	55.	38.72	55.	37.76
138.00	129.38	24.0	56.	22.13	32.20	55.	39.07	55.	39.81	55.	38.34	55.	39.56	55.	38.58
140.00	131.20	24.3	57.	22.60	32.88	55.	39.90	55.	40.65	55.	39.15	55.	40.40	55.	39.40
142.00	133.02	24.9	54.	23.08	33.56	55.	40.73	55.	41.50	55.	39.96	55.	41.24	55.	40.22
144.00	134.85	24.2	57.	23.54	34.24	55.	41.55	55.	42.33	55.	40.77	55.	42.07	55.	41.03

All co-ordinates with respect to Magnetic North

DEPTHS		BOREHOLE		AXIAL CO-ORDS.		POLAR		POLAR ERROR CO-ORDINATES (maximum & typical)							
log	true	tilt	AZI	North	East	brng	radius	brng	radius	brng	radius	brng	radius	brng	radius
146.00	136.67	24.8	54.	24.03	34.91	55.	42.38	55.	43.18	55.	41.58	55.	42.91	55.	41.85
148.00	138.49	24.1	54.	24.50	35.59	55.	43.21	55.	44.02	55.	42.39	55.	43.75	55.	42.66
150.00	140.31	24.7	53.	24.99	36.26	55.	44.03	55.	44.86	55.	43.20	55.	44.59	55.	43.48
152.00	142.13	24.1	57.	25.46	36.93	55.	44.86	55.	45.71	55.	44.01	55.	45.42	55.	44.29
154.00	143.95	24.1	55.	25.94	37.60	55.	45.69	55.	46.55	55.	44.82	55.	46.26	55.	45.11
156.00	145.77	24.9	53.	26.43	38.27	55.	46.51	55.	47.39	55.	45.63	55.	47.10	55.	45.92
158.00	147.60	24.8	52.	26.92	38.94	55.	47.33	55.	48.23	55.	46.44	55.	47.93	55.	46.74
160.00	149.42	24.6	51.	27.41	39.60	55.	48.16	55.	49.07	55.	47.25	55.	48.77	55.	47.55
162.00	151.24	24.4	53.	27.90	40.27	55.	48.99	55.	49.91	55.	48.06	55.	49.61	55.	48.37
164.00	153.06	23.9	56.	28.37	40.94	55.	49.81	55.	50.75	55.	48.86	55.	50.44	55.	49.18
166.00	154.88	23.9	54.	28.86	41.60	55.	50.63	55.	51.59	55.	49.67	55.	51.27	55.	49.99
168.00	156.71	24.8	50.	29.36	42.26	55.	51.45	55.	52.43	55.	50.48	55.	52.10	55.	50.80
170.00	158.53	24.4	54.	29.84	42.92	55.	52.28	55.	53.26	55.	51.28	55.	52.94	55.	51.62
172.00	160.35	24.1	55.	30.34	43.58	55.	53.10	55.	54.10	55.	52.09	55.	53.77	55.	52.43
174.00	162.17	24.4	55.	30.83	44.24	55.	53.92	55.	54.94	55.	52.90	55.	54.60	55.	53.24
176.00	164.00	23.9	54.	31.32	44.90	55.	54.74	55.	55.78	55.	53.70	55.	55.43	55.	54.05
178.00	165.82	24.4	51.	31.81	45.55	55.	55.56	55.	56.62	55.	54.51	55.	56.26	55.	54.86
180.00	167.65	23.8	55.	32.30	46.21	55.	56.38	55.	57.45	55.	55.31	55.	57.09	55.	55.66
182.00	169.47	23.8	54.	32.79	46.86	55.	57.19	55.	58.28	55.	56.11	55.	57.92	55.	56.47
184.00	171.30	23.7	54.	33.28	47.51	55.	58.01	55.	59.11	55.	56.90	55.	58.74	55.	57.27
186.00	173.13	24.3	53.	33.77	48.17	55.	58.82	55.	59.94	55.	57.70	55.	59.57	55.	58.08
188.00	174.95	24.0	53.	34.26	48.82	55.	59.64	55.	60.77	55.	58.51	55.	60.40	55.	58.88
190.00	176.77	24.3	52.	34.76	49.47	55.	60.46	55.	61.61	55.	59.31	55.	61.23	55.	59.69
192.00	178.60	23.9	53.	35.26	50.12	55.	61.28	55.	62.44	55.	60.11	55.	62.05	55.	60.50
194.00	180.43	24.5	51.	35.75	50.77	55.	62.09	55.	63.27	55.	60.91	55.	62.88	55.	61.30
196.00	182.25	24.1	52.	36.24	51.42	55.	62.90	55.	64.10	55.	61.70	55.	63.70	55.	62.10
198.00	184.08	24.1	54.	36.73	52.06	55.	63.72	55.	64.93	55.	62.50	55.	64.52	55.	62.91
200.00	185.91	23.8	52.	37.22	52.71	55.	64.53	55.	65.76	55.	63.30	55.	65.35	55.	63.71
202.00	187.73	23.9	54.	37.72	53.36	55.	65.34	55.	66.59	55.	64.10	55.	66.17	55.	64.51
204.00	189.56	24.1	54.	38.21	54.01	55.	66.16	55.	67.42	55.	64.90	55.	67.00	55.	65.32
206.00	191.39	24.6	51.	38.71	54.65	55.	66.97	55.	68.25	55.	65.70	55.	67.82	55.	66.12
208.00	193.21	24.1	51.	39.21	55.30	55.	67.79	55.	69.08	55.	66.49	55.	68.65	55.	66.92
210.00	195.04	24.4	50.	39.70	55.94	55.	68.60	55.	69.90	55.	67.29	55.	69.47	55.	67.72
212.00	196.87	24.0	52.	40.19	56.59	55.	69.41	55.	70.73	55.	68.08	55.	70.29	55.	68.52
214.00	198.69	24.0	51.	40.69	57.23	55.	70.22	55.	71.56	55.	68.88	55.	71.12	55.	69.33
216.00	200.52	24.3	52.	41.20	57.88	55.	71.04	55.	72.40	55.	69.68	55.	71.94	55.	70.14
218.00	202.34	24.5	51.	41.70	58.52	55.	71.86	55.	73.23	55.	70.48	55.	72.77	55.	70.94
220.00	204.17	23.7	53.	42.19	59.17	55.	72.67	55.	74.06	55.	71.28	55.	73.59	55.	71.74
222.00	206.00	23.5	55.	42.69	59.81	54.	73.48	54.	74.88	54.	72.07	54.	74.42	54.	72.54
224.00	207.83	23.8	52.	43.19	60.45	54.	74.29	54.	75.71	54.	72.87	54.	75.24	54.	73.35
226.00	209.65	23.8	51.	43.69	61.09	54.	75.11	54.	76.54	54.	73.67	54.	76.06	54.	74.15
228.00	211.48	23.7	52.	44.19	61.73	54.	75.92	54.	77.37	54.	74.47	54.	76.89	54.	74.95
230.00	213.31	23.4	52.	44.70	62.37	54.	76.73	54.	78.20	54.	75.26	54.	77.71	54.	75.75
232.00	215.13	23.7	54.	45.19	63.01	54.	77.54	54.	79.02	54.	76.06	54.	78.53	54.	76.55
234.00	216.96	23.8	54.	45.70	63.65	54.	78.35	54.	79.85	54.	76.85	54.	79.35	54.	77.35
236.00	218.79	24.0	53.	46.20	64.28	54.	79.17	54.	80.68	54.	77.65	54.	80.17	54.	78.15
238.00	220.62	23.9	52.	46.70	64.92	54.	79.98	54.	81.50	54.	78.44	54.	81.00	54.	78.95
240.00	222.44	24.2	52.	47.21	65.56	54.	80.79	54.	82.34	54.	79.24	54.	81.82	54.	79.76
242.00	224.27	23.9	51.	47.71	66.20	54.	81.60	54.	83.17	54.	80.04	54.	82.65	54.	80.56
244.00	226.09	24.5	50.	48.23	66.84	54.	82.42	54.	84.00	54.	80.84	54.	83.47	54.	81.37

All co-ordinates with respect to Magnetic North

DEPTHS log	DEPTHS true	BOREHOLE tilt	BOREHOLE AZI	AXIAL CO-ORDS. North	AXIAL CO-ORDS. East	POLAR brng	POLAR radius	POLAR ERROR CO-ORDINATES (maximum & typical) brng	radius	brng	radius	brng	radius	brng	radius
246.00	227.92	24.3	52.	48.74	67.48	54.	83.24	54.	84.83	54.	81.64	54.	84.30	54.	82.17
248.00	229.75	23.8	53.	49.25	68.12	54.	84.05	54.	85.66	54.	82.44	54.	85.13	54.	82.98
250.00	231.57	24.3	52.	49.76	68.75	54.	84.87	54.	86.49	54.	83.24	54.	85.95	54.	83.78
252.00	233.40	24.1	51.	50.27	69.39	54.	85.68	54.	87.32	54.	84.04	54.	86.78	54.	84.59
254.00	235.22	24.5	51.	50.79	70.02	54.	86.50	54.	88.15	54.	84.84	54.	87.60	54.	85.39
256.00	237.05	24.3	53.	51.31	70.65	54.	87.32	54.	88.99	54.	85.64	54.	88.43	54.	86.20
258.00	238.87	24.2	48.	51.83	71.28	54.	88.13	54.	89.82	54.	86.44	54.	89.25	54.	87.00
260.00	240.70	24.0	52.	52.34	71.91	54.	88.94	54.	90.64	54.	87.23	54.	90.08	54.	87.80
262.00	242.53	24.4	49.	52.85	72.54	54.	89.75	54.	91.47	54.	88.02	54.	90.89	54.	88.60
264.00	244.36	23.7	52.	53.36	73.17	54.	90.56	54.	92.29	54.	88.81	54.	91.71	54.	89.40
266.00	246.19	23.8	51.	53.88	73.79	54.	91.37	54.	93.12	54.	89.61	54.	92.53	54.	90.19
268.00	248.02	23.9	50.	54.39	74.42	54.	92.17	54.	93.94	54.	90.40	54.	93.35	54.	90.99
270.00	249.84	23.9	51.	54.90	75.04	54.	92.98	54.	94.77	54.	91.19	54.	94.17	54.	91.79
272.00	251.67	24.1	52.	55.42	75.67	54.	93.80	54.	95.59	54.	91.99	54.	95.00	54.	92.59
274.00	253.50	24.2	49.	55.94	76.29	54.	94.61	54.	96.42	54.	92.79	54.	95.82	54.	93.39
276.00	255.33	23.9	50.	56.46	76.92	54.	95.41	54.	97.24	54.	93.58	54.	96.64	54.	94.19
278.00	257.15	23.7	50.	56.98	77.54	54.	96.22	54.	98.07	54.	94.37	54.	97.46	54.	94.99
280.00	258.98	24.1	49.	57.50	78.16	54.	97.03	54.	98.90	54.	95.16	54.	98.28	54.	95.79
282.00	260.81	23.5	54.	58.02	78.78	54.	97.84	54.	99.72	54.	95.95	54.	99.09	54.	96.58
284.00	262.64	23.7	50.	58.54	79.40	54.	98.65	54.	100.54	54.	96.75	54.	99.91	54.	97.38
286.00	264.47	23.7	51.	59.05	80.03	54.	99.45	54.	101.36	54.	97.54	54.	100.73	54.	98.18
288.00	266.30	23.7	52.	59.58	80.65	54.	100.27	54.	102.19	54.	98.33	54.	101.55	54.	98.98
290.00	268.12	23.8	51.	60.11	81.27	54.	101.08	54.	103.02	54.	99.13	54.	102.38	54.	99.78
292.00	269.95	23.7	51.	60.63	81.89	53.	101.89	53.	103.85	53.	99.93	53.	103.20	53.	100.58
294.00	271.78	24.2	49.	61.15	82.51	53.	102.70	53.	104.68	53.	100.72	53.	104.02	53.	101.38
296.00	273.60	23.9	50.	61.68	83.14	53.	103.51	53.	105.50	53.	101.52	53.	104.84	53.	102.18
298.00	275.43	24.5	48.	62.21	83.75	53.	104.33	53.	106.33	53.	102.32	53.	105.67	53.	102.99
300.00	277.25	24.0	52.	62.75	84.38	53.	105.15	53.	107.17	53.	103.12	53.	106.50	53.	103.80
302.00	279.08	24.6	47.	63.29	84.99	53.	105.96	53.	108.00	53.	103.92	53.	107.32	53.	104.60
304.00	280.91	24.0	50.	63.81	85.61	53.	106.77	53.	108.83	53.	104.71	53.	108.14	53.	105.40
306.00	282.73	23.5	52.	64.33	86.23	53.	107.58	53.	109.65	53.	105.51	53.	108.96	53.	106.20
307.00	283.65	24.3	48.	64.60	86.54	53.	107.99	53.	110.07	53.	105.91	53.	109.38	53.	106.60

Report on the Sealing of drillholes

Inspection District _____ Date of Report 29/08/85

Company CROWS NEST RESOURCES LTD. Land District _____

Map Number _____ Licence Number _____

1. Number of Drillhole. 85-1 FIVE CABIN
2. Surface elevation. 1570 m
3. Type (Vertical, diamond, rotary, size etc. ANGLE (60°E), DIAMOND, NQ
4. Drilled by: Name of Contractor D.W. COATES LTD.
   Name of Exploration Company CROWSNEST RESOURCES
5. Date of completion. 29/08/85
6. Date of Sealing 29/08/85
7. Sealed by: Name of Contractor D.W. COATES LTD
   Name of Exploration Company CROWS NEST RESOURCES
8. (a) Has any casing, drill pipe, drill bits, core barrel, etc. been left in the hole? YES
   (b) If so, give details and location. 14 HQ RODS, 1 HQ TO HW ADAPTER, 1 CASING SHOE.
9. (a) Was the drillhole sealed in the manner outlined in the Chief Inspectors Instructions? YES
   (b) If No, give reasons and details of variation. _____
10. (a) Was the sealing effective? YES
    (b) Details of any tests carried out. _____
11. I certify that the above drillhole has been effectively sealed in accordance with the instructions of the Chief Inspector of Mines.

Signature [signature]
Designation D. W. COATES LTD.
Date 29/08/85
Countersignature [signature]
Designation CROWS NEST RESOURCES
Date 29/08/85

FIVE CABIN

DRILL HOLE # FC85D-1

12/16/85

LOG DATE 85/08/30
EXAMINED BY B. MCKINSTRY

TOP	BASE	THICKNESS	MAJOR	SEAM	SAMPLE#	REC %	MINOR LITHOLOGY	REMARKS	C.B.A.	DEPTH
								CARBONACEOUS, MASSIVE. GROUND CORE @ TOP.		
254.40	255.60	1.20	COAL	8	8	84.20		DULL WITH OCC BRIGHT CLEATED BANDS. THIN MDST PARTINGS NEAR BASE.		
255.60	259.33	3.73	MDST					AS AT 249.64M		
259.33	259.88	.55	COAL					NO SAMPLE. LOST CORE		
259.88	274.30	14.42	MDST				COAL	DARK GY-BLK, MASSIVE, CARBONACEOUS MDST WITH PLANT DEBRIS.	80	265.10
								NUMEROUS INTERBANDS OF BRIGHT CLEATED COAL BANDS & STRINGERS UP TO .1M	90	268.40
274.30	276.60	2.30	SLST					MEDIUM GY, WEAKLY LAMINATED WITH LIGHT GY SS WISPS. SOME BURROWING.		
276.60	277.40	.80	MDST					DARK GY-BLK. VERY THIN COAL STRINGERS. CARBONACEOUS	83	276.80
277.40	277.82	.42	COAL			23.80		NO SAMPLE TAKEN. BRIGHT CLEATED RUBBLE.		
277.82	280.52	2.70	SLST					AS AT 274.3M	67	278.10
280.52	284.80	4.28	MDST					DARK GY-BLK, CARBONACEOUS WITH COALY PLANT FGMTS. MASSIVE.	81	281.00
284.80	285.52	.72	COAL	7U	9	100.00		DULL & BRIGHT, CLEATED WITH BRIGHT BANDS.		

FIVE CABIN

12/16/85

DRILL HOLE # FC85D-1

LOG DATE 85/08/30
EXAMINED BY B. MCKINSTRY

TOP	BASE	THICKNESS	MAJOR	SEAM	SAMPLE#	REC %	MINOR LITHOLOGY	REMARKS	C.B.A.	DEPTH
285.52	285.77	.25	MDST	7U		100.00				
285.77	286.42	.65	COAL	7U		100.00	MDST	DULL & BRIGHT WITH MDST @ BASE. NO SAMPLE TAKEN.		
286.42	287.02	.60	SLST					AS AT 274.3M		
287.02	287.60	.58	MDST					AS AT 280.52M		
287.60	288.80	1.20	COAL	7L	10	64.20		DULL SLICKED RUBBLE		
288.80	289.72	.92	MDST					AS AT 280.52M.		
289.72	290.44	.72	COAL	7L				LOST CORE: NO SAMPLE POSSIBLE		
290.44	292.00	1.56	MDST					AS AT 280.52M		
292.00	293.04	1.04	SLST					STRONGLY REWORKED @ TOP BUT WEAKLY LAMINATED @ BASE. MEDIUM GY.		
293.04	296.59	3.55	MDST					DARK GY-BLK AS AT 280.52M	70	294.80
296.59	296.96	.37	COAL			35.10		BRIGHT, SOLID		
296.96	303.58	6.62	SS					FG & COALY @ TOP GRADING TO MG	82	298.80

FIVE CABIN

12/16/85

DRILL HOLE # FC85D-1

LOG DATE 85/08/30
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TOP	BASE	THICKNESS	MAJOR	SEAM	SAMPLE#	REC %	MINOR LITHOLOGY	REMARKS	C.B.A.	DEPTH
								& THEN RETURNING TO FG @ BASE. EQUIGRANULAR SALT & PEPPER. WEAKLY LAMINATED & X-BDD.		
303.58	306.19	2.61	CONG					VERY CG WITH MULTICOLOURED PEBBLES. DISPERSED FRAMEWORK. POLYMICTIC.	82	304.60
								ROUND TO SUB-ROUND CLASTS. HOLE CEMENTED WITH CASING LEFT IN.	79	305.90

FIVE CABIN

12/16/85

DRILL HOLE # FC85D-1

LOG DATE 85/08/30
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TOP	BASE	THICKNESS	MAJOR	SEAM	SAMPLE#	REC %	MINOR LITHOLOGY	REMARKS	C.B.A.	DEPTH
.00	41.20	41.20	OB					OVERBURDEN. SS RUBBLE. VERY DIFFICULT TO PENETRATE.		
								INITIAL HOLE (FC85D-1A) RELOCATED DUE TO SEVERE OB PROBLEMS AFTER 44.8M		
41.20	48.85	7.65	SS				SLST	THINLY BDD TO VY THIN LAMINATIONS OF LIGHT GY SS & DARK GY SLST.	85	44.70
								IRREGULAR PATCHES OF DARK GY-BLK SOFT VY WEATHERED SS MUCK.	56	46.50
								X-BDD & RIPPLE LAMINATIONS IN FG SS. BASE OF BOULDER CREEK MEMBER.		
48.85	62.00	11.15	SLST				SS	MUCH MORE SILTY WITH OCCASIONAL TO FREQUENT LIGHT GY SS LAMINATIONS.	80	51.00
								SOME PATCHES OF STRONGLY WEATHERED ROCK. LAMINAR BDDG WITH SLST RIPUPS	73	54.00
									80	57.50
									80	60.00
62.00	62.10	.10	CLAY					PALE GREEN ALMOST ASBESTOS-LIKE MATERIAL. POSSIBLE BENTONITE ZONE.		
62.10	69.40	7.30	SLST				SS	AS AT 48.85M	88	63.00
									81	66.00
									82	67.40
69.40	69.58	.18	CLAY					PALE GREEN-GY. SIMILIAR TO	85	69.40

FIVE CABIN

DRILL HOLE # FC85D-1

12/16/85

LOG DATE 85/08/30
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TOP	BASE	THICKNESS	MAJOR	SEAM	SAMPLE#	REC %	MINOR LITHOLOGY	REMARKS	C.B.A.	DEPTH
								62.0M		
69.58	79.30	9.72	SLST				SS	OCC PYRITE BLEBS IN SLST MATRIX. OTHERWISE, VERY SIMILIAR TO 48.85M	85	72.40
									84	78.50
79.30	79.52	.22	CLAY					AS AT 62.M		
79.52	122.80	43.28	SLST				SS	AS AT 48.85M BUT NOW GOOD STICK TO SEMI-STICK CORE. LAMINAR TO X-BDD.	85	83.30
								SLUMP FEATURES, BURROWING, & DISRUPTED BDDG FROM 96.32-97.22M.	84	84.00
								LAMINAR BDDG GIVES ROCK A DARK-LIGHT GY STRIPED APPEARANCE. MONOTONOUS.	85	85.60
									83	89.10
									83	90.10
									76	91.60
									86	92.60
									82	94.00
									86	95.60
									82	97.30
									87	99.30

FIVE CABIN

12/16/85

DRILL HOLE # FC85D-1

LOG DATE 85/08/30
EXAMINED BY B. MCKINSTRY

TOP	BASE	THICKNESS	MAJOR	SEAM	SAMPLE#	REC %	MINOR LITHOLOGY	REMARKS	C.B.A.	DEPTH
									84	100.60
									83	102.40
									83	105.40
									86	106.40
									84	107.80
									83	109.00
									78	110.00
									82	112.50
									83	114.30
									84	115.70
									84	117.50
									85	118.80
									86	120.50
									86	121.70
122.80	123.02	.22	CLAY				PALE GY-GRN. AS AT 69.4.			

FIVE CABIN

12/16/85

DRILL HOLE # FC85D-1

LOG DATE 85/08/30
EXAMINED BY B. MCKINSTRY

TOP	BASE	THICKNESS	MAJOR	SEAM	SAMPLE#	REC %	MINOR LITHOLOGY	REMARKS	C.B.A.	DEPTH
								POSSIBLY BENTONITE		
123.02	133.65	10.63	SLST				SS	AS AT 79.52M	88	123.20
									84	124.50
									82	126.10
									82	127.30
									84	128.70
									86	130.30
									84	132.40
133.65	134.00	.35	CONG					BASE OF HULCROSS MEMBER. CG PEBBLE CONG. CHANNEL LAG DEPOSIT. POLYMICTIC. CONTACTS ABOVE & BELOW VERY SHARP. DARK-LIGHT GY PEBBLES.		
134.00	135.71	1.71	MDST					NUMEROUS PY BLEBS & PODS. DARK GY, POORLY BDD. BDDG STRONGLY REWORKED.	87	135.30
135.71	137.52	1.81	MDST					CARBONACEOUS WITH COALY PLANT FGMTS. DARK GY. WEAKLY BDD.	76	137.00
137.52	138.23	.71	SLST				MDST	LIGHT-MEDIUM GY WITH SANDY & COALY BANDS. SOME SCOURED BDDG.		
138.23	140.26	2.03	MDST					CARBONACEOUS WITH COALY PLANT	83	138.60

FIVE CABIN

DRILL HOLE # FC85D-1

12/16/85

LOG DATE 85/08/30
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TOP	BASE	THICKNESS	MAJOR	SEAM	SAMPLE#	REC %	MINOR LITHOLOGY	REMARKS	C.B.A.	DEPTH
								FGMTS. DARK GY. NO PYRITE. WEAKLY BDD.	88	139.80
140.26	141.02	.76	SLST					BDDG IS MODERATELY WELL DEVELOPED.		
141.02	145.48	4.46	MDST					DARK GY-BLK. VERY CARBONACEOUS. BDDG IS INDISTINCT.	82	142.00
								COALY TO VERY COALY @ BASE.	83	142.80
145.48	146.57	1.09	COAL	12U	1	87.10		SEMI-STICK. POLISHED & SLICKED. FLAKEY TO GRANULAR HABIT.		
146.57	147.30	.73	MDST	12U		100.00		COALY & CARBONACEOUS. CALCITE-ANNEALED FRACTURE @ 148.43M. MASSIVE, DARK GY		
147.30	148.08	.78	COAL	12U	2	67.90		SHALEY @ TOP WITH .06M MDST BAND .04M FROM TOP. COAL IS FLAKEY & SLICKED		
148.08	148.44	.36	MDST					MEDIUM GY WITH NUMEROUS COALY PLANT ROOTLETS ALONG BDDG PLANES.		
148.44	148.84	.40	SLST				SS	INTERBDD LIGHT GY SS & DARK-MEDIUM GY SLST. SIMILIAR TO 83.68M. SOME COALY FRACTURES ALONG BDDG.		
148.84	149.92	1.08	MDST				SS	OCC REWORKED LIGHT GY SS BANDS IN DARK GY FEATURELESS MDST. CARBONACEOUS		
149.92	150.98	1.06	COAL	12L	3	28.30		BRIGHT, CLEATED COAL RUBBLE.	81	150.40

FIVE CABIN

12/16/85

DRILL HOLE # FC85D-1

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TOP	BASE	THICKNESS	MAJOR	SEAM	SAMPLE#	REC %	MINOR LITHOLOGY	REMARKS	C.B.A.	DEPTH
								VERY CLEAN THIN SEAM.		
150.98	153.44	2.46	MDST					MEDIUM GY,MASSIVE & FEATURELESS WITH VY THIN DISCONTINUOUS COALY PLANT MATS		
153.44	156.87	3.43	MDST				COAL	INTERBDD DARK GY-DARK BROWN, MASSIVE MDST & THIN COAL BANDS & LENSES. COAL IS BRIGHT & GRANULAR. VERY COALY @ BASE WITH .05-.15M THICK COAL BANDS OVER LAST .45M OF UNIT.		
156.87	158.60	1.73	SLST					REWORKED & BURROWED BDDG. LIGHT & DARK GY. WEAKLY LAMINATED. OCC COAL BAND & STRINGERS. .02M COAL BAND @ 159.7M		
158.60	160.15	1.55	SS					MG-FG LIGHT GY TO SALT & PEPPER. EQUIGRANULAR. WEAKLY LAMINATED. COALY PLANT DEBRIS @ BASE.		
160.15	160.95	.80	MDST					LAMINATED, COALY & FRACTURED.	84	160.30
160.95	161.45	.50	SS					FG-MG, SALT & PEPPER. SOME MDST RIP-UPS SUSPENDED IN MATRIX		
161.45	161.85	.40	SLST				MDST	INTERLAMINATED THIN DARK GY-BLK COALY MDST LENSES IN DARK-MEDIUM GY SLST	87	161.70
161.85	162.35	.50	MDST					DARK BRN, COALY WITH PLANT FGMTS.		

FIVE CABIN

DRILL HOLE # FC85D-1

12/16/85

LOG DATE 85/08/30
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TOP	BASE	THICKNESS	MAJOR	SEAM	SAMPLE#	REC %	MINOR LITHOLOGY	REMARKS	C.B.A.	DEPTH
162.35	165.25	2.90	SLST					LIGHT-DARK GY. STRONGLY REWORKED BDDG & BURROWS. CARBONACEOUS. ALMOST A MDST IN APPEARANCE.	73	163.60
165.25	167.60	2.35	MDST				SS	INTERBDD MG-FG SALT & PEPPER SS & DARK GY-BRN FEATURELESS MDST. SS BANDS CAN BE UP TO .25M WIDE.	83	167.40
167.60	168.44	.84	MDST					DARK GY-BLK, CARBONACEOUS. MASSIVE. COALY PLANT FGMTS. LOST CORE: COAL SEAM FROM 168.42-169.2M		
168.44	169.20	.76	COAL	11				LOST CORE: NO SAMPLE POSSIBLE		
169.20	170.33	1.13	SLST				MDST	AS AT 161.45M		
170.33	172.45	2.12	SS					FG-MG GRADING FROM FG @ TOP TO MG @ BASE. COALY PLANT ROOTLETS @ BASE. SALT & PEPPER. EQUIGRANULAR. VERY WEAKLY LAMINATED & X-BDD.		
172.45	179.28	6.83	MDST					AS AT 167.6M	82	173.00
179.28	180.68	1.40	SS				MDST	INTERBDD DARK GY CARBONACEOUS MDST AND SALT & PEPPER FG SS BANDS.		

FIVE CABIN

DRILL HOLE # FC85D-1

12/16/85

LOG DATE 85/08/30
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TOP	BASE	THICKNESS	MAJOR	SEAM	SAMPLE#	REC %	MINOR LITHOLOGY	REMARKS	C.B.A.	DEPTH
179.28	180.68	1.40	SS				MDST	SOME SCOURING ON BDDG SURFACES.		
180.68	184.13	3.45	SS					SALT & PEPPER, FG. WEAKLY LAMINATED WITH VERY THIN CARBONACEOUS SLST WISPS. WHT CC FRACTURES PERPENDICULAR TO BDDG. GRAIN SIZE GRADES TO MG @ BASE	76	181.60
184.13	185.33	1.20	SS				MDST	AS AT 179.28M	77	184.80
185.33	189.79	4.46	MDST					AS AT 167.6M. STRONGLY REWORKED & BURROWED @ BASE WITH BLEBS OF LIGHT GY SS DEFINING BURROWING.	83	186.60
189.79	191.54	1.75	SS					VERY STRONGLY REWORKED & BURROWED. FG, SALT & PEPPER STREAKED WITH MDST WISPS. BDDG TOTALLY DISRUPTED. LENS-SHAPED PATCHES OF SS IN MDST MATRIX @ BASE. PATCHES OF PYRITE @ BASE.		
191.54	191.72	.18	MDST					AS AT 167.6M		
191.72	195.72	4.00	COAL	10U	4	82.50		BRIGHT & DULL WITH GOOD CLEAT. STICK:SEMI-STICK. RUBBLEY @ BASE.		
195.72	197.12	1.40	MDST		5	100.00		VERY COALY. DARK GY-BLK. COAL BANDS & LENSES.		
197.12	198.92	1.80	COAL	10L	6	91.70		DULL & BRIGHT. RUBBLE CORE.		

FIVE CABIN

DRILL HOLE # FC85D-1

12/16/85

LOG DATE 85/08/30
EXAMINED BY B. MCKINSTRY

TOP	BASE	THICKNESS	MAJOR	SEAM	SAMPLE#	REC %	MINOR LITHOLOGY	REMARKS	C.B.A.	DEPTH
								PLANT FGMTS.		
236.60	237.27	.67	SLST					SANDY, LIGHT-MEDIUM GY, MODERATELY WELL BDD. LAMINAR & X-BDDG.		
237.27	238.87	1.60	MDST					AS AT 232.M		
238.87	240.12	1.25	SLST					AS AT 236.6M	73	239.20
240.12	241.66	1.54	MDST					AS AT 232.OM		
241.66	242.19	.53	SS					MG-FG, LIGHT GY, SALT & PEPPER. LAMINAR-XBDD. SILTY BDDG @ BASE	82	241.70
242.19	245.87	3.68	MDST					VY SILTY WITH OCC LIGHT GY REWORKED SS PODS & SILTY LENSES @ TOP.	83	243.10
									84	244.70
245.87	247.60	1.73	SS					MG, SALT & PEPPER GRADING TO FG @ BASE. .2M BAND OF SLST IN MIDDLE. POORLY BDD IN MG SS BUT LAMINAR BDDG IN FG SS.	78	246.50
247.60	248.74	1.14	MDST					DARK GY-BLK, CARBONACEOUS, COALY.	83	248.20
248.74	249.64	.90	SS					AS AT 245.87M	85	249.50
249.64	254.40	4.76	MDST					DARK GY-BLK, COALY,		

FIVE CABIN

12/16/85

DRILL HOLE # FC85D-1

LOG DATE 85/08/30
EXAMINED BY B. MCKINSTRY

TOP	BASE	THICKNESS	MAJOR	SEAM	SAMPLE#	REC %	MINOR LITHOLOGY	REMARKS	C.B.A.	DEPTH
198.92	200.91	1.99	MDST			100.00		AS AT 195.72M WITH COAL BANDS UP TO .14M WIDE.		
200.91	201.25	.34	COAL		?	91.90		BRIGHT CLEAT BANDS & DULL DENSE INTERBANDS.		
201.25	202.13	.88	MDST					THIN COAL BANDS IN DARK GY-BLK, CARBONACEOUS, MASSIVE MDST.		
202.13	205.15	3.02	SLST					MEDIUM GY. THINLY LAMINATED. OCC DISTURBED BDDG. SANDY @ BASE.	83	205.10
205.15	206.15	1.00	SS					FG, SALT & PEPPER. WEAKLY LAMINATED.		
206.15	207.65	1.50	SLST					MEDIUM-DARK GY. OCC COALY & CARBONACEOUS WISPS.	78	207.00
207.65	208.85	1.20	SS				SLST	FG, SALT & PEPPER. NUMEROUS SLST WISPS DEFINE A CONVOLUTED BDDG. SOME SLST RIP-UPS @ BASE.		
208.85	212.26	3.41	SLST					VERY CARBONACEOUS WITH COALY PLANT FGMTS. BECOMING SANDIER @ BASE.	72	209.90
212.26	213.06	.80	SS					FG, SALT & PEPPER AS AT 207.18M. DISTURBED BDDG @ BASE.		
213.06	215.65	2.59	SLST					INTERLAMINATED WITH THIN LIGHT GY SANDY BANDS GIVING CORE A STRIPED LOOK.	83	213.60

FIVE CABIN

12/16/85

DRILL HOLE # FC85D-1

LOG DATE 85/08/30
EXAMINED BY B. MCKINSTRY

TOP	BASE	THICKNESS	MAJOR	SEAM	SAMPLE#	REC %	MINOR LITHOLOGY	REMARKS	C.B.A.	DEPTH
213.06	215.65	2.59	SLST					LAMINAR BDDG	85	215.20
215.65	218.40	2.75	SS					FG-MG, SALT & PEPPER. WEAKLY LAMINATED. THIN COALY, CARBONACEOUS WISPS DEFINE BDDG.	81	216.20
218.40	221.20	2.80	MDST					SILTY, DARK GY BECOMING VERY CARBONACEOUS @ BASE. MASSIVE.	78	218.40
									61	219.90
221.20	224.39	3.19	COAL	9	7	72.10		BRIGHT & DULL. CHUNKY CORE. VERY DULL, HARD DENSE CORE FROM 223.58-224.05M. SMALL SLST PARTING FROM 224.05-224.13M & FROM 225.03-225.23M.		
224.39	225.60	1.21	MDST					SILTY, MEDIUM-DARK GY WITH OCC COAL STRINGERS & BANDS.		
225.60	231.20	5.60	SLST					REWORKED BDDG @ TOP. LAMINAR BDDG IN MIDDLE & REWORKED @ BASE.	78	228.70
								OCC LIGHT GY SS BANDS & COAL STRINGERS.	68	230.70
231.20	231.80	.60	MDST					DARK GY-BRN, MASSIVE, CARBONACEOUS.		
231.80	232.00	.20	COAL					BRIGHT & SLICKED		
232.00	236.60	4.60	MDST					SILTY, MEDIUM GY WITH COALY	76	233.10

Province of British Columbia
Ministry of Energy, Mines and Petroleum Resources

APPLICATION TO EXTEND TERM OF LICENCE

I, Glenn C. Proudfoot (Name) agent for Shell Canada Limited (Name)

(Address) P.O. Box 100 (Address)

Calgary, Alberta T2P 2H5

Valid FMC No. 207 568

hereby apply to the Minister to extend the term of Coal Licence(s) No(s). 6137 - 6143 (Group No. 376)

for a further period of one year.

2. Property name FIVE CABIN CREEK

3. I am allowing the following Coal Licence(s) No(s). to forfeit

4. I have performed, or caused to be performed, during the period August 19, 1985 to August 30, 1985, work to the value of at least $ 86,212.67

on the location of coal licence(s) as follows:

CATEGORY OF WORK	Licence(s) No(s).	Apportioned Cost
Geological mapping		
Surveys: Geophysical		
Geochemical		
Other		
Road construction		
Surface work		
Underground work		
Drilling	6137	72,722.11
Logging, sampling and testing	6137	7,755.73
Reclamation		
Other work (specify)	6137 - Preparation of Site	2,274.00
Off-property costs		3,460.83

5. The work performed on the location(s) is detailed in the attached report entitled Geological Assessment Report, Five Cabin Creek, B.C. (1985)

March 24, 1986 (Date)

(Signature)

Supervisor Land - CNRL (Position)

(FORMS AND REPORT TO BE SUBMITTED IN DUPLICATE)

GEOLOGICAL MAPPING Yes ☐ No ☑

	Area (Hectares)	Scale	Duration
Reconnaissance			
Detail: Surface			
Underground			
Other* (specify)			

Total Cost $

GEOPHYSICAL/GEOCHEMICAL SURVEYS Yes ☐ No ☑

Method
Grid
Topographic
Other* (specify)

Total Cost $

ROAD CONSTRUCTION Yes ☐ No ☑

Length Width
On Licence(s) No.(s)
Access to

Total Cost $

SURFACE WORK Yes ☐ No ☑

	Length	Width	Depth	Cost
Trenching				
Seam Tracing				
Crosscutting				
Other* (specify)				

Total Cost $

UNDERGROUND WORK Yes ☐ No ☑

	No. of Adits	Maximum Length	No. of Holes	Total Metres	Cost
Test Adits					
Other workings*					

Total Cost $

DRILLING Yes ☑ No ☐

	Hole Size	No. of Holes	Total Metres	Cost
Core: Diamond	NQ	1	308.00	72,722.11
Wireline				
Rotary: Conventional				
Reverse circulation				
Other* (specify)				

Contractor D.W. COATES LIMITED
Where is the core stored? CHARLIE LAKE CORE STORAGE

Total Cost $ 72,722.11

LOGGING, SAMPLING AND TESTING Yes ☑ No ☐

Lithology:	Drill samples	☐	Core samples	☑	Bulk samples	☐
Logs:	Gamma-neutron	☑	Density	☑		
Other* (specify)						
Testing:	Proximate analysis	☑	FSI	☑	Washability	☐
	Carbonization	☐	Petrographic	☐	Plasticity	☑
Other* (specify)						

Total Cost $ 7,755.73

RECLAMATION Yes ☐ No ☑

Details Reclamation included in Preparation of Site Total Cost $

OTHER WORK (Specify details) Yes ☑ No ☐

	Cost
Preparation of Site	2,274.00

Total Cost $ ~~2,274.00~~ 2,274.00

OFF-PROPERTY COSTS Yes ☑ No ☐

Details Report Preparation Total Cost $ 3,460.83

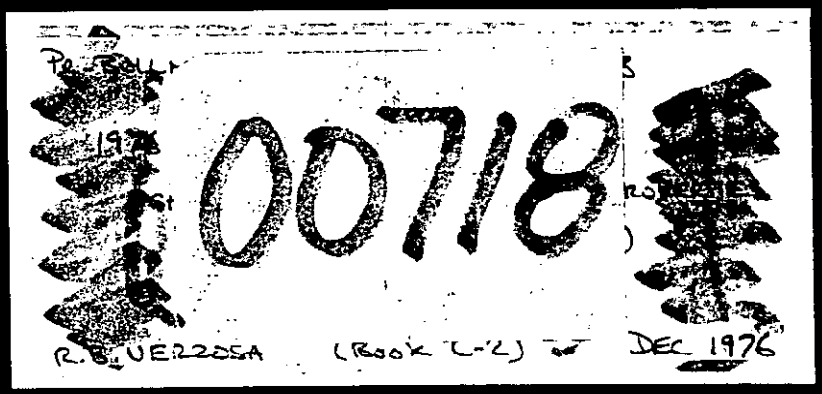
Total Expenditures $ 86,212.67

MARCH 24, 1986
(Date)

(Signature)

MANAGER GEOLOGY
(Position)

*A full explanation of other work is to be included.



484

LORING LABORATORIES LTD.

CERTIFICATE OF COAL TESTING

COMPANY	CROWSNEST RESOURCES LTD	FILE NO.	27877
ATTENTION	B. RYAN	DATE	September 25/85
PROJECT	FIVE CABIN	PAGE	1 of 5

SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY SINK	% RECOVERY FLOAT	BASIS OF ANALYSIS	REC'D % H_2O	% H_2O	% V.M.	% ASH	% F.C.	% S	KCAL/KG	F.S.I	NOTES
Hole #85-1 FIVE CABIN													
1 147.18-148.13	Raw Coal			As Received	3.91	-		15.03					
				Air Dried	-	.80		15.51				7	
				Dry Basis	-	-		15.64					
	-1.60FLT	-	84.63	Air Dried	-	.96	28.63	7.75	62.66	.76	7703	8	
				Dry Basis	-	-	28.91	7.83	63.26	.77	7778		
2 148.93-149.46	Raw Coal			As Received	4.96	-		32.04					
				Air Dried	-	.84		33.43				6	
				Dry Basis	-	-		33.71					
	-1.60FLT	-	58.42	Air Dried	-	.84	30.65	8.56	59.95	1.14	7638	8½	
				Dry Basis	-	-	30.91	8.63	60.46	1.15	7703		
3 151.6-151.9	Raw Coal			As Received	4.64	-		7.22					
				Air Dried	-	.63		7.52				1	
				Dry Basis	-	-		7.57					
	-1.60FLT	-	98.62	Air Dried	-	.83	22.36	6.21	70.60	.70	7865	1	
				Dry Basis	-	-	22.55	6.26	71.19	.71	7931		

0718

PURCHASE ORDER NUMBER: # CN 24019

ANALYST:

LORING LABORATORIES LTD.

CERTIFICATE OF COAL TESTING

COMPANY	CROWSNEST RESOURCES LTD	FILE NO.	27877
ATTENTION	B. RYAN	DATE	September 25/85
PROJECT	FIVE CABIN	PAGE	2 of 5

SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY SINK	% RECOVERY FLOAT	BASIS OF ANALYSIS	REC'D % H_2O	% H_2O	% V.M.	% ASH	% F.C.	% S	KCAL/KG	F.S.I	NOTES
Hole #85-1													
FIVE CABIN													
4	Raw Coal			As Received	2.98	-		18.91					
193.43-197.81				Air Dried	-	.78		19.34				2	
				Dry Basis	-	-		19.49					
	-1.60FLT	-	81.86	Air Dried	-	.67	24.65	10.55	64.13	.43	7518	3½	
				Dry Basis	-	-	24.82	10.62	64.56	.43	7569		
5	Raw Coal			As Received	5.00	-		75.23					
197.31-198.71				Air Dried	-	1.22		78.22				0	
				Dry Basis	-	-		79.19					
4-6	Comp			Air Dried	-	.95		32.29				2	
193.43-200.72				Dry Basis	-	-		32.60					
55:21:24													
	-1.60FLT	-	62.89	Air Dried	-	1.00	25.04	10.10	63.86	.43	7563	5	
				Dry Basis	-	-	25.29	10.20	64.51	.43	7639		
6	Raw Coal			As Received	5.87	-		20.52					
198.71-200.72				Air Dried	-	.84		21.62				6	
				Dry Basis	-	-		21.80					

PURCHASE ORDER NUMBER: # CN 24019

ANALYST: _____

LORING LABORATORIES LTD.

CERTIFICATE OF COAL TESTING

COMPANY	CROWSNEST RESOURCES LTD	FILE NO.	27877
ATTENTION	B. RYAN	DATE	September 25/85
PROJECT	FIVE CABIN	PAGE	3 of 5

SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY SINK	% RECOVERY FLOAT	BASIS OF ANALYSIS	REC'D % H_2O	% H_2O	% V.M.	% ASH	% F.C.	% S	KCAL/KG	F.S.I	NOTES
Hole #85-1													
FIVE CABIN													
6	-1.60FLT	-	72.23	Air Dried	-	.73	26.61	7.62	65.04	.41	7740	7	
				Dry Basis	-	-	26.81	7.68	65.51	.41	7797		
7	Raw Coal			As Received	5.64	-		33.64					
221.86-225.53				Air Dried	-	.85		35.35				2	
				Dry Basis	-	-		35.65					
	-1.60FLT	-	55.78	Air Dried	-	.86	25.82	8.16	65.16	.42	7732	4½	
				Dry Basis	-	-	26.04	8.23	65.73	.42	7799		
8	Raw Coal			As Received	3.31	-		29.41					
256.66-257.7				Air Dried	-	.73		30.28				3½	
				Dry Basis	-	-		30.42					
	-1.60FLT	-	65.59	Air Dried	-	.70	24.04	13.42	61.84	.46	7307	4½	
				Dry Basis	-	-	24.21	13.51	62.28	.46	7359		
9	Raw Coal			As Received	2.78	-		8.49					
286.94-287.64				Air Dried	-	.61		8.68				2½	
				Dry Basis	-	-		8.73					

PURCHASE ORDER NUMBER: # CN 24019

ANALYST: _____

LORING LABORATORIES LTD.

CERTIFICATE OF COAL TESTING

COMPANY	CROWSNEST RESOURCES LTD	FILE NO.	27877
ATTENTION	B. RYAN	DATE	September 25/85
PROJECT	FIVE CABIN	PAGE	4 of 5

SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY SINK	% RECOVERY FLOAT	BASIS OF ANALYSIS	REC'D % H_2O	% H_2O	% V.M.	% ASH	% F.C.	% S	KCAL/KG	F.S.I	NOTES
Hole #85-1 FIVE CABIN													
9	-1.60FLT	-	96.93	Air Dried	-	.67	22.12	7.19	70.02	.54	7908	3	
				Dry Basis	-	-	22.27	7.24	70.49	.54	7961		
10 289.55-290.79	Raw Coal			As Received	6.74	-		28.71					
				Air Dried	-	.69		30.58				3½	
				Dry Basis	-	-		30.79					
	-1.60FLT	-	58.10	Air Dried	-	.88	24.98	6.93	67.21	.67	7983	7½	
				Dry Basis	-	-	25.20	6.99	67.81	.68	8054		

PURCHASE ORDER NUMBER: # CN 24019

ANALYST: _____

FILE NO. AA-46

To: CROWSNEST RESOURCES LTD
Eau Claire Place
525 - 3rd Avenue S.W.,
P.O. Box 2699, Station M
Calgary, Alberta T2P 2M7
Attn: B. Ryan

File No. 27877
Date September 25, 1985
Samples Coal
P.O.# CN 24019

Certificate of
ASSAY
LORING LABORATORIES LTD.

GEISELER PLASTICITY TESTS

SAMPLE No.	START DDPM	START TEMP(C°)	MAXIMUM DDPM	MAXIMUM TEMP(C°)	FINAL DDPM	FINAL TEMP(C°)	RANGE
Hole #85-1 FIVE CABIN "Coal Analysis" -1.60 FLT							
1-147.18-148.13	1	440	70	462	0	497	56
4-193.43-197.31	1	444	2	458	0	490	46
7-221.86-225.53	1	441	7	457	0	492	51

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES . . . .

Rejects Retained one month.
Pulps Retained one month unless specific arrangements made in advance.

Assayer