

PRO 40
PR SECUS MOUNTAIN 84(1-4)A

634

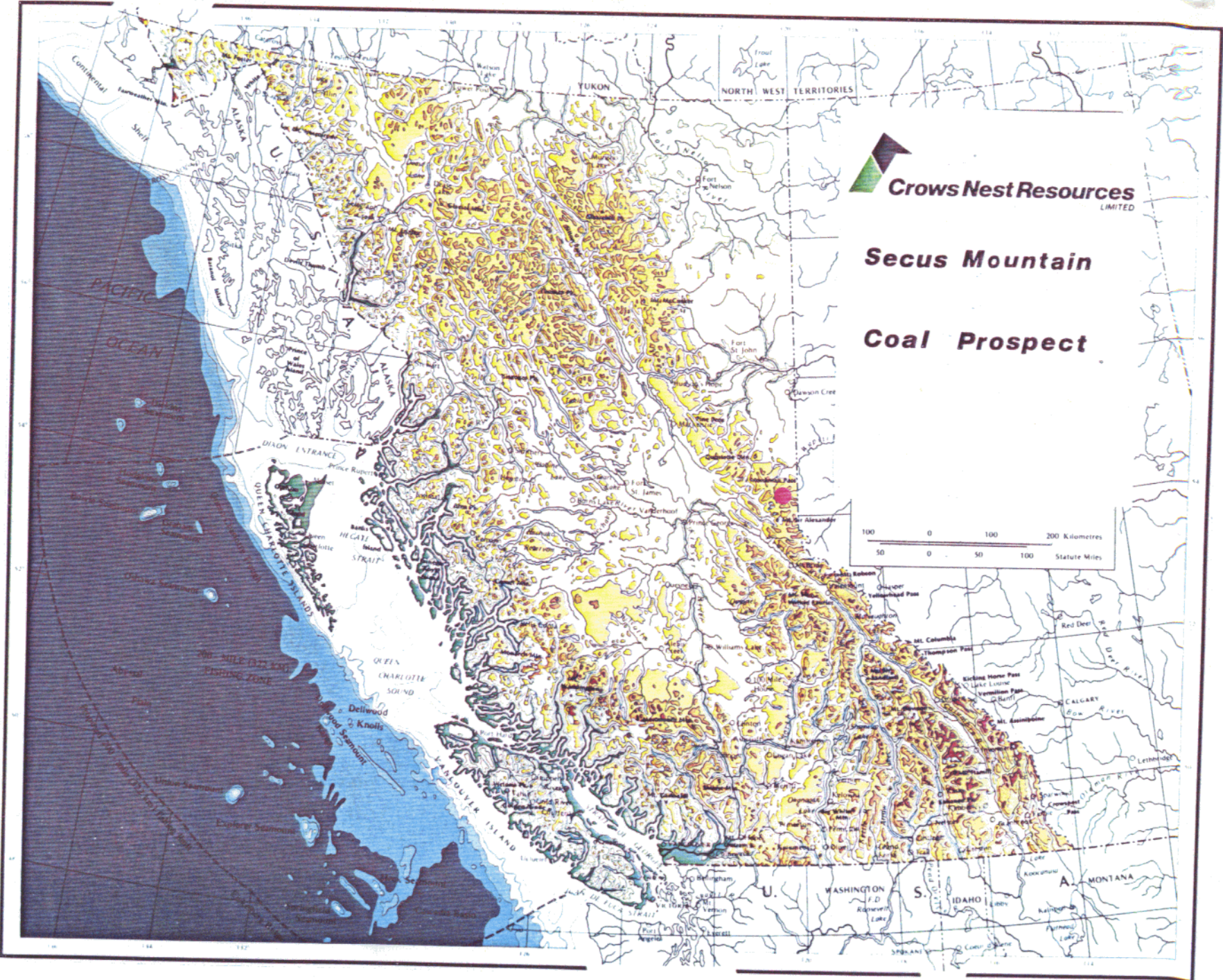


Crows Nest Resources
LIMITED

Secus Mountain

Coal Prospect

100 0 100 200 Kilometres
50 0 50 100 Statute Miles





Crows Nest Resources

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P.O. Box 2699, Station M, Calgary, Alberta T2P 2M7 Telex 03-822505

December 20, 1984

Ministry of Energy, Mines & Petroleum Resources
617 Government Street
Victoria, B.C.
V8V 1X4

Attention: Mr. P. Hagen
Coal Administrator

Dear Mr. Hagen:

Enclosed please find our report on the Secus Mountain project.

This report has been prepared by Mr. A. White, Geologist and Mr. D. Fietz, Staff Technologist, both of whom were employed by Crows Nest Resources Limited.

Mr. A. White, Honours B.Sc., graduated in Geology from the University of Waterloo in 1977. Prior to joining Crows Nest Resources Limited in 1980, Mr. White worked as a geologist on a number of mineral exploration programs in Northern Ontario, the Northwest Territories and British Columbia.

Mr. D. Fietz, C.E.T., graduated from Exploration Technology: Mineral Resources from the Northern Alberta Institute of Technology in 1972. Prior to joining Shell Canada Resources Limited/Crows Nest Resources Limited in 1976, Mr. Fietz worked as a geological technologist for the Coal Department of the Energy Resources Conservation Board in Calgary.

In my opinion, Mr. White and Mr. Fietz are fully qualified, by training and experience to prepare this report and this account of work done under their direct supervision.

Yours truly

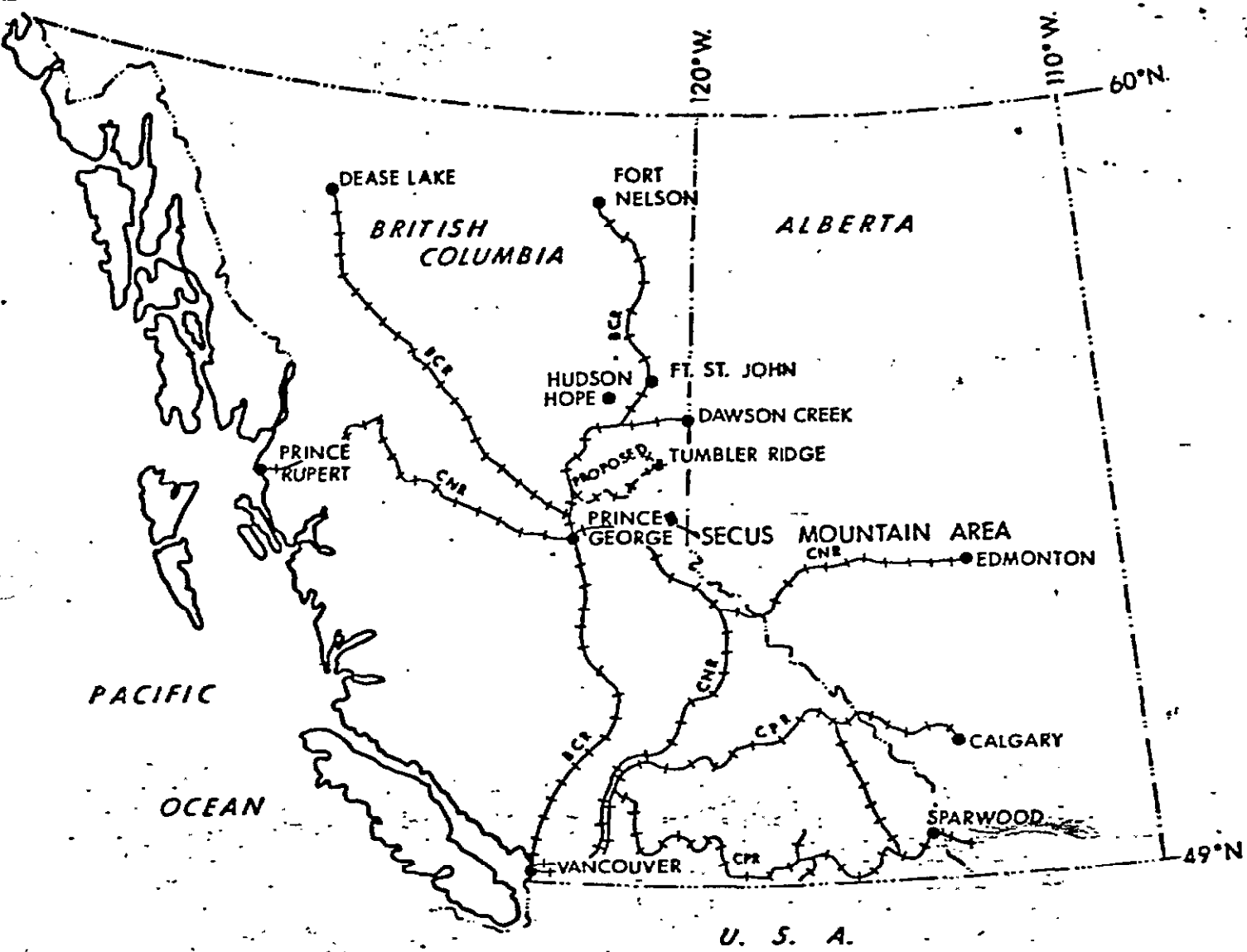
H.G. Rushton
Vice President - Development

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

Enclosure

00 634

C2/av.1



Crows Nest Resources Limited
EXPLORATION

SECUS MOUNTAIN
NE BC

LOCATION MAP
FIGURE 1

AUTHOR A WHITE	SCALE	ENCLOSURE NO.
DATE 81 03 05	REVISED	DRAWING NO AA-539
To Accompany		

PR 040
PR SECUS MTN 84(1-4)A

SECUS MOUNTAIN: NORTH SECUS PROJECT

N.E. B.C.

COAL EXPLORATION: 1984

COAL LICENSES: NORTH SECUS LICENSES
4745, 4744, 4743, 4219 and 4218
GROUP 297
PEACE RIVER LAND DISTRICT, NORTHEASTERN B.C.
B.C. COAL LICENSES HELD BY SHELL CANADA
RESOURCES LIMITED: OPERATED BY CROWS
NEST RESOURCES LIMITED

NATIONAL TOPOGRAPHIC SERIES: 9317E, 9318W

LATITUDE AND LONGITUDE: 54° 28' NORTH LATITUDE
120° 30' WEST LONGITUDE

AUTHORS: A. WHITE/D. FIETZ

FIELD WORK: JUNE and JULY, 1984

SUBMISSION DATE: December 20, 1984

CONFIDENTIAL

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 SECUS MOUNTAIN

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SUMMARY

The North Secus Block consists of five B.C. coal licences within Group 297.

During late June - early July, 1984, one diamond drill hole was drilled to a depth of 313 m using a helicopter supported Longyear 38 drill. The purpose of this drilling was to verify seam continuity and stratigraphy determined from the 1981 exploration program. Results confirm the presence of four coal zones within the middle to lower Gates member of the Commotion Formation, Fort St. John's Group. Correlation between boreholes was excellent. However, it appears that there is only limited coal potential in the upper part of the Gates member. Seam thicknesses within the zones totalled 13.5m in a 130m section with seam 4 being thickest (approx. 7.5m) and highest in the section.

Eleven samples were removed for analysis. The remainder of the core has been shipped to the British Columbia Ministry of Energy, Mines & Petroleum Resources, Charlie lake core storage facility.

Results of the analyses indicate the rank of this coal to be High Volatile Bituminous A.

Licence 4218 - Diamond Drill Hole DG 84-1

1.0 INTRODUCTION

The Secus Mountain: North Secus Property held by Shell Canada Resources Limited and operated by Crows Nest Resources Limited (a wholly owned subsidiary) consists of 5 coal licence covering 1,131 hectares. The project area is located some 80 air-kilometres southeast of the Town of Tumbler Ridge. Previous reports have referred to this area as the Dumb Goat Block of licences.

Field work conducted during 1984 consisted of drilling one helicopter supported, diamond drill hole to a total depth of 313.0 metres.

Results of the 1984 hole differed only marginally from the geological interpretation generated from the 1981 program. Only those geological maps and section(s) influenced by the 1984 drill hole have been included in this report.

Coal samples from the 1984 drill hole were analyzed at Loring Laboratories in Calgary, Alberta. The results indicate a High Volatile Bituminous A coal.

1.1 COAL LAND TENURE

The Secus Mountain coal licences, held by Shell Canada Resources Limited, total thirteen. The five coal licences of the North Secus Block (No. 4745, 4744, 4743, 4219 and 4218) are contained within Group 297. The Group covers 1,131 hectares of land in the Peace River Land District, Northeastern British Columbia (Appendix 1). The property is operated by Crows Nest Resources Limited, a wholly owned subsidiary of Shell Canada Resources Limited. It has previously been referred to as the Dumb Goat Licence Block.

The following table, entitled "B.C. Coal Licences Tenure Standing" contains details (Table 1).

CROWS NEST RESOURCES LIMITED

SECUS MOUNTAIN - NORTH PROSPECT: GROUP 297

1984 TENURE STATUS

<u>Licence</u>	<u>Hectares</u>	<u>Term</u>	<u>Base Date</u>	<u>WORK REQUIREMENTS/CREDITS (per hectare)</u>			
				<u>Previous Credits</u>	<u>+ Current Credits</u>	<u>- Work Requirements</u>	<u>= Credits Forward</u>
4218	302	6	Dec.31,1978	10.47	89.53	50.00	50.00
4219	151	6	Dec.31,1978	10.47	89.53	50.00	50.00
4743	301	5	Dec.31,1979	47.98	75.88	25.00	98.86
4744	301	5	Dec.31,1979	47.98	75.88	25.00	98.86
4745	76	5	Dec.31,1979	47.98	75.88	25.00	98.86
	<u>1131</u>						

Future Work Requirements

1985	NIL
1986	23,422.92
1987	56,550.00
1988	56,550.00
1989	56,560.00

1.2 LOCATION, GEOGRAPHY AND PHYSIOGRAPHY

The North Secus Block is located some 80 air kilometres southeast of the Town of Tumbler Ridge. The property is centered approximately at 54° 28' north latitude and 120° 30' west longitude on NTS Topographic Sheets 93 I 7E and 93 I 8W.

The licences of North Secus Block are located 7± kilometers northwest of Mount Belcourt. Whatley Creek and tributaries, which flow into Red Deer Creek, drain the licence block.

Elevations throughout the Group range from 1180±m A.S.L. in the Whatley Creek drainage to 1780±m A.S.L. on the eastern edge of Coal Licence 4219.

A small area on the eastern edge of Coal Licence 4219 could be classified as 'barren alpine'. Excepting that small area, forest cover of the North Secus Block is primarily spruce at lower elevations. Alpine fir⁺ is the predominant species at higher elevations.

+ The tree cover surrounding the 1984 drill hole (DG84D-1) site was primarily alpine fir.

1.3 ACCOMODATION/ACCESS

The exploration crew stayed at the Oakwood Petroleum: Grizzly Valley Gas Plant Camp located some 42 road kilometres southeast of Tumbler Ridge, B.C. The camp is best accessible from Chetwynd, by the paved all-weather highway #29. The paved road ends 13 kilometres south of Tumbler Ridge. The balance of the road to camp is well gravelled and maintained.

At present, there is no road access within several kilometres of the project area. The project was totally dependent on helicopter support.

- o the diamond drill was staged from an abandoned O/G wellsite; the wellsite is located at the road's end and forms the start of the Wapiti Lake Recreational Trail; to transport the drill a Bell 205 helicopter (Northern Mountain Helicopters) was contracted; round trips of 'staging area - drill site - staging area' averaged 30-40 minutes; in total, some 14 trips were required.
- o crew/supply transportation originated from the Oakwood Camp; a Bell 206 helicopter (Okanagon Helicopters Limited) was contracted and based at the Oakwood Camp during the program; round trips of 'camp -drill site - camp' averaged 45 minutes.
- o the geophysical logging unit was also staged from the O/G wellsite; a Bell 206L-1 helicopter (Okanagon Helicopters Limited) was utilized.

The 'Anzac Spur' of the British Columbia Railway ends in close proximity to Tumbler Ridge. This Spur, some 30± kilometres by air from the Project area, represents the closest existing rail facilities. The BCR line connects the existing northeastern coal developments with the deep sea port located at Ridley Island. The port is located some 995 ± rail kilometres from Tumbler Ridge.

2.0 EXPLORATION

2.1 SUMMARY OF PREVIOUS WORK

CNRL conducted coal exploration programs within the Project area during -

1980 ... geological field mapping (1:5000) and hand trenching

1981 ... continued program of geological field mapping (1:5000)

... drilling one (helicopter supported) diamond drill hole:

DG81-1

Geological maps and sections generated from the above noted programs outline the basic stratigraphy and structure within the CNRL coal licences. Economic potential of the licences is limited to the coal contained within the Gates Member, Commotion Formation.

2.2 SCOPE AND OBJECTIVES: 1984 PROGRAM

The 1984 field program focussed on -

- verifying the 1980-81 generated, applicable geological maps and cross-sections.
- prospecting for lateral continuity of the correlatable coal seams/zones within the Project area.

2.3 EXPLORATION PROGRAM: 1984

The following work was completed during 1984 - one NQ diamond hole was drilled to a total depth of 313m; upon completion of drilling, the hole was logged using downhole geophysical tools; the hole was cemented full length in accordance within the Chief Inspector's directions (see Appendix 2: 'Report on the Sealing of Drillholes'); core recovered was logged and sampled; refer to Appendices 5-7 inclusive for details.

Coal/coaly samples from diamond drill hole DG84D-1 were analyzed by Loring Laboratories; refer to Appendix 4: "North Secus - 1984: Sample Analyses" for details.

2.4 EXPLORATION COSTS: 1984

Expenditures of the 1984 geologic field program have been detailed in the 'Application to Extend Term of Licence' (Appendix 8). During 1984, \$92,006.07 was spent on the North Secus coal licences.

3.0 GEOLOGY

3.1 REGIONAL GEOLOGY (Appendix 1)

The North Secus licence block is located along the southern extension of the 'Wapiti dip-slope', a term used to delineate a west-dipping belt of Cretaceous sediments containing potential coal reserves topographically expressing a dip-slope orientation. Stratigraphy is simple with the exception of a structural repetition of the succession due to the west-dipping Saxon thrust fault. The licence block is located over Cretaceous strata repeated in the hanging wall of this thrust. This stratigraphy is bounded on the west by the Rocky Mountains Front Range thrust exposing Paleozoic carbonates in its hanging wall. Coal measures of economic interest are confined to the Gates member of the Commotion Formation, Fort St. John Group.

3.2 SECUS STRATIGRAPHY (Appendix 3)

The Secus Mountain North Secus Block is underlain by strata of the Upper Jurassic and Lower Cretaceous Minnes, Bullhead and Fort St. John Groups.

In the North Secus Mountain area, these Groups contain an unusually high proportion of conglomerates, greatly complicating the identification and mappability of the main target zone: the Gates Member of the Commotion Formation. Figure 2 illustrates the stratigraphy of South Secus area and discrepancies in stratigraphic thicknesses are compensated for in the text following.

3.2.1 MINNES GROUP (JKmi)

The undivided Minnes Group refers to the stratigraphic unit lying immediately beneath the Cadomin Formation. The Minnes Group is composed of both marine and non-marine sediments. The sediments vary from conglomerates to interbedded sandstones, siltstones, and shales, with minor coal occurrences. Though they are laterally discontinuous, coal or coaly beds do occur; seam thicknesses, however, seldom exceed one meter.

Minnes strata throughout this portion of Northeastern British Columbia have not been mapped in detail.

3.2.2 CADOMIN FORMATION (Kcd)

The Cadomin Formation (15m±) refers to a unit that is primarily conglomeratic. Cadomin conglomerates characteristically weather light gray and ring hard when struck with a hammer; further, the cement is very resistant ... breakage occurs through the pebbles, cobbles, and boulders, rather than around them, through the matrix. Visually, constituents of the Cadomin conglomerates contain shades of rosey pink, a jade-like green, and a particular smooth, light gray. Cadomin sandstones also contain the same, varied colours. Minnes conglomerates tend to have a somewhat weaker matrix, are browner in colour, slightly less topographically prominent, and do not contain pink and green constituents.

Similar to the basal contact of the Cadomin Formation, the top of the Cadomin is positioned where the resistant, light gray, massive conglomerate or sandstone grades to a softer, browner conglomerate (or sandstone).

3.2.3 GETHING FORMATION (Kgt)

Within the North Secus area the Gething Formation attains a thickness of 197m± and consists primarily of interbedded conglomerates and sandstones which often occur in massive, prominent units.

Economic coal potential within the Gething Formation is believed to minimal. Only one Gething coal zone is noted in the area. Stratigraphically the coal occurrence is positioned about 130m below the top of the Gething Formation.

Constituents of Gething conglomerates bear another relation to the Cadomin beds, in addition to contrasting colors and hardness. The average size of the largest clasts within the Gething is always slightly smaller than the largest clasts found within the Cadomin Formation.

3.2.4 MOOSEBAR FORMATION (Kmb)

The Moosebar Formation is lithologically distinct from the Gething Formation and consists primarily of dark grey, rubbly and partly calcareous mudstones and shales with minor beds of argillaceous sandstones and ironstone bands. Thin layers of bentonite and glauconitic sandstones are also present.

Overall, the Moosebar Formation is soft and weathers easily. The Moosebar Formation is notable primarily because of its very characteristic, recessive effect on the topography. Within the North Secus area, the Moosebar Formation is 23m thick.

3.2.5 COMMOTION FORMATION: GATES MEMBER (Kcg)

In the Secus Mountain area, the Commotion Formation can be divided into the coal bearing Gates member, and an overlying sandstone unit, the Boulder Creek member.

The marine Hulcross Member present in the Commotion Formation further to the north, is not present in the Secus Mountain area. The last known occurrence is 1m± thick, near the peak of Mt. Belcourt. (Bell, 1980)

The Gates Member is a very consistent unit. Within the North Secus Mountain area, the unit 435m± thick. It is composed of alternating sequences of conglomerates, sandstones, siltstones, mudstones, and coal beds. Individual conglomerate units, though massive and often prominent, are thinner and have better developed bedding than the underlying Gething and Cadomin conglomerates. The Gates Member is the main target zone for coal exploration in the Secus Mountain area. Within the lower portion of the Gates Member, three distinctive lithologic units have been recognized:

- o Torrens Sandstone
- o First Gates Coal Zone
- o First Gates Conglomerate

The prominent Torrens Sandstone (45m±) is located at the base of the Gates member. The upper part of the Torrens is a hard grey sandstone; the underlying, thicker unit contains softer, brown sandstones which weather distinctively.

The First Gates Coal Zone (60m±) encompasses the strata between the Torrens Sandstone and the First Gates Conglomerate. In the North Secus area, it contains 1.5 meters of coal in two thin seams.

The First Gates Conglomerate (30m±) refers to a massive coarse grained unit lying stratigraphically above the First Gates Coal Zone. It forms a convenient top to the recessive coal zone.

Based on the 1981 and 1984 drilling by Crows Nest Resources, the following coal zones are known to occur in the Gates Member:

- 3 thin (less than 1.0m) coal seams in a 20m zone 190m stratigraphically above the top of the First Gates conglomerate.
- 7.5m± zone 80m stratigraphically above the top of the First Gates Conglomerate.

3.2.6 COMMOTION FORMATION: BOULDER CREEK MEMBER (Kcb)

The Boulder Creek Member (77m±) is a prominent, predominantly sandstone unit lying stratigraphically above the Gates Member. The basal contact of the Boulder Creek member is drawn at the beginning of a hard, generally grey-weathering, massive, often pebbly sandstone.

3.3 STRUCTURE

The structural setting of the North Secus Block is surprisingly simple considering its location in the structurally complex inner foothills. The moderate west dipping Cretaceous strata form the east limb of a broad syncline truncated on its west limb by the Rocky Mountain Front Range thrust. This major thrust has translated Paleozoic carbonates over the Cretaceous sediments. Stratigraphy within the east limb of the syncline is repeated by a bedding plane thrust known as the Saxon Thrust. The thrust effectively doubles the stratigraphic succession. Subsequent erosion and glaciation have created a topographic dip slope situation for strata above the hanging wall of this thrust.

4.0 COAL GEOLOGY AND QUALITY

Similar to other properties in the region, economic coal potential is limited to the Gates member, Cretaceous Fort St. John Group. In particular, workers in the Secus area have identified zones of economic interest within the Gates. For the North Secus Block, they include a coal zone, '1st Gates Coal Zone', between the Torrens Sandstone and the 1st Gates conglomerate, a second zone 20-30m above the 1st Gates conglomerate and a third zone approximately 80m above the 1st Gates conglomerate.

Within the 60m thick '1st Gates Coal Zone', only one seam, located several meters from the base of the 1st Gates conglomerate, is greater than 1 meter in thickness. This seam averages 2.5m thick with a .6m parting in the middle. The next coal zone up-section consists of 2 seams approximately 2 and 1 meters thick respectively separated by 10 meters of rock. The third zone contains the thickest coal averaging 7.5 meters thick with several minor partings. Above this seam are isolated coal stringers no thicker than .6 meters and of little economic importance. Table 2 summarizes the coal quality for the respective seams from each borehole. It should be noted from structural cross-section 400 N (Appendix 6) that correlation of coal seams along strike and down dip between drillholes is excellent.

TABLE 2
COAL QUALITY NORTH SECUS

HOLE ID	SEAM	TOP DEPTH(m)	BASE DEPTH(m)	RAW ASH	FLOAT ASH	FLOAT VM	S	FLOAT FSI	YIELD	Kcal/Kg
DG81-1	4	38.21	44.14	35.87	7.11	30.32		1.5	50	7484
	3	102.6	103.3	NS	NS	NS		NS	NS	NS
	2	113.81	116.20	24.71	8.31	30.43		3.5	62	7502
	1	153.57	157.04	15.64	6.16	31.56		5.0	80	7690
DG84-1	4	184.54	192.32	26.98	10.89	31.73	.28	3.0	60	7262
	3	246.9	247.84	36.86	10.54	31.64	.78	6.0	53	7316
	2	258.02	260.2	21.55	10.06	30.65	.27	5.0	75.0	7405
	1	298.28	300.73	27.88	6.98	33.27	.33	6.5	67	7713

NOTE: Float values @ 1.6 S.G.

5.0 CONCLUSIONS AND RECOMMENDATIONS

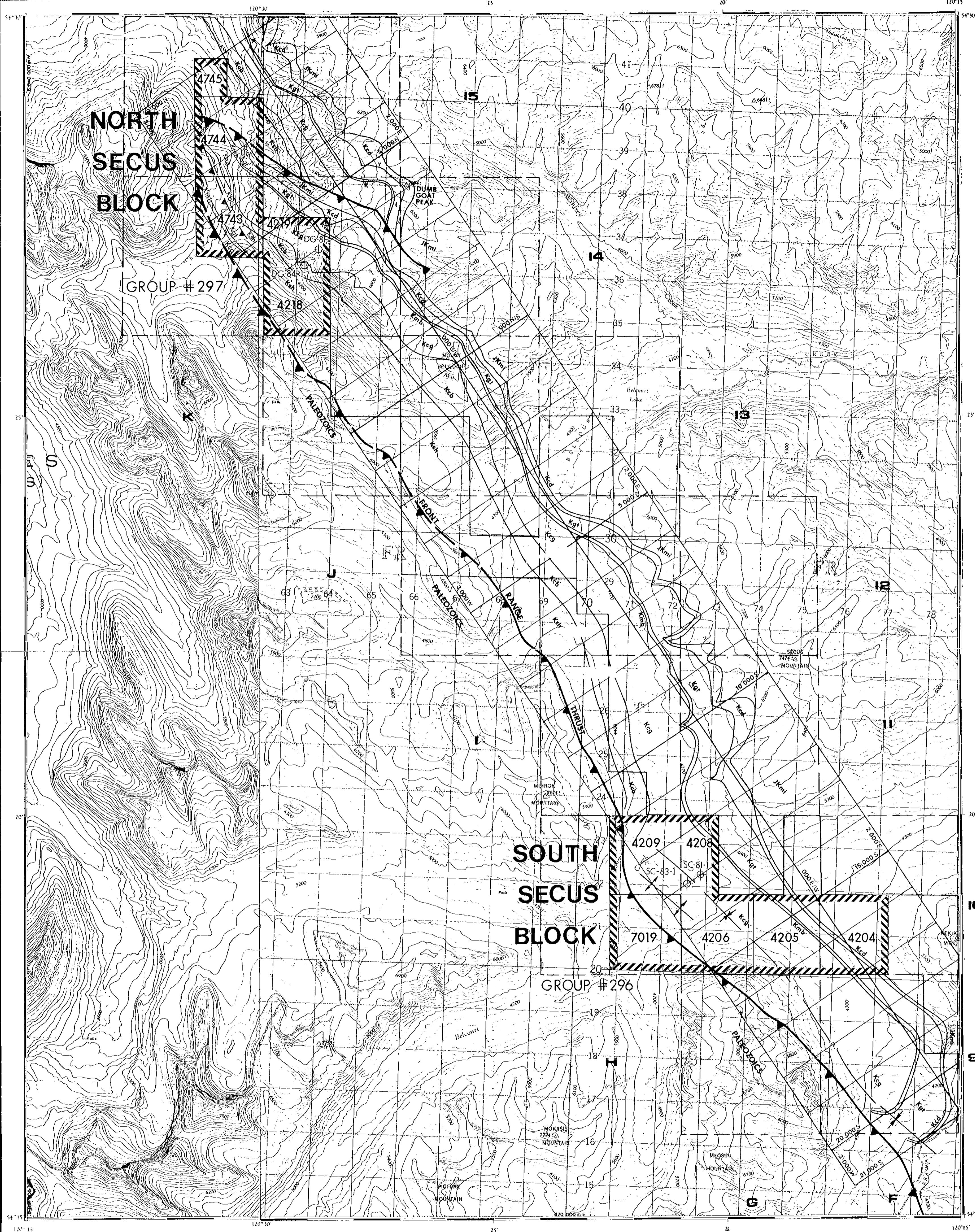
The 1984 drill hole DG84-1 intersected the lower to middle 310 meters of the Gates member. This is a similar section as drilled in 1981 (DG81-1). This section of the Gates contains approximately 13.5m of coal in 130m of section in 4 seams greater than one meter. There is excellent correlation between the two holes both down dip and along strike, confirming the expected stratigraphic consistency within the Gates. However, too much section exists between the lower most 2 coal zones and the top seam to allow for economic mineability of the lower section. It appears that only seam 4 would present open-pit mining potential at this time.

Coal quality analyses of the core from DG81-1 and DG84-1 indicate the coal rank is High Volatile Bituminous A (ASTM) with seams displaying apparent difficulties in beneficiating the raw ash content.

It is recommended that further exploration be limited to delineation of seam 4, particularly in licence #4219.

6.0 BIBLIOGRAPHY

- Bell, Dennis, 1980: "Geological Report, Secus Mountain Property", internal report, Crows Nest Resources Limited, filed with B.C. Ministry of Energy, Mines and Petroleum Resources.
- Bell, Dennis, 1981: "Geological Report, Secus Mountain Coal Exploration, 1981"; internal report, Crows Nest Resources Limited, filed with B.C. Ministry of Energy, Mines and Petroleum Resources.
- Hoffman, Georgia, 1979: "1979 Geological Report, Secus Mountain Coal Property"; internal report, Crows nest Resources Limited, filed with B.C. Ministry of Energy, Mines and Petroleum Resources.
- White, Alan & Fietz, Dale, 1983: "1983 Exploration Program on the South Secus Block"; internal report, Crows Nest Resources Limited, filed with B.C. Ministry of Energy, Mines and Petroleum Resources.



GEOLOGICAL LEGEND

- [Ksh] SHAFTESBURY FORMATION
 - [Kcb] BOULDER CREEK FORMATION
 - [Kcg] COMMOTION FORMATION
 - [Kmb] MOOSEBAR FORMATION
 - [Kgt] GETHING FORMATION
 - [Kcd] CADOMIN FORMATION
 - [Kini] MINNIES GROUP, UNDIFFERENTIATED
- FORT ST. JOHN GROUP
 BULLHEAD GROUP

GEOLOGICAL SYMBOLS

- ⊕ SYNCLINE
- ⊖ ANTICLINE
- ▼ THRUST FAULT, POSITION EXPOSED
- ▼ THRUST FAULT, POSITION APPROXIMATE
- ⊕ CNRL DRILL HOLE
- ▨▨▨▨ EXISTING COAL LICENCE BOUNDARY

Crows Nest Resources Limited
 EXPLORATION
 SECUS MOUNTAIN
 N.E. B.C.

SCALE 1:50,000 ÉCHELLE

Roads	Routes	Contours	Contours
hard surface, all weather	parce, toute saison	100 feet	100 pieds
hard surface, all weather	parce, toute saison	500 feet	500 pieds
loose surface, all weather	de gravier, toute saison	1000 feet	1000 pieds
loose surface, dry weather	de gravier, période sèche	2000 feet	2000 pieds
rock	rochers	3000 feet	3000 pieds
rock in patches	cailloux en endroits	4000 feet	4000 pieds
Palms, normal growth, single trunk	Chemin de fer, voie unique (établissement normal)	5000 feet	5000 pieds
Horizontal control point, with elevation	Point géodésique, avec cote	6000 feet	6000 pieds
Bench mark, with elevation	Repère de nivellement, avec cote	7000 feet	7000 pieds
Spot elevation, precise, approximate	Point coté, précis, approximatif	8000 feet	8000 pieds
		9000 feet	9000 pieds
		10000 feet	10000 pieds

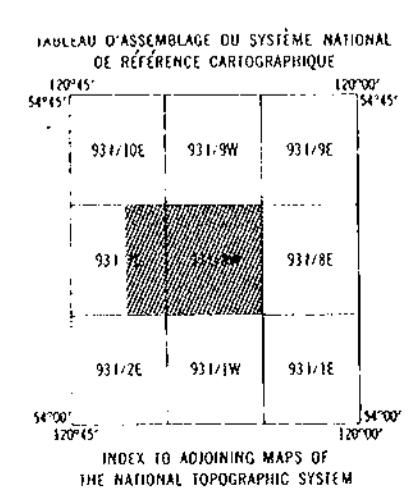
CONTOUR INTERVAL 100 FEET
 Élévations in Feet above Mean Sea Level

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

Transverse Mercator Projection
 North American Datum 1927
 MAGNETIC DECLINATION 25°27' EAST
 AT CENTRE OF MAP 1965
 Annual change decrease 4"

Projection transversale de Mercator
 Réseau géodésique nord américain année 1927
 DÉCLINAISON MAGNÉTIQUE AU CENTRE
 DE LA FEUILLE EN 1965: 25°27' EST
 Déclinaison 4"

Building	Bâtiment	Church	Église
School	École	Post Office	Bureau de poste
Cemetery	Cimetière	Marine	Marine
Light house	Phare	Power transmission line	Ligne de transport d'énergie
River with bridge	Rivière avec pont	Stream, intermittent or dry	Cours d'eau intermittent, ou à sec
Stream, intermittent or dry	Cours d'eau intermittent, ou à sec	Lake, intermittent, indefinite	Lac intermittent, rive imprécise
Marsh or Swamp	Marais ou marécage	Depression contours	Courbes de cote creuse



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PR-SECUS MOUNTAIN 84-112A (2)

Crows Nest Resources Limited
 EXPLORATION
 SECUS MOUNTAIN
 N.E. B.C.

**INDEX, GEOLOGICAL COMPILATION
 AND COAL LAND DISPOSITION MAP**
 N.T.S. - 93 I U.T.M. ZONE 10

AUTHOR: D. BELL SCALE: 1:50,000 ENCLOSURE No. APPENDIX 1
 DATE: 81-11-11 REVISED: 84-12 A. WHITE DRAWING No. SMSU03
 To Accompany

Report on the Sealing of Drillholes

Inspection District PRINCE GEORGE Date of Report July 5/84
Company CROWS NEST RESOURCES LTD. Land District PEACE RIVER
Coal Map Number 93I/B Licence Number CL 4218

1. Number of Drillhole DG64D-1 Bags of Cement 44
2. Surface elevation approximately 1625 m A.S.L. (not surveyed)
3. Type (Vertical, diamond, rotary, size etc.) NQ Diamond Hole, -60° at 250'
4. Drilled by: Name of Contractor: TONTO DRILLING COMPANY TD: 313 m
Name of Exploration Company CROWS NEST RESOURCES LTD.

5. Date of Completion: July 5/84

6. Date of Sealing: July 4/84

7. Sealed by: Name of Contractor: TONTO DRILLING COMPANY
Name of Exploration Company CROWS NEST RESOURCES LTD.

8. (a) Has any casing, drill pipe, drill bits, core barrel, etc. been left in the hole
(b) If so, give details and location: 1-10' NQ Rod; cemented in at top of hole to mark location; ~ 1-2' extend above ground elevation

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: Frank J. Kuehling

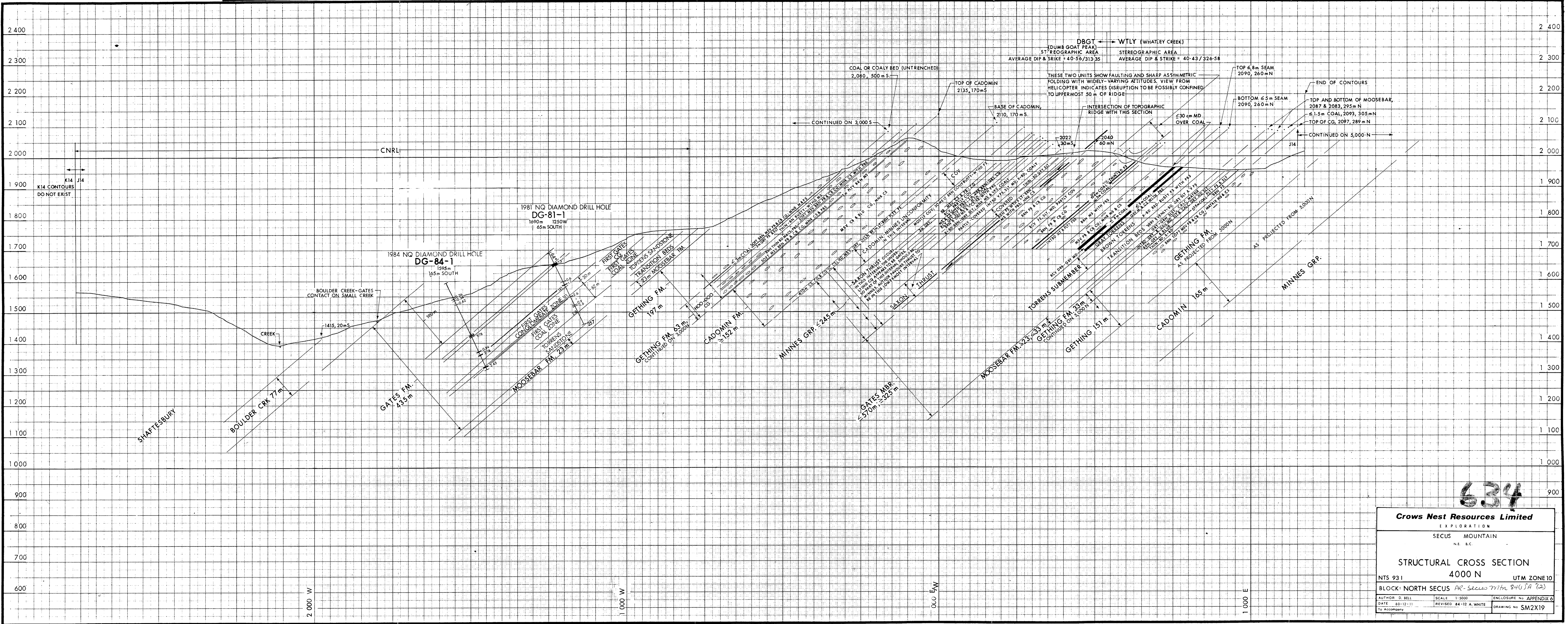
Designation: TONTO DRILLING FOREMAN

Date: 05-07-84

Countersignature: Alan M. White

Designation: Geologist - CROWS NEST RESOURCES LTD.

Date: July 5, 1984



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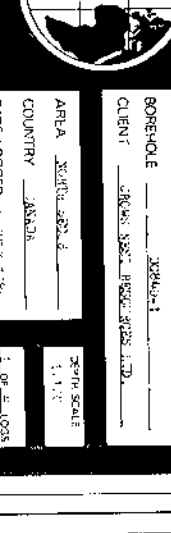
Crows Nest Resources Limited
 EXPLORATION
 SECUS MOUNTAIN
 N.E. BC

STRUCTURAL CROSS SECTION
 4000 N

NTS 931 UTM ZONE 10
 BLOCK: NORTH SECUS PR-Secus mtn 840 JA (2)

AUTHOR: D. BELL	SCALE: 1:5000	ENCLOSURE NO: APPENDIX 6
DATE: 80-12-11	REVISED: 84-12 A. WHITE	DRAWING NO: SM2X19
To Accompany		

06-362007000 841(B) (3)



BOREHOLE: 30284-1
CLIENT: SAGUARO, SAGUARO, SAGUARO, SAGUARO
ALPHA: 30284-1
DATE LOGGED: 11/11/00

COAL LITHOLOGY LOG

SONDE TYPE: 634
COAL COMBINATION: SCANDI
LOG SUIT: GAMMA RAY
CALIBER: 3.00 INCHES

EQUIPMENT AND RECORDING DATA										
LOG	COAL COMBINATION	SONDE	EQUIPMENT	CALIBRATION	LOG RANGE	TAPING RECORD SPEED	RAIL	RAIL	RAIL	SEAM LOG

CALIBRATION DATA									
NO	LOG	DEPTH	SCALE	LOG VALUE	SCALE VALUE	NO	LOG	DEPTH	SCALE
1						2			

COAL QUALITY SEAM THICKNESS LOG INTERVALS (FEET TO INCHES)									
FROM	TO	SEAM	THICKNESS	LOG	SCALE	LOG VALUE	SCALE VALUE	FROM	TO
103	262	251	212	197	158	81	69		

ADDITIONAL SONDES RUN									
SONDE	LOG	DEPTH	SCALE	LOG VALUE	SCALE VALUE				
317	N-H		11100						
231	Vert								

REMARKS: Angle hole drilled at 30° to vertical.

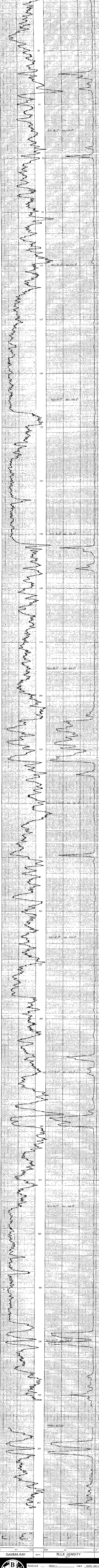
BPB COAL LITHOLOGY LOG

LOG NO: 81 WALL: 022 02 6 UAM JG CA: 001 27.06.84 10 VALUE 53.00 6.87 2 IN 668 004

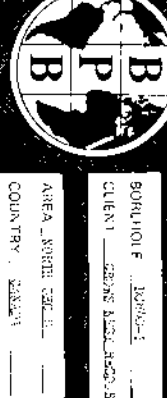
JG WAB: SHOWS AT ABOVE VALUE - 3.3 JG NO: 0001 0000 0000 6.68 7 IN 917 004

GAMMA RAY DEPTH BULK DENSITY CALIBER

HOLE SIZE CORRECTION DATA



GAMMA RAY DEPTH BULK DENSITY CALIBER



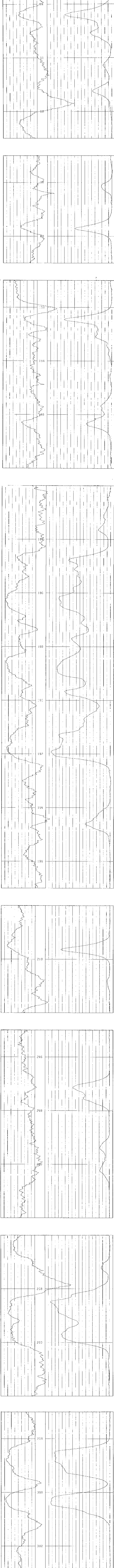
BOURNION F. JORDAN
 CLIENT: CRANE ASSOCIATES LTD.
 AREA: SOUTH AFRICA
 COUNTRY: SOUTH AFRICA
 DATE LOGGED: 11.1.1988
 LOG NO: 634

COAL QUALITY LOG
 JOHANNESBURG DATA
 OPERATIONAL DATA
 EQUIPMENT AND RECORDING DATA
 LOG NO: 634

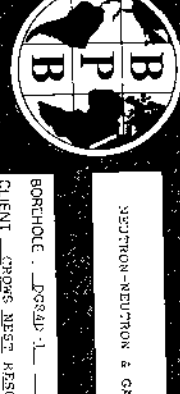
SOND TYPE: COAL
 COMBINATION: COAL
 LOG SUITE: GAMMA RAY
 L.S. DENSITY

LOG SUITE: GAMMA RAY
 L.S. DENSITY
634

B P B COAL QUALITY LOG



28-52110-274 211/91/131



SECTION-NEUTRON & GAMMA RAY

BONEHOLE JORDAN 1

CLIENT CROWS NEST RESOURCES

AREA NORTH SIBUR

COUNTRY CANADA

DATE LOGGED 4 JULY 84

DEPTH 1-118

WELL NO. 4-0-1008

SECTION DATA

OPERATION DATA

EQUIPMENT AND RECORDING DATA

WELL NO. 4-0-1008

WELL NO. 4-0-1008

WELL NO. 4-0-1008

WELL NO. 4-0-1008

WELL NO. 4-0-1008

WELL NO. 4-0-1008

WELL NO. 4-0-1008

WELL NO. 4-0-1008

WELL NO. 4-0-1008

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WELL NO. 4-0-1008

WELL NO. 4-0-1008

WELL NO. 4-0-1008

WELL NO. 4-0-1008

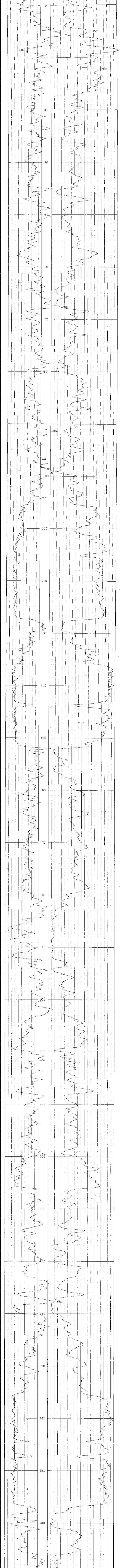
WELL NO. 4-0-1008

WELL NO. 4-0-1008

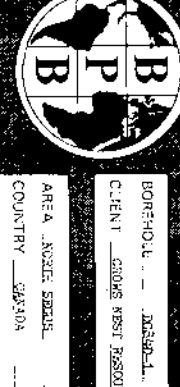
WELL NO. 4-0-1008

WELL NO. 4-0-1008

WELL NO. 4-0-1008



BO. Series 2074, 81/10/8 1/23



BORHOLOL - MALIBU
 CLIENT - GROUNDWATER RESOURCES LTD.
 AREA - NORTH ESSUIS
 COUNTRY - CAMBODIA
 DATE LOGGED - 11/12/2008

SEAM THICKNESS LOG

GENERAL DATA
 OPERATOR DATA
 EQUIPMENT AND RECORDING DATA

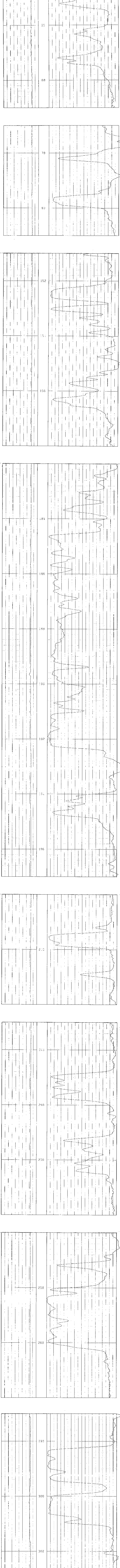
SONDE TYPE
 COMINATION
 LOG SUFFI
 CALIPER
 REMARKS

SEAM THICKNESS LOG INTERVALS

FROM	TO	THICKNESS
1.1	2.1	2.1
2.1	3.1	1.0
3.1	4.1	1.0
4.1	5.1	1.0
5.1	6.1	1.0
6.1	7.1	1.0
7.1	8.1	1.0
8.1	9.1	1.0
9.1	10.1	1.0
10.1	11.1	1.0
11.1	12.1	1.0
12.1	13.1	1.0
13.1	14.1	1.0
14.1	15.1	1.0
15.1	16.1	1.0
16.1	17.1	1.0
17.1	18.1	1.0
18.1	19.1	1.0
19.1	20.1	1.0
20.1	21.1	1.0
21.1	22.1	1.0
22.1	23.1	1.0
23.1	24.1	1.0
24.1	25.1	1.0
25.1	26.1	1.0
26.1	27.1	1.0
27.1	28.1	1.0
28.1	29.1	1.0
29.1	30.1	1.0
30.1	31.1	1.0
31.1	32.1	1.0
32.1	33.1	1.0
33.1	34.1	1.0
34.1	35.1	1.0
35.1	36.1	1.0
36.1	37.1	1.0
37.1	38.1	1.0
38.1	39.1	1.0
39.1	40.1	1.0
40.1	41.1	1.0
41.1	42.1	1.0
42.1	43.1	1.0
43.1	44.1	1.0
44.1	45.1	1.0
45.1	46.1	1.0
46.1	47.1	1.0
47.1	48.1	1.0
48.1	49.1	1.0
49.1	50.1	1.0
50.1	51.1	1.0
51.1	52.1	1.0
52.1	53.1	1.0
53.1	54.1	1.0
54.1	55.1	1.0
55.1	56.1	1.0
56.1	57.1	1.0
57.1	58.1	1.0
58.1	59.1	1.0
59.1	60.1	1.0
60.1	61.1	1.0
61.1	62.1	1.0
62.1	63.1	1.0
63.1	64.1	1.0
64.1	65.1	1.0
65.1	66.1	1.0
66.1	67.1	1.0
67.1	68.1	1.0
68.1	69.1	1.0
69.1	70.1	1.0
70.1	71.1	1.0
71.1	72.1	1.0
72.1	73.1	1.0
73.1	74.1	1.0
74.1	75.1	1.0
75.1	76.1	1.0
76.1	77.1	1.0
77.1	78.1	1.0
78.1	79.1	1.0
79.1	80.1	1.0
80.1	81.1	1.0
81.1	82.1	1.0
82.1	83.1	1.0
83.1	84.1	1.0
84.1	85.1	1.0
85.1	86.1	1.0
86.1	87.1	1.0
87.1	88.1	1.0
88.1	89.1	1.0
89.1	90.1	1.0
90.1	91.1	1.0
91.1	92.1	1.0
92.1	93.1	1.0
93.1	94.1	1.0
94.1	95.1	1.0
95.1	96.1	1.0
96.1	97.1	1.0
97.1	98.1	1.0
98.1	99.1	1.0
99.1	100.1	1.0

634

B P B SEAM THICKNESS LOG





CONTINUOUS VERTICALITY ANALYSIS

CLIENT_____

CROWS NEST RESOURCES

BOREHOLE_____

DG84D-1

AREA_____

NORTH SECUS

COUNTRY_____

CANADA

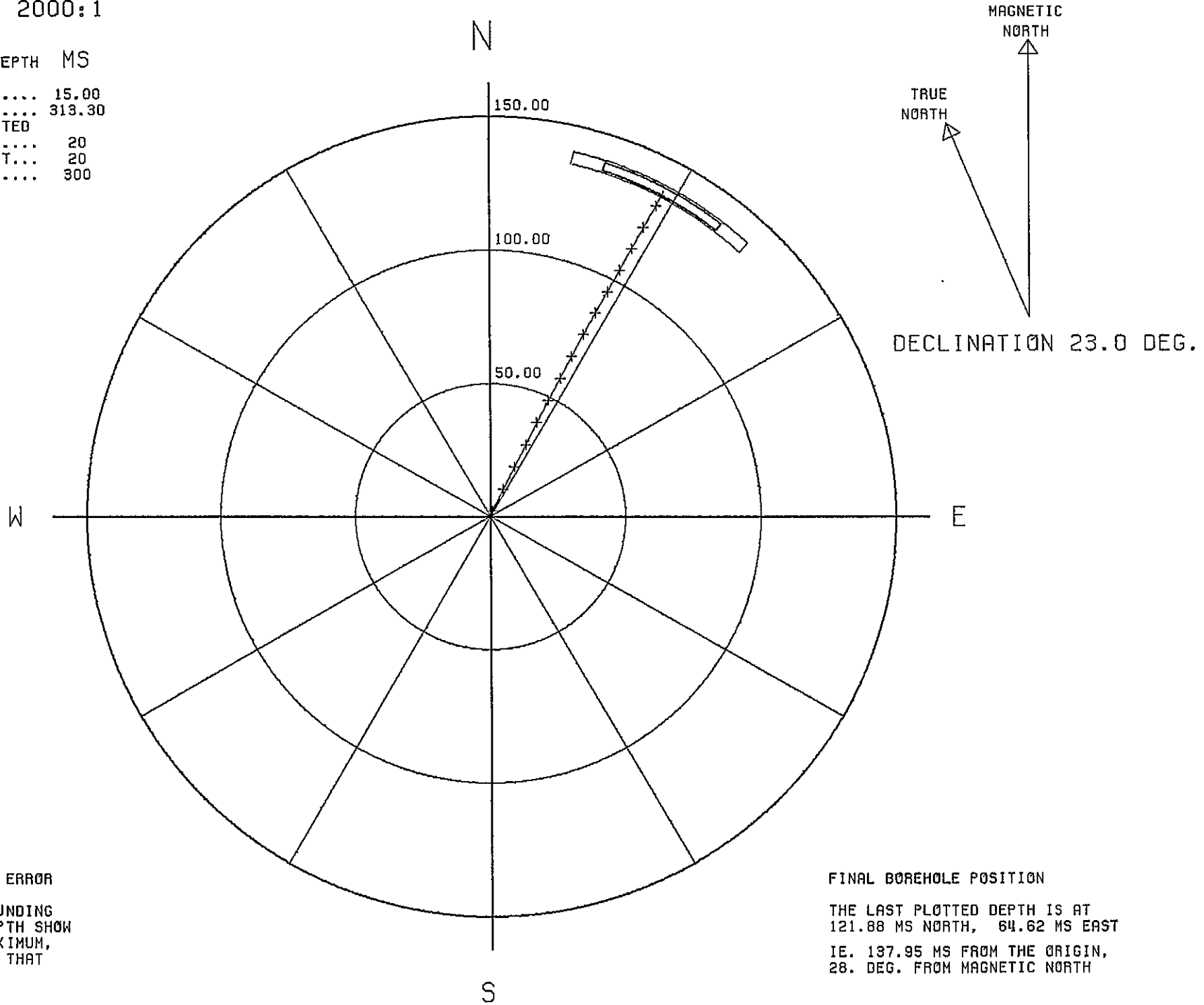
DATE PROCESSED..12-JUL-84
UPPER REFERENCE POINT....C.S.
LOWER REFERENCE POINT....T.D.

CROSS-SECTION

SCALE: 2000:1

ALL FIGURES IN LOG DEPTH MS

TARGET ORIGIN DEPTH.....	15.00
LAST PLOTTED DEPTH.....	313.30
DEPTH MARKERS ANNOTATED IN MULTIPLES OF.....	20
FIRST DEPTH MARKER AT...	20
LAST DEPTH MARKER AT....	300



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 121.88 MS NORTH, 64.62 MS EAST
IE. 137.95 MS FROM THE ORIGIN,
28. DEG. FROM MAGNETIC NORTH

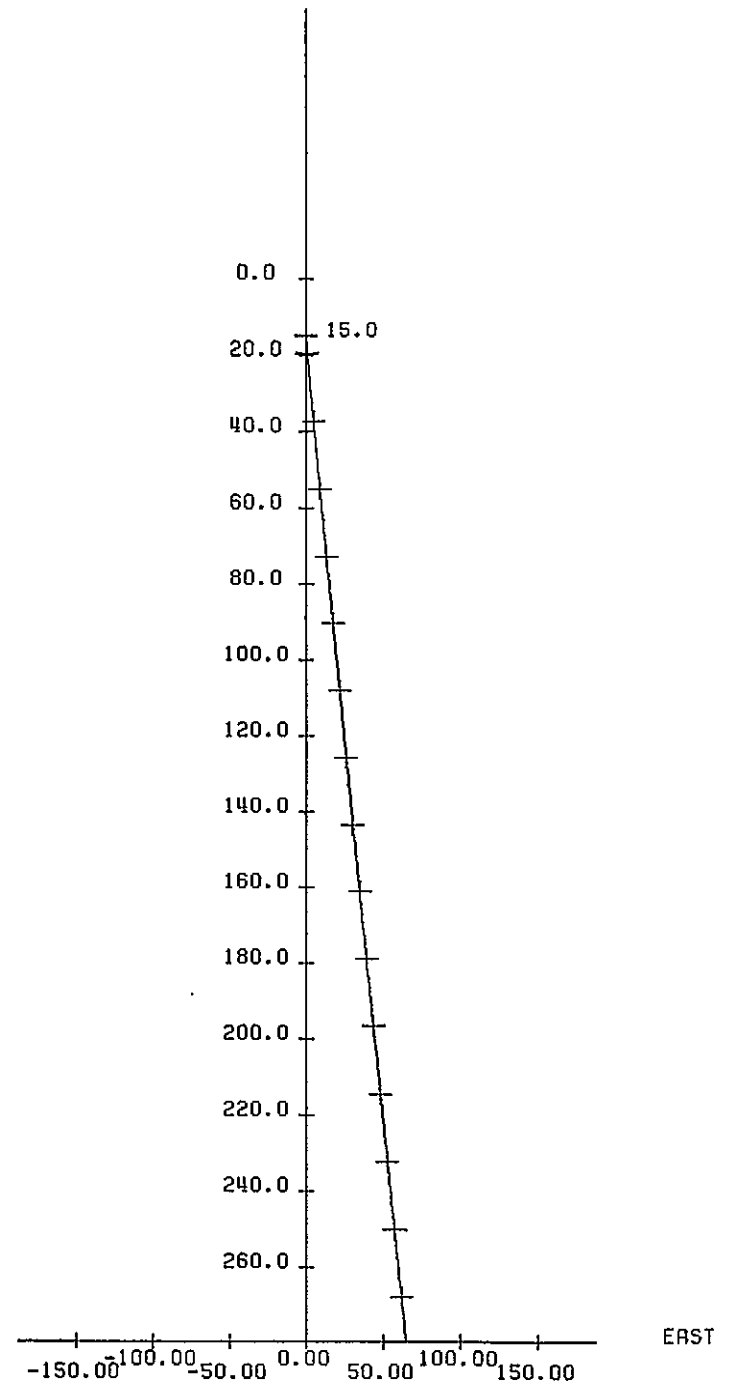
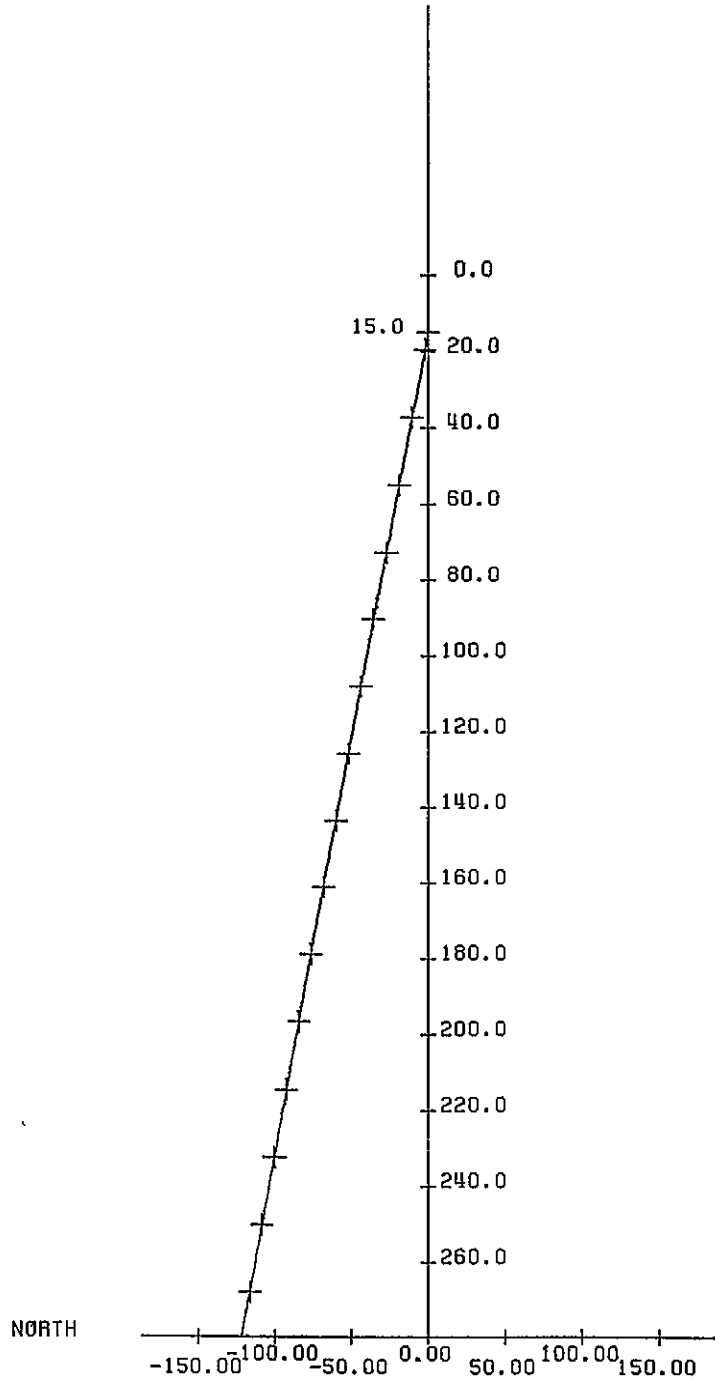
N-S SECTION

(TRUE DEPTH VS. DISPLACEMENT)

W-E SECTION

VERTICAL SCALE 2000 : 1

MARKERS ANNOTATED AS ABOVE

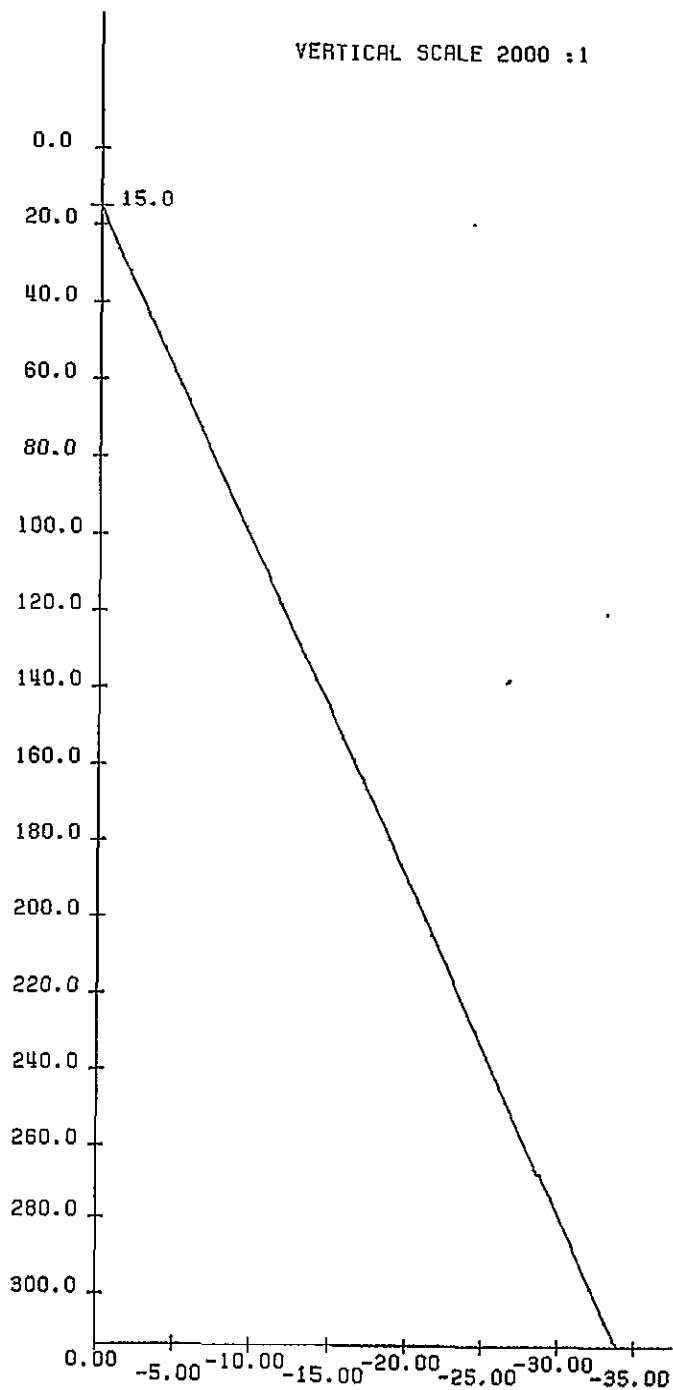


HORIZONTAL SCALE 5000 : 1

DEPTH CORRECTION ANALYSIS

LOG DEPTH

VERTICAL SCALE 2000 : 1



CORRECTION FOR TRUE DEPTH
SCALE 500 : 1

DEPTH'S:		DEPTH'S:		DEPTH'S:	
LOG	TRUE	LOG	TRUE	LOG	TRUE
16.00	15.90	156.00	139.75	296.00	264.07
18.00	17.70	158.00	141.52	298.00	265.84
20.00	19.47	160.00	143.29	300.00	267.61
22.00	21.27	162.00	145.06	302.00	269.39
24.00	23.04	164.00	146.83	304.00	271.16
26.00	24.82	166.00	148.60	306.00	272.93
28.00	26.62	168.00	150.37	308.00	274.70
30.00	28.39	170.00	152.14	310.00	276.47
32.00	30.16	172.00	153.91	312.00	278.24
34.00	31.92	174.00	155.68	314.00	280.09
36.00	33.69	176.00	157.46		
38.00	35.45	178.00	159.23		
40.00	37.21	180.00	161.00		
42.00	38.97	182.00	162.77		
44.00	40.74	184.00	164.54		
46.00	42.51	186.00	166.31		
48.00	44.27	188.00	168.08		
50.00	46.03	190.00	169.85		
52.00	47.80	192.00	171.62		
54.00	49.57	194.00	173.40		
56.00	51.34	196.00	175.18		
58.00	53.10	198.00	176.96		
60.00	54.87	200.00	178.73		
62.00	56.64	202.00	180.51		
64.00	58.41	204.00	182.29		
66.00	60.17	206.00	184.07		
68.00	61.95	208.00	185.85		
70.00	63.73	210.00	187.63		
72.00	65.53	212.00	189.40		
74.00	67.29	214.00	191.18		
76.00	69.05	216.00	192.96		
78.00	70.83	218.00	194.74		
80.00	72.59	220.00	196.51		
82.00	74.36	222.00	198.29		
84.00	76.13	224.00	200.07		
86.00	77.89	226.00	201.85		
88.00	79.65	228.00	203.63		
90.00	81.42	230.00	205.40		
92.00	83.19	232.00	207.18		
94.00	84.96	234.00	208.96		
96.00	86.72	236.00	210.74		
98.00	88.49	238.00	212.52		
100.00	90.25	240.00	214.30		
102.00	92.02	242.00	216.08		
104.00	93.79	244.00	217.86		
106.00	95.56	246.00	219.64		
108.00	97.33	248.00	221.42		
110.00	99.09	250.00	223.20		
112.00	100.86	252.00	224.98		
114.00	102.63	254.00	226.76		
116.00	104.40	256.00	228.54		
118.00	106.17	258.00	230.32		
120.00	107.94	260.00	232.09		
122.00	109.71	262.00	233.87		
124.00	111.48	264.00	235.65		
126.00	113.25	266.00	237.42		
128.00	115.01	268.00	239.20		
130.00	116.78	270.00	240.98		
132.00	118.55	272.00	242.75		
134.00	120.32	274.00	244.53		
136.00	122.08	276.00	246.31		
138.00	123.85	278.00	248.09		
140.00	125.62	280.00	249.86		
142.00	127.38	282.00	251.64		
144.00	129.15	284.00	253.42		
146.00	130.91	286.00	255.19		
148.00	132.68	288.00	256.97		
150.00	134.45	290.00	258.75		
152.00	136.22	292.00	260.52		
154.00	137.98	294.00	262.30		

Verticality Data Listing

Date processed: 12-JUL-84

All co-ordinates with respect to True 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	brng radius	brng radius		
16.00	15.90	21.1	34.	0.37	0.24	33.	0.44	33.	0.45	33.	0.43	33.	0.44	33.	0.43
18.00	17.70	26.8	50.	0.96	0.88	42.	1.30	42.	1.32	42.	1.28	42.	1.32	42.	1.28
20.00	19.47	25.3	50.	1.55	1.58	46.	2.21	46.	2.25	46.	2.17	46.	2.24	46.	2.19
22.00	21.27	28.2	49.	2.14	2.21	46.	3.08	46.	3.13	46.	3.02	46.	3.11	46.	3.04
24.00	23.04	27.5	51.	2.75	2.92	47.	4.01	47.	4.08	47.	3.94	47.	4.06	47.	3.96
26.00	24.82	24.6	47.	3.33	3.62	47.	4.92	47.	5.01	47.	4.84	47.	4.98	47.	4.87
28.00	26.62	27.9	49.	3.91	4.24	47.	5.77	47.	5.87	47.	5.67	47.	5.84	47.	5.70
30.00	28.39	28.0	50.	4.53	4.95	48.	6.71	48.	6.82	48.	6.59	48.	6.78	48.	6.63
32.00	30.16	27.8	49.	5.14	5.66	48.	7.64	48.	7.77	48.	7.51	48.	7.73	48.	7.55
34.00	31.92	28.0	49.	5.75	6.37	48.	8.58	48.	8.73	48.	8.43	48.	8.68	48.	8.48
36.00	33.69	28.0	50.	6.36	7.08	48.	9.52	48.	9.68	48.	9.36	48.	9.63	48.	9.41
38.00	35.45	28.0	48.	6.99	7.79	48.	10.46	48.	10.64	48.	10.28	48.	10.58	48.	10.34
40.00	37.21	28.1	49.	7.62	8.49	48.	11.41	48.	11.60	48.	11.21	48.	11.54	48.	11.28
42.00	38.97	27.9	49.	8.26	9.19	48.	12.36	48.	12.57	48.	12.15	48.	12.50	48.	12.22
44.00	40.74	27.9	50.	8.87	9.90	48.	13.29	48.	13.52	48.	13.07	48.	13.44	48.	13.14
46.00	42.51	28.0	49.	9.48	10.62	48.	14.23	48.	14.47	48.	13.99	48.	14.39	48.	14.07
48.00	44.27	28.6	47.	10.09	11.33	48.	15.17	48.	15.42	48.	14.91	48.	15.34	48.	15.00
50.00	46.03	27.6	50.	10.73	12.03	48.	16.12	48.	16.39	48.	15.85	48.	16.30	48.	15.94
52.00	47.80	27.5	50.	11.33	12.74	48.	17.05	48.	17.33	48.	16.76	48.	17.24	48.	16.86
54.00	49.57	27.9	50.	11.93	13.45	48.	17.98	48.	18.28	48.	17.68	48.	18.18	48.	17.78
56.00	51.34	28.4	48.	12.54	14.17	48.	18.92	48.	19.24	48.	18.60	48.	19.13	48.	18.71
58.00	53.10	27.9	50.	13.15	14.88	49.	19.86	49.	20.19	49.	19.53	49.	20.08	49.	19.64
60.00	54.87	27.9	50.	13.75	15.60	49.	20.79	49.	21.14	49.	20.45	49.	21.03	49.	20.56
62.00	56.64	27.9	50.	14.35	16.31	49.	21.73	49.	22.09	49.	21.37	49.	21.97	49.	21.49
64.00	58.41	28.0	50.	14.96	17.03	49.	22.67	49.	23.04	49.	22.29	49.	22.92	49.	22.41
66.00	60.17	27.7	50.	15.56	17.75	49.	23.60	49.	24.00	49.	23.21	49.	23.87	49.	23.34
68.00	61.95	27.9	51.	16.15	18.46	49.	24.53	49.	24.94	49.	24.12	49.	24.80	49.	24.26
70.00	63.73	19.1	51.	16.72	19.16	49.	25.43	49.	25.85	49.	25.00	49.	25.71	49.	25.14
72.00	65.53	28.5	49.	17.26	19.79	49.	26.26	49.	26.70	49.	25.82	49.	26.55	49.	25.97
74.00	67.29	27.9	49.	17.88	20.50	49.	27.20	49.	27.65	49.	26.74	49.	27.50	49.	26.90
76.00	69.06	27.9	50.	18.49	21.21	49.	28.14	49.	28.61	49.	27.67	49.	28.45	49.	27.83
78.00	70.83	28.0	49.	19.10	21.92	49.	29.08	49.	29.56	49.	28.59	49.	29.40	49.	28.75
80.00	72.59	28.3	49.	19.72	22.63	49.	30.02	49.	30.52	49.	29.52	49.	30.35	49.	29.69
82.00	74.36	27.9	50.	20.33	23.35	49.	30.96	49.	31.47	49.	30.44	49.	31.30	49.	30.61
84.00	76.12	28.1	50.	20.94	24.07	49.	31.90	49.	32.43	49.	31.37	49.	32.26	49.	31.55
86.00	77.89	27.9	49.	21.55	24.78	49.	32.84	49.	33.38	49.	32.29	49.	33.20	49.	32.47
88.00	79.65	27.9	50.	22.15	25.50	49.	33.77	49.	34.33	49.	33.21	49.	34.15	49.	33.40
90.00	81.42	27.9	49.	22.75	26.21	49.	34.71	49.	35.28	49.	34.13	49.	35.09	49.	34.32
92.00	83.19	28.2	49.	23.36	26.93	49.	35.64	49.	36.24	49.	35.05	49.	36.04	49.	35.25
94.00	84.96	27.9	51.	23.96	27.64	49.	36.58	49.	37.19	49.	35.97	49.	36.99	49.	36.18
96.00	86.72	27.9	50.	24.58	28.36	49.	37.53	49.	38.15	49.	36.90	49.	37.94	49.	37.11
98.00	88.49	27.9	51.	25.18	29.08	49.	38.46	49.	39.10	49.	37.82	49.	38.89	49.	38.04
100.00	90.25	27.6	50.	25.79	29.79	49.	39.41	49.	40.05	49.	38.75	49.	39.84	49.	38.97
102.00	92.02	27.4	51.	26.38	30.51	49.	40.33	49.	41.00	49.	39.66	49.	40.78	49.	39.88
104.00	93.79	27.9	51.	26.98	31.22	49.	41.27	49.	41.95	49.	40.58	49.	41.72	49.	40.81
106.00	95.56	27.7	50.	27.59	31.94	49.	42.20	49.	42.90	49.	41.50	49.	42.67	49.	41.73
108.00	97.33	27.9	50.	28.19	32.65	49.	43.14	49.	43.85	49.	42.42	49.	43.61	49.	42.66
110.00	99.09	27.9	50.	28.80	33.37	49.	44.08	49.	44.81	49.	43.34	49.	44.56	49.	43.59
112.00	100.86	27.9	49.	29.40	34.09	49.	45.01	49.	45.76	49.	44.26	49.	45.51	49.	44.51
114.00	102.63	27.7	50.	30.00	34.80	49.	45.95	49.	46.71	49.	45.18	49.	46.45	49.	45.44

Verticality Data Listing
All co-ordinates with respect to True North

Date processed: 12-JUL-84

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		
116.00	104.40	27.8	51.	30.59	35.52	49.	46.88	49.	47.65	49.	46.10	49.	47.39	49.	46.36
118.00	106.17	28.0	50.	31.19	36.23	49.	47.81	49.	48.60	49.	47.01	49.	48.34	49.	47.28
120.00	107.94	27.8	50.	31.80	36.94	49.	48.74	49.	49.55	49.	47.93	49.	49.28	49.	48.20
122.00	109.71	27.9	50.	32.39	37.66	49.	49.67	49.	50.49	49.	48.84	49.	50.22	49.	49.12
124.00	111.48	27.5	51.	32.99	38.37	49.	50.60	49.	51.44	49.	49.76	49.	51.16	49.	50.04
126.00	113.25	28.7	49.	33.59	39.08	49.	51.53	49.	52.39	49.	50.67	49.	52.10	49.	50.96
128.00	115.01	27.5	51.	34.19	39.81	49.	52.47	49.	53.34	49.	51.60	49.	53.05	49.	51.89
130.00	116.78	27.2	52.	34.78	40.53	49.	53.41	49.	54.29	49.	52.52	49.	54.00	49.	52.81
132.00	118.55	27.7	51.	35.36	41.25	49.	54.33	49.	55.23	49.	53.43	49.	54.93	49.	53.73
134.00	120.32	27.9	51.	35.95	41.98	49.	55.27	49.	56.18	49.	54.35	49.	55.88	49.	54.66
136.00	122.08	27.8	52.	36.55	42.71	49.	56.21	49.	57.14	49.	55.28	49.	56.83	49.	55.59
138.00	123.85	27.5	52.	37.14	43.44	49.	57.15	49.	58.09	49.	56.20	49.	57.78	49.	56.51
140.00	125.62	28.4	50.	37.73	44.17	49.	58.09	49.	59.05	49.	57.12	49.	58.73	49.	57.44
142.00	127.38	27.9	51.	38.33	44.89	50.	59.03	50.	60.01	50.	58.05	50.	59.69	50.	58.38
144.00	129.15	27.9	51.	38.92	45.62	50.	59.97	50.	60.96	50.	58.97	50.	60.63	50.	59.31
146.00	130.91	27.8	51.	39.51	46.35	50.	60.90	50.	61.91	50.	59.89	50.	61.58	50.	60.23
148.00	132.68	28.3	50.	40.10	47.08	50.	61.84	50.	62.87	50.	60.81	50.	62.52	50.	61.16
150.00	134.45	27.8	51.	40.69	47.80	50.	62.78	50.	63.81	50.	61.73	50.	63.47	50.	62.08
152.00	136.22	28.0	51.	41.28	48.53	50.	63.71	50.	64.77	50.	62.65	50.	64.41	50.	63.01
154.00	137.98	27.9	51.	41.86	49.26	50.	64.65	50.	65.72	50.	63.57	50.	65.36	50.	63.93
156.00	139.75	28.0	51.	42.45	49.99	50.	65.58	50.	66.66	50.	64.49	50.	66.30	50.	64.85
158.00	141.52	27.6	52.	43.03	50.71	50.	66.51	50.	67.61	50.	65.41	50.	67.25	50.	65.78
160.00	143.29	28.1	51.	43.61	51.44	50.	67.44	50.	68.56	50.	66.32	50.	68.19	50.	66.70
162.00	145.06	27.7	52.	44.19	52.17	50.	68.38	50.	69.51	50.	67.24	50.	69.13	50.	67.62
164.00	146.83	27.8	51.	44.78	52.90	50.	69.31	50.	70.45	50.	68.15	50.	70.07	50.	68.54
166.00	148.60	27.6	52.	45.36	53.63	50.	70.24	50.	71.40	50.	69.07	50.	71.01	50.	69.46
168.00	150.37	27.6	51.	45.93	54.36	50.	71.17	50.	72.34	50.	69.99	50.	71.95	50.	70.38
170.00	152.14	27.8	52.	46.51	55.09	50.	72.10	50.	73.29	50.	70.90	50.	72.89	50.	71.30
172.00	153.91	27.5	52.	47.09	55.82	50.	73.03	50.	74.23	50.	71.81	50.	73.83	50.	72.22
174.00	155.68	27.4	52.	47.66	56.54	50.	73.95	50.	75.18	50.	72.72	50.	74.77	50.	73.13
176.00	157.46	27.5	52.	48.24	57.27	50.	74.88	50.	76.12	50.	73.64	50.	75.71	50.	74.05
178.00	159.23	27.5	52.	48.81	58.00	50.	75.81	50.	77.06	50.	74.55	50.	76.65	50.	74.97
180.00	161.00	27.7	52.	49.39	58.73	50.	76.74	50.	78.01	50.	75.46	50.	77.59	50.	75.89
182.00	162.77	27.5	52.	49.96	59.46	50.	77.67	50.	78.95	50.	76.37	50.	78.52	50.	76.81
184.00	164.54	28.0	51.	50.54	60.19	50.	78.59	50.	79.89	50.	77.29	50.	79.46	50.	77.72
186.00	166.31	27.7	52.	51.11	60.92	50.	79.52	50.	80.83	50.	78.20	50.	80.40	50.	78.64
188.00	168.08	27.6	51.	51.69	61.64	50.	80.45	50.	81.78	50.	79.11	50.	81.34	50.	79.56
190.00	169.85	27.6	52.	52.27	62.37	50.	81.38	50.	82.72	50.	80.03	50.	82.28	50.	80.48
192.00	171.62	27.7	51.	52.85	63.10	50.	82.31	50.	83.67	50.	80.94	50.	83.22	50.	81.40
194.00	173.40	27.5	52.	53.42	63.83	50.	83.23	50.	84.61	50.	81.85	50.	84.15	50.	82.31
196.00	175.18	27.2	52.	53.98	64.55	50.	84.15	50.	85.54	50.	82.75	50.	85.08	50.	83.21
198.00	176.96	27.3	51.	54.55	65.27	50.	85.06	50.	86.47	50.	83.65	50.	86.00	50.	84.12
200.00	178.73	27.2	52.	55.11	65.99	50.	85.98	50.	87.40	50.	84.54	50.	86.93	50.	85.02
202.00	180.51	27.2	52.	55.67	66.71	50.	86.89	50.	88.33	50.	85.44	50.	87.85	50.	85.93
204.00	182.29	27.0	53.	56.23	67.43	50.	87.80	50.	89.26	50.	86.34	50.	88.77	50.	86.83
206.00	184.07	27.6	52.	56.79	68.15	50.	88.71	50.	90.18	50.	87.24	50.	89.69	50.	87.73
208.00	185.85	27.4	52.	57.36	68.87	50.	89.63	50.	91.11	50.	88.14	50.	90.62	50.	88.63
210.00	187.63	27.6	52.	57.92	69.60	50.	90.55	50.	92.05	50.	89.04	50.	91.55	50.	89.54
212.00	189.40	27.2	52.	58.48	70.33	50.	91.46	50.	92.98	50.	89.94	50.	92.47	50.	90.45
214.00	191.18	27.2	53.	59.04	71.05	50.	92.38	50.	93.91	50.	90.84	50.	93.40	50.	91.35

Verticality Data Listing

All co-ordinates with respect to True 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				
216.00	192.96	27.1	53.	59.59	71.78	50.	93.29	50.	94.84	50.	91.74	50.	94.33	50.	92.26
218.00	194.74	27.2	52.	60.15	72.50	50.	94.21	50.	95.77	50.	92.64	50.	95.25	50.	93.16
220.00	196.51	27.6	52.	60.71	73.23	50.	95.13	50.	96.70	50.	93.54	50.	96.18	50.	94.07
222.00	198.29	27.3	53.	61.27	73.96	50.	96.04	50.	97.64	50.	94.44	50.	97.10	50.	94.97
224.00	200.07	27.4	53.	61.82	74.69	50.	96.96	50.	98.57	50.	95.34	50.	98.03	50.	95.88
226.00	201.85	27.2	53.	62.38	75.42	50.	97.87	50.	99.50	50.	96.24	50.	98.95	50.	96.78
228.00	203.63	27.3	53.	62.94	76.15	50.	98.79	50.	100.43	50.	97.14	50.	99.88	50.	97.69
230.00	205.40	27.4	53.	63.49	76.88	50.	99.71	50.	101.36	50.	98.04	50.	100.81	50.	98.60
232.00	207.18	27.4	52.	64.05	77.61	50.	100.63	50.	102.30	50.	98.95	50.	101.74	50.	99.51
234.00	208.96	27.3	52.	64.61	78.33	50.	101.54	50.	103.22	50.	99.84	50.	102.66	50.	100.41
236.00	210.74	27.2	52.	65.16	79.06	51.	102.45	51.	104.15	51.	100.74	51.	103.59	51.	101.31
238.00	212.52	27.0	52.	65.71	79.78	51.	103.36	51.	105.08	51.	101.64	51.	104.51	51.	102.21
240.00	214.30	27.2	51.	66.27	80.50	51.	104.27	51.	106.00	51.	102.53	51.	105.43	51.	103.11
242.00	216.08	27.2	52.	66.83	81.22	51.	105.18	51.	106.93	51.	103.42	51.	106.35	51.	104.01
244.00	217.86	26.9	52.	67.38	81.94	51.	106.09	51.	107.85	51.	104.31	51.	107.26	51.	104.91
246.00	219.64	27.2	52.	67.94	82.66	51.	107.00	51.	108.78	51.	105.21	51.	108.18	51.	105.80
248.00	221.42	27.0	52.	68.50	83.38	51.	107.91	51.	109.70	51.	106.10	51.	109.10	51.	106.70
250.00	223.20	27.0	52.	69.06	84.10	51.	108.82	51.	110.63	51.	107.00	51.	110.03	51.	107.61
252.00	224.98	27.3	52.	69.62	84.82	51.	109.73	51.	111.56	51.	107.90	51.	110.95	51.	108.51
254.00	226.76	27.0	52.	70.18	85.53	51.	110.64	51.	112.49	51.	108.79	51.	111.87	51.	109.41
256.00	228.54	27.4	50.	70.75	86.25	51.	111.56	51.	113.42	51.	109.69	51.	112.80	51.	110.32
258.00	230.32	27.4	51.	71.31	86.98	51.	112.48	51.	114.35	51.	110.59	51.	113.73	51.	111.22
260.00	232.09	27.6	51.	71.88	87.70	51.	113.39	51.	115.28	51.	111.50	51.	114.65	51.	112.13
262.00	233.87	27.3	51.	72.46	88.42	51.	114.31	51.	116.22	51.	112.40	51.	115.58	51.	113.04
264.00	235.65	27.5	52.	73.02	89.14	51.	115.23	51.	117.15	51.	113.31	51.	116.51	51.	113.95
266.00	237.42	27.4	51.	73.59	89.86	51.	116.15	51.	118.09	51.	114.21	51.	117.44	51.	114.86
268.00	239.20	27.4	52.	74.16	90.58	51.	117.07	51.	119.02	51.	115.11	51.	118.37	51.	115.76
270.00	240.98	27.0	53.	74.73	91.31	51.	117.99	51.	119.95	51.	116.01	51.	119.30	51.	116.67
272.00	242.75	27.0	52.	75.29	92.03	51.	118.90	51.	120.89	51.	116.91	51.	120.23	51.	117.58
274.00	244.53	27.2	53.	75.85	92.75	51.	119.82	51.	121.82	51.	117.82	51.	121.15	51.	118.48
276.00	246.31	26.9	53.	76.41	93.48	51.	120.73	51.	122.75	51.	118.71	51.	122.08	51.	119.39
278.00	248.09	27.1	52.	76.97	94.20	51.	121.65	51.	123.68	51.	119.61	51.	123.00	51.	120.29
280.00	249.86	27.1	53.	77.54	94.92	51.	122.57	51.	124.61	51.	120.52	51.	123.93	51.	121.20
282.00	251.64	27.2	52.	78.10	95.65	51.	123.48	51.	125.54	51.	121.41	51.	124.86	51.	122.11
284.00	253.42	27.6	52.	78.66	96.37	51.	124.40	51.	126.48	51.	122.32	51.	125.79	51.	123.01
286.00	255.19	27.4	52.	79.22	97.10	51.	125.32	51.	127.41	51.	123.22	51.	126.72	51.	123.92
288.00	256.97	27.3	53.	79.78	97.84	51.	126.24	51.	128.34	51.	124.13	51.	127.64	51.	124.83
290.00	258.75	27.4	53.	80.33	98.57	51.	127.16	51.	129.28	51.	125.03	51.	128.57	51.	125.74
292.00	260.52	27.6	53.	80.89	99.31	51.	128.08	51.	130.22	51.	125.93	51.	129.50	51.	126.65
294.00	262.30	27.4	53.	81.44	100.04	51.	129.00	51.	131.15	51.	126.84	51.	130.44	51.	127.56
296.00	264.07	27.6	53.	82.00	100.78	51.	129.93	51.	132.09	51.	127.75	51.	131.37	51.	128.48
298.00	265.84	27.8	52.	82.57	101.51	51.	130.85	51.	133.04	51.	128.66	51.	132.31	51.	129.39
300.00	267.61	27.7	52.	83.14	102.25	51.	131.78	51.	133.98	51.	129.57	51.	133.25	51.	130.31
302.00	269.39	27.7	53.	83.70	102.98	51.	132.71	51.	134.92	51.	130.48	51.	134.18	51.	131.23
304.00	271.16	27.5	52.	84.27	103.71	51.	133.63	51.	135.86	51.	131.40	51.	135.12	51.	132.14
306.00	272.93	27.7	52.	84.85	104.45	51.	134.57	51.	136.81	51.	132.31	51.	136.06	51.	133.06
308.00	274.70	28.0	52.	85.42	105.18	51.	135.50	51.	137.75	51.	133.23	51.	137.00	51.	133.98
310.00	276.47	28.0	51.	85.99	105.91	51.	136.43	51.	138.70	51.	134.14	51.	137.94	51.	134.90
312.00	278.24	27.9	52.	86.57	106.64	51.	137.36	51.	139.65	51.	135.06	51.	138.89	51.	135.83
313.30	279.3910098.4	27.9	7257.	86.94	107.11	51.	137.95	51.	140.25	51.	135.64	51.	139.49	51.	136.41

BPB VERTICALITY ANALYSIS
INTERPRETATION NOTES

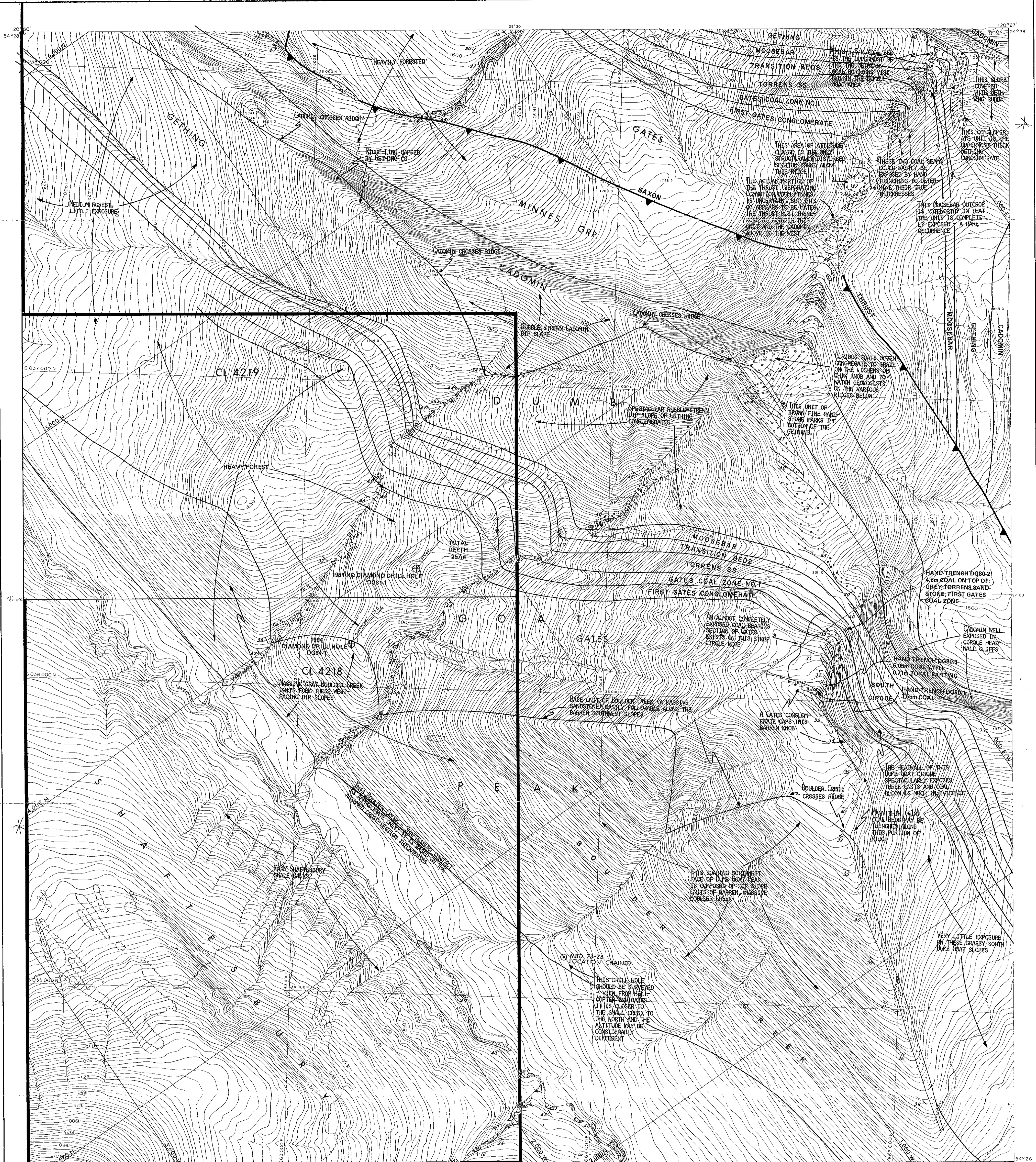
1. All plotted output is automatically scaled to obtain the best visual effect within the physical space available. The maximum scales being 50000:1 (metric) & 48000:1 (imperial), and the minimum 1:1.
2. The analysis is derived by integrating 10 cm./6" sampled data down the borehole. However the listing 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



Cross Section
SM 2 x 19

UTM CO-ORDINATES		
NORTHING	EASTING	ELEVATION
DG81-1 6 036 395 20	663 378 34	1689 99
DG84-1 6 036 115 00	663 170 00	1688 00

LEGEND

1978 Coal Licence Boundary
Existing Coal Licence Boundary
Improved road
Secondary road
Track or trail
Cul line
Free area
River
Stream
Intermittent stream
Swamp
Contours
Horizontal control
Vertical control
Spot elevation
Iron Pin

DATE OF PHOTOGRAPHY SEPTEMBER 1975 DATE OF SURVEY 1977-1978 DATE OF MAPPING 1977-1978

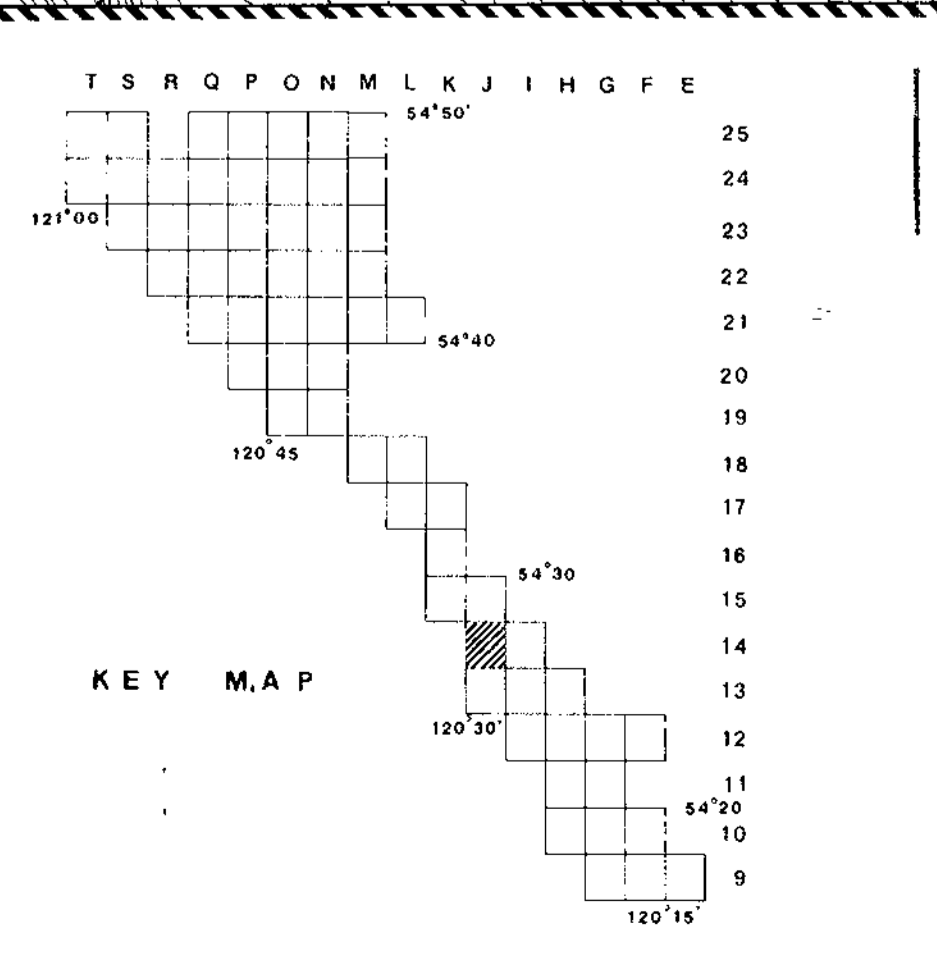
SURVEY NOTE

The Horizontal and Vertical Co ordinates were established by D. W. Watson B.C.L.S. using conventional and I.T.M. surveying methods. Horizontal and vertical co ordinates and elevations are derived from True Stratum Quasi-Universal Co-ordinates S.W. Minus North March Krusoe. All co ordinates referred to Universal Traverse Mercator Grid Zone 10. Elevations are above Mean Sea Level were established by trig leveling vertical angles being read at both ends of each course unidirectional.

LOWER CRETACEOUS	
Ksh	Shastanbury
Kcb	Boulder Creek
Ktg	Gates (includes overlying Transition Beds & Torrens Sandstone)
Kmb	Moosebar
Kgt	Getthing
Ked	Cadomin
JURASSIC - CRETACEOUS	
JKm	Minnes Group (undivided)

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
Patched, indeterminate outcrop
Outcrop with exposed contact
Chain-and-compass line (tick marks are stations) with outcrop sketched to extent 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)

NOTE: See Report for Legend of Abbreviations



Scale 1:5000

Crows Nest Resources Limited
EXPLORATION

PR Secus Mtn. 8417(PA) 72

SECUS MOUNTAIN PROJECT
NE BRITISH COLUMBIA

NTS-93 UTM_ZONE 10 J14
AUTHOR D BELL, A WHITE SCALE 1:2000 ENCLOSURE No APPENDIX 3
DATE 80_08_22 REVISED 84-12 A WHITE DRAWING No SM2U08
To Accompany

634

SECUS CORE DESCRIPTION

11/13/84

DRILL HOLE # DGB4D-1

LOG DATE 84/07/00
EXAMINED BY A. WHITE

TOP	BASE	SEAM	SAMPLE NUMBER	THICK	% REC	MAJOR	MINOR LITHOLOGY	REMARKS	DEPTH	C.B.A.
.00	9.53			9.53	0	OB		OVERBURDEN		
9.53	10.10			.57	0	COAL		SOFT; BRIGHT; BROKEN; LOWER 0.05M. .VERY DIRTY. SEPARATION WITH ROOF VISUAL? PHYSICAL: ? SEPARATION WITH FLOOR VISUAL: GOOD, PHYSICAL: GOOD.		
10.10	11.45			1.35	0	SS		MEDIUM GREY; FINE GRAINED TO MEDIUM GRAINED; COALY DEBRIS/WISPS IN LOWER 0.10M; TOP 0.15M MUDSTONE.	10.70	77
11.45	18.00			6.55	0	MDST		SHALEY; DARK GREY TO BLACK; MINOR COALY ZONES WITH IN. . . 0.05M AT 12.3M 0.20M AT 15.5M; 0.35M AT 16.95M.		
18.00	19.40			1.40	0	SS		LIGHT GREY; FINE GRAINED TO MEDIUM GRAINED; MINOR COAL DEBRIS; TOP 0.30M FINE GRAINED. . . DARK GREY; MUDSTONE RIP UP CLASTS AT 0.30M FROM BOTTOM.	18.60	74
19.40	38.40			19.00	0	SS	SILTSTONE INTERBEDDED	SEQUENCE BEST DESCRIBED AS MONOTONOUS AND NON-DISTINCTIVE; SS IS GREY AND FINE GRAINED; MINOR MUDSTONE INTERBEDS; SECTIONS OF PRIMARILY INTERBEDDED SILTSTONE/MUDSTONE COMMONLY BIOTURBATED; MINOR COALY/CARBONACEOUS DEBRIS IN MUDSTONE.	23.00 29.20 33.00 38.10	70 71 78 75

SECUS CORE DESCRIPTION

11/13/84

DRILL HOLE # DG84D-1

LOG DATE 84/07/00
EXAMINED BY A. WHITE

TOP	BASE	SEAM	SAMPLE NUMBER	THICK	% REC	MAJOR	MINOR LITHOLOGY	REMARKS	DEPTH	C.B.A.
38.40	45.00			6.60	0	SS		LIGHT TO MEDIUM GREY; FINE GRAINED; MINOR INTERBEDDED MUDSTONE; BIOTURBATED THROUGHOUT; BOTTOM CONTACT ABRUPT.	43.60	72
45.00	46.70			1.70	0	MDST		DARK GREY TO BLACK; MINOR COALY/CARBONACEOUS DEBRIS IN LOWER HALF OF INTERVAL; BOTTOM CONTACT ABRUPT.		
46.70	47.90			1.20	0	SS		FINE GRAINED; LIGHT GREY; FINELY LAMINATED; GRAIN SIZE DECREASES TO BASE OF UNIT.		
47.90	56.50			8.60	0	SLST		SILTSTONE WITH MUDSTONE INTERBEDS; DARK TO MEDIUM GREY; MUDDY AT MID UNIT COALY/CARBONACEOUS DEBRIS THROUGHOUT; TO BASE, GROVES TO FINE GRAINED SS; BEST DESCRIBED AS GRADATIONAL UNT.	53.00	72
56.50	59.00			2.50	0	SS		LIGHT GREY; MEDIUM GRAINED; MASSIVE; MINOR COALY/CARBONACEOUS DEBRIS THROUGHOUT.		
59.00	64.16			5.16	0	MDST		MUDSTONE/SILTSTONE; MEDIUM TO DARK GREY; GRADATIONAL FINE GRAINED SS (AT TOP) TO SILTSTONE TO MUDSTONE (AT BASE).		

SECUS CORE DESCRIPTION

11/13/84

DRILL HOLE # DG84D-1

LOG DATE 84/07/00
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TOP	BASE	SEAM	SAMPLE NUMBER	THICK	% REC	MAJOR	MINOR LITHOLOGY	REMARKS	DEPTH	C.B.A.
64.16	64.72			.56	0	COAL		RECOVERED: 0.56M; BRIGHT; CLEAN; SOMEWHAT HIGHER ASH AT TOP OF UNIT. SEPARATION WITH ROOF: VISUAL: FAIR; PHYSICAL: FAIR SEPARATION WITH FLOOR: VISUAL: POOR; PHYSICAL: POOR.		
64.72	65.44			.72	0	COAL	HIGH ASH COAL ZONE	BROKEN TO POWDERY; COALY MUDSTONE/DIRTY COAL/HIGH ASH COAL MIXED.		
65.44	66.12			.68	0	SLST		RECOVERED: 0.64M; CARBONACEOUS; DARK GREY; MASSIVE.		
66.12	66.42			.30	0	COAL		SHALE; RECOVERED: 0.28M; MINOR (0.05M) CLEAN COAL TO BASE.		
66.42	67.12			.70	0	SH	CARBONACEOUS	MEDIUM GREY; SOFT; FISSILE; COALY DEBRIS IN LOWER 0.15M		
67.12	67.46			.34	0	COAL		CLEAN; BRIGHT; HIGHER ASH AT MID INTERVAL.		
67.46	68.43			.97	0	COAL	MUDSTONE	DARK GREY; MASSIVE; GRADATIONAL UNIT; POOR CONTACTS AT ROOF AND FLOOR.		
68.43	70.70			2.27	0	SS		MEDIUM GREY; FINE GRAINED TO MEDIUM; 'STICK CORE'; VERY MINOR CARBONACEOUS DEBRIS.		
70.70	79.50			8.80	0	SLST	MUDSTONE	SILTSTONE/MUDSTONE WITH MINOR	71.40	80

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DRILL HOLE # DG84D-1

LOG DATE 84/07/00
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TOP	BASE	SEAM	SAMPLE NUMBER	THICK	% REC	MAJOR	MINOR LITHOLOGY	REMARKS	DEPTH	C.B.A.
								FINE GRAINED SANDSTONE; 'GRADATIONAL' UNIT FINING DOWNWARD; MOSTLY FINELY LAMINATED; BIOTURBATION COMMON; MEDIUM GREY THROUGHOUT.	75.00 76.80 79.00	76 78 70
79.50	79.92			.42	0	COAL		RECOVERED: 0.42M; HARD; BRIGHT; BROKEN; SLICKENSIDED, CLEAN. SEPARATION WITH ROOF: VISUAL: POOR. PHYSICAL: FAIR. SEPARATION WITH FLOOR: VISUAL: FAIR PHYSICAL: FAIR.		
79.82	81.50			1.58	0	MDST		MEDIUM TO DARK GREY; MASSIVE; GRADING (TO BASE) TO SILTSTONE; CARBONACEOUS /COALY DEBRIS IN UPPER HALF OF UNIT.		
81.50	87.85			6.35	0	SS		LIGHT TO MEDIUM GREY; FINE GRAINED; MINOR SILTY AND MEDIUM GRAINED SANDY ZONES; OCCASIONAL COALY/CARBONACEOUS DEBRIS; MINOR BIOTURBATION; SLICKENSIDED SURFACE AT 86.2M	82.60 83.80 85.50 87.70	72 81 72 72
87.85	96.10			8.25	0	SLST		SILTSTONE WITH MINOR SANDSTONE INTERBEDDED; MEDIUM TO DARK GREY; MINOR	90.20	72

SECUS CORE DESCRIPTION

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DRILL HOLE # DGB4D-1

LOG DATE 84/07/00
EXAMINED BY A. WHITE

TOP	BASE	SEAM	SAMPLE NUMBER	THICK	% REC	MAJOR	MINOR LITHOLOGY	REMARKS	DEPTH	C.B.A.
87.85	96.10			8.25	0	SLST		COALY/CARBONACEOUS DEBRIS; MINOR BIOTURBATION NEAR TOP OF UNIT.	93.00	68
									95.30	72
96.10	100.05			3.95	0	MDST	SILTSTONE	SILTY AT TOP...GRAIN SINGLE SIZE DECREASING TO BASE OF UNIT; INCREASING CARBONACEOUS/COALY DEBRIS TO BASE; BOTTOM CONTACT ABRUPT.		
100.05	106.10			6.05	0	SS		WITH MINOR SILTSTONE; MEDIUM GREY; FINE GRAINED (WITH MINOR MEDIUM GRAINED); MINOR CARBONACEOUS DEBRIS; GOOD 'FINING UP' SEQUENCE AT 103.6 - 103.3M.	102.00	78
									103.70	77
106.10	113.40			7.30	0	SS		LIGHT GREY; MEDIUM GRAINED TO COARSE GRAINED; ABUNDANT COALY/CARBONACEOUS DEBRIS; COARSE GRAINED UNITS ARE MASSIVE AND CONTAIN MORE COALY MATERIAL; SMALL CONGLOMERITIC BAND AT 109.55 - 109.65M.	106.70	66
									110.70	76
113.40	127.90			14.50	0	CONG		INTERBEDS OF COARSE GRAINED SANDSTONE; MASSIVE; LIGHT GREY; CLAST TO 0.04M IN DIAMETER. WHITE, LIGHT GREEN, PINK, BLACK.. HARD; 'TIGHTLY PACKED' TO 'LOOSE PACK' WITH COARSE GRAINED SAND MATRIX; MINOR COALY/CARBONACEOUS WISPS/DEBRIS AT 115.-115.8M; SANDSTONE 6 SALT AND PEPPER TEXTURE; FRACTURED AT 125.6-126.3M (REF DRILL REPORT.. LOST		

SEGUS CORE DESCRIPTION

11/13/84

DRILL HOLE # DG84D-1

LOG DATE 84/08/00
EXAMINED BY A. WHITE

TOP	BASE	SEAM	SAMPLE NUMBER	THICK	% REC	MAJOR	MINOR LIHOLOGY	REMARKS	DEPTH	C.B.A.
								CIRCULATION); BOTTOM CONTACT TOP CONTACT GRADATIONAL.		
127.90	130.00			2.10	0	MDST		DARK GREY; MASSIVE; NO CARBONACEOUS DEBRIS EVIDENT EXCEPT AT BASE OF UNIT (...VERY MINOR); GRADATIONAL CONTACT AT BASE.		
130.00	132.46			2.46	0	SLST		MEDIUM TO DARK GREY; MOSTLY MASSIVE	131.60	67
									132.10	69
132.46	136.30			3.84	0	SS		LIGHT GREY; FINE TO MEDIUM GRAINED; SMALL PEBBLE BAND AT 133.6-134.0M; MINOR COALY WISPS WITH PYRITIC FILM AT 135.6M; FINELY LAMINATED THROUGHOUT	135.20	74
136.30	148.25			11.95	0	CONG		CLASTS TO 5CM IN DIAMETER; LIGHT PINK, WHITE, GREY... OVERALL GREY; COARSE GRAINED SANDSTONE MATRIX; CLASTS ROUNDED TO OBLONG; MASSIVE; NO BEDDING EVIDENT; BOTTOM CONTACT GRADATIONAL; DARK GREY TO BLACK MUDSTONE AT 139.8-140.2M.		
148.25	152.00			3.75	0	SS		WITH INTERBEDS OF PEBBLE CONGLOMERATE; MEDIUM TO COARSE GRAINED; LIGHT GREY; SALT AND PEPPER TEXTURE; COALY DEBRIS AT 151.6-152.0M	149.80	72
									151.60	55

SECUS CORE DESCRIPTION

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DRILL HOLE # DG84D-1

LOG DATE 84/08/00
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TOP	BASE	SEAM	SAMPLE NUMBER	THICK	% REC	MAJOR	MINOR LITHOLOGY	REMARKS	DEPTH	C.B.A.
152.00	158.20			6.20	0	MDST		WITH MINOR INTERBEDS OF SILTSTONE AND COAL; DARK GREY TO BLACK; CARBONACEOUS COALY DEBRIS THROUGHOUT; SILTY AT MID INTERVAL; FLOOR CONTACT GRADATIONAL		
158.20	177.50			19.30	0	SS	SILTSTONE	(WITH MINOR) MUDSTONE; MEDIUM GREY; FINE GRAINED SANDSTONE INTERBEDDED WITH SILTSTONE... SEQUENCE IS 'MONOTONOUS' AND 'NONDISTINCTIVE'.	161.30	72
									166.50	71
									169.60	78
									169.70	75
									173.00	70
									173.80	75
									175.50	79
									176.80	73
177.50	180.00			2.50	0	SS		LIGHT TO MEDIUM GREY; FINE GRAINED; GRADATIONAL CONTACTS; VERY MINOR COALY DEBRIS; FINELY LAMINATED; 1 CM CALCITE VEIN AT 179.2M; CALCITE WISPS AT 179.2-180.0M	179.50	68
180.00	182.40			2.40	0	SLST		DARK GREY; COALY DEBRIS THROUGHOUT. MASSIVE.		

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LOG DATE 84/08/00
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TOP	BASE	SEAM	SAMPLE NUMBER	THICK	% REC	MAJOR	MINOR LIHOLOGY	REMARKS	DEPTH	C. B. A.
182.40	184.54			2.14	0	MDST	TO COALY SHALE;	DARK GREY TO BLACK; CARBONACEOUS/COALY THROUGHOUT.	183.50	73
184.54	186.80	1		2.26	0	COAL		RECOVERED: 0.78M; BRIGHT; CRUSHED TO BROKEN; DIRTY IN UPPER 0.20M OF RECOVERY; SEPARATION WITH ROOF: VISUAL: POOR, PHYSICAL: POOR SEPARATION WITH FLOOR: VISUAL: VERY POOR, PHYSICAL: VERY POOR.		
186.80	186.94	2		.14	0	TNST		(?) RECOVERED: 0.08M; CRUSHED; COALY WITH LIGHT BROWN FLECKS.		
186.94	187.26	2		.32	0	COAL		RECOVERED: 0.08M; CRUSHED; BRIGHT		
187.26	187.44	2		.18	0	COAL	SHALE	RECOVERED: 0.02M		
187.44	190.00	3		2.56	0	COAL		RECOVERED: 1.45M; BRIGHT/DULL; CRUSHED TO BROKEN. SEPARATION WITH ROOF: VISUAL: VERY POOR, PHYSICAL: VERY POOR. SEPARATION WITH FLOOR: VISUAL: VERY POOR, PHYSICAL: VERY POOR. NOTE PTG ON LOG 189.28-189.44M. NOT EVIDENT IN CORE.		
190.00	190.62	4		.62	0	COAL	SHALE	RECOVERED: 0.15M; DULL; BROKEN TO CRUSHED.		
190.62	190.88	4		.26	0	COAL		RECOVERED: 0.11M; BROKEN; BRIGHT; SOFT		

SECUS CORE DESCRIPTION

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DRILL HOLE # DG84D-1

LOG DATE 84/08/00
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TOP	BASE	SEAM	SAMPLE NUMBER	THICK	% REC	MAJOR	MINOR LITHOLOGY	REMARKS	DEPTH	C.B.A.
190.88	191.04	4		.16	0	SH	COAL/HIGH ASH COAL	RECOVERED:0.12M		
191.04	192.32	5		1.28	0	COAL		REC:1.00M;BRIGHT WITH DULL BANDS;BROKEN; HARD. SEPARATION WITH ROOF VISUAL ;POOR,PHYSICAL;POOR.SEPARATION WITH FLOOR;VISUAL:GOOD,PHYSICAL:GOOD		
192.32	192.67			.35	0	MDST		SILTY IN SOME INTERVALS;DARK GREY TO BLACK;MINOR THIN COALY/CARBONACEOUS WISPS THROUGHOUT.		
192.67	193.98			1.31	0	SLST		MINOR GRADATIONS TO SANDSTONE AND MUDSTONE;MEDIUM TO DARK GREY;MINOR COALY CARBONACEOUS WISPS THROUGHOUT.		
193.98	194.40			.42	0	SH	CARBONACEOUS	RECOVERED:0.30M;THIN BANDS OF COAL WITHIN;DULL TO BRIGHT.SEPARATION WITH ROOF;VISUAL:FAIR,PHYSICAL:POOR SEPARATION WITH FLOOR;VISUAL:POOR, PHYSICAL:POOR.		
194.40	194.80			.40	0	COAL		REC:0.04M;HARD;BRIGHT; CLEAN.SEPARATION WITH ROOF;VISUAL:POOR,PHYSICAL :POOR,SEPARATION WITH FLOOR;VISUAL:POOR,PHYSICAL:POOR		
194.80	204.15			9.35	0	MDST	SILTSTONE INTERBEDDED;	MEDIUM TO DARK GREY TO BLACK;MINOR COALY/CARBONACEOUS		

SECUS CORE DESCRIPTION

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DRILL HOLE # DG84D-1

LOG DATE 00/01/94
EXAMINED BY A. WHITE

TOP	BASE	SEAM	SAMPLE NUMBER	THICK	% REC	MAJOR	MINOR LITHOLOGY	REMARKS	DEPTH	C.B.A.
								WISPS THROUGHOUT; SOME INTERVALS FINELY LAMINATED; FLOOR CONTACT GRADATIONAL.		
204.15	208.96			4.81	0	SS		WITH MINOR SILTSTONE INTERVALS; LIGHT TO MEDIUM GREY; FINE GRAINED; 'STICK' CORE; SOME INTERVALS FINELY LAMINATED; CLEAN; WELL SORTED.	207.00	71
208.96	209.42			.46	0	SS		LIGHT TO DARK GREY; MEDIUM GRAINED; COALY/CARBONACEOUS MATERIAL THROUGHOUT... VERY DIRTY. RECOVERED: 0.17M;		
209.42	209.92			.50	0	COAL		RECOVERED: 0.17M; HARD; BRIGHT; BROKEN; SEPARATION WITH ROOF: VISUAL: EXCELLENT PHYSICAL: FAIR, SEPARATION WITH FLOOR: VISUAL: POOR, PHYSICAL: POOR.		
209.92	217.23			7.31	0	SLST		WITH MINOR MUDSTONE AND SANDSTONE INTERVALS; LIGHT TO DARK GREY TO BLACK; MINOR COALY/CARBONACEOUS WISPS FROM 209.92-211.10M; SLICKENSIDED 212.3M; BELOW SLICKENSIDE, OVERALL COLOUR LIGHTENS; BOTTOM CONTACT STRATA BECOMES HARDER AS IT GRADES INTO A SANDSTONE.		
217.23	218.50			1.27	0	SS		LIGHT TO MEDIUM GREY; VERY FINE GRAINED; WELL SORTED; CLEAN; MINOR SLICKENSIDE SURFACES AT 218.2-218.5M; BOTTOM CONTACT GRADATIONAL. SOFTER AS IT		

SECUS CORE DESCRIPTION

11/13/84

DRILL HOLE # DGB4D-1

LOG DATE 84/08/00
EXAMINED BY A. WHITE

TOP	BASE	SEAM	SAMPLE NUMBER	THICK	% REC	MAJOR	MINOR LITHOLOGY	REMARKS	DEPTH	C.B.A.
217.23	218.50			1.27	0	SS		TO A SILTY MUDSTONE.		
218.50	230.25			11.65	0	SS	SILTSTONE INTERBEDDED;	SEQUENCE MONOTONOUS AND NONDISTINCTIVE; SANDSTONE.		
230.15	235.66			5.51	0	SS		FINE GRAINED GRADING TO COARSE GRAINED (TO BASE); LIGHT GREY; MINOR COALY/ CARBONACEOUS WISPS/DEBRIS THROUGHOUT; OVERALL SANDSTONE IS CLEAN; 'STICK' CORE BOTTOM CONTACT ABRUPT.	231.60	50
									234.50	75
235.66	236.46			.80	0	CONG	PEBBLE	LIGHT TO DARK GREY TO BLACK; MAJORITY OF CLASTS TO 1 CM APPROX. BUT FEW UP TO 3 CM APPROX. IN DIAMETER; MATRIX COARSE GRAINED (WITH MINOR MEDIUM GRAINED) SANDSTONE; BOTTOM CONTACT ABRUPT.		
236.46	244.04			7.58	0	SLST		WITH MINOR MUDSTONE; MEDIUM TO DARK GREY; BOTTOM 0.75M OF INTERVAL CARBONACEOUS/COALY.	237.50	66
									239.70	79
									241.50	74
									243.80	72
244.04	246.90			2.86	0	SS		MEDIUM GREY; (MOSTLY) FINE GRAINED; MEDIUM GRAINED ZONE AT 244.54-244.64M; 244.65-245.30M SILTSTONE		

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TOP	BASE	SEAM	SAMPLE NUMBER	THICK	% REC	MAJOR	MINOR LITHOLOGY	REMARKS	DEPTH	C.B.A.
								INTERBED...MINOR SOFT SEDIMENT DEFORMATION NEAR TOP OF SILTSTONE INTERBED;BOTTOM 0.10M OF INTERVAL COALY/CARBONACEOUS MUDSTONE.		
246.90	247.07	6		.17	0	COAL		RECOVERED:0.17M;SEPARATION WITH ROOF:VISUAL:FAIR,PHYSICAL:POOR		
247.07	247.17	6		.10	0	COAL	SHALE	RECOVERED:0.04M		
247.17	247.44	6		.27	0	COAL		RECOVERED:0.16M;CANNOT DISCERN PARTING (ON GEOPHYSICAL LOG)		
247.44	247.60	6		.16	0	COAL	SHALE	RECOVERED:0.21M;HARD;BRIGHT-DULL BANDED,CLEAN.SEPARATION WITH ROOF: VISUAL:POOR,PHYSICAL:POOR.SEPARATION WITH FLOOR:VISUAL:FAIR PHYSICAL:FAIR		
247.60	247.84	6		.24	0	COAL		REC:0.21M;HARD; BRIGHT-DULL BANDED,CLEAN; SEPARATION WITH ROOF;VISUAL:POOR PHYSICAL;POOR,SEPARATION WITH FLOOR;VISUAL: FAIR;PHYSICAL: FAIR.		
247.84	251.00			3.16	0	MDST		SILTY AT TOP OF INTERVAL;DARKGREY TO BLACK;CARBONACEOUS IN LOWER HALF;AT 249.6M...0.05M COAL BAND.BOTTOM CONTACT		
251.00	253.45			2.45	0	SS		LIGHT TO MEDIUM GREY;PRIMARILY FINE GRAINED (WITH MINOR MEDIUM GRAINED);	233.45	64

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TOP	BASE	SEAM	SAMPLE NUMBER	THICK	% REC	MAJOR	MINOR LITHOLOGY	REMARKS	DEPTH	C.B.A.
251.00	253.45			2.45	0	SS		'STICK' CORE.	251.50	72
									252.80	63
253.45	256.23			2.78	0	SLST		(AT TOP) GRADING TO MUDSTONE (AT BASE); MEDIUM TO DARK GREY; MINOR COALY DEBRIS AT MID INTERVAL; CARBONACEOUS THROUGHOUT; EVIDENCE OF SOFT DEFORMATION; CONTACTS TOP AND BOTTOM ARE GRADATIONAL.		
256.23	256.85			.62	0	SS		LIGHT GREY; MEDIUM GRAINED; FINELY LAMINATED; SHARP CONTACT AT TOP.	256.20	68
256.85	257.14			.29	0	MDST		DARK GREY TO BLACK; MASSIVE; VERY SLICKENSIDED CARBONACEOUS		
257.14	257.26			.12	0	COAL		RECOVERED: 0.09M; BROKEN; BRIGHT.		
257.26	258.02			.76	0	COAL	SHALE TO CARBONACEOUS MUD	DARK GREY TO BLACK; SLIGHTLY SILTY TO BASE; AT 0.10M ABOVE BASE, 0.03M LIGHT GREY ZONE... POSSIBLE TONSTEIN (??)		
258.02	258.16	7		.14	0	COAL		RECOVERED: 0.06M; LIGHT GREY-BROWN; SOFT; COALY		
258.16	258.28		7	.12	0	TNST		REC: 0.06M; LIGHT GREY-BROWN; SOFT; COALY.		
258.28	260.20	7		1.92	0	COAL		RECOVERED: 1.72M; HARD; BRIGHT;		

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TOP	BASE	SEAM	SAMPLE NUMBER	THICK	% REC	MAJOR	MINOR LITHOLOGY	REMARKS	DEPTH	C.B.A.
								WITH MINOR DULL BANDS; CLEAN; SEPARATION WITH ROOF: VISUAL: EXCELLENT, PHYSICAL GOOD. SEPARATION WITH FLOOR: VISUAL: POOR PHYSICAL: GOOD.		
260.20	265.10			4.90	0	SLST		TOP 0.75M... CARBONACEOUS MUDSTONE... DARK GREY TO BLACK... BALANCE OF UNIT DARK GREY; UNIT COARSENS IN GRAIN SIZE TO BASE; AT 263.4M... 0.10M UNIT CONTAINING SEVERAL TAN OBLONG CLASTS.	263.00	73
									264.60	78
265.10	275.30			10.20	0	SS		MEDIUM GREY; FINE TO MEDIUM GRAINED; MINOR MUDSTONE AT 267.0 - 268.38M... MOTTLED ZONE WITH MUDSTONE INTERSPERSED WITH SANDSTONE.	267.00	75
									269.30	67
									270.00	68
									272.70	76
									274.00	79
									275.20	70
275.30	297.04			21.74	0	CONG		AVERAGE CLAST SIZE 3 CM BUT DO EXCEED 5 CM; COARSE GRAINED SANDSTONE MATRIX; CLASTS ROUNDED TO OBLONG; CLASTS MOSTLY LIGHT GREY, PINK WITH OCCASIONAL		

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TOP	BASE	SEAM	SAMPLE NUMBER	THICK	% REC	MAJOR	MINOR LITHOLOGY	REMARKS	DEPTH	C.B.A.
								GREENISH-BROWNISH; NO BEDDING APPARENT; MINOR, DARK GREY UNIT AT 287.0-287.5M... NO CARBONACEOUS MATERIAL NOTED... SHARP CONTACTS TOP AND BOTTOM; CONGLOMERATE UNIT ALSO HAS SHARP FLOOR CONTACT		
297.04	298.28			1.24	0	MDST		WITH MINOR SILTY INTERBEDS; MEDIUM TO DARK GREY; FINELY LAMINATED; CARBONACEOUS.	298.00	75
298.28	299.50	8		1.22	0	COAL		REC: 0.43M; BRIGHT; HARD; CLEAN; SEPARATION WITH ROOF: VISUAL: FAIR, PHYSICAL: GOOD. SEPARATION WITH FLOOR: VISUAL: POOR, PHYSICAL: POOR		
299.50	299.94	9		.44	0	MDST	CARBONACEOUS	RECOVERED { : 0.39M; DULL; DARK GREY TO BLACK		
299.94	300.73	10		.79	0	COAL		RECOVERED: 0.25M; GROUND TO BROKEN; MOSTLY BRIGHT. SEPARATION WITH ROOF: VISUAL: POOR, PHYSICAL: POOR, SEPARATION WITH FLOOR: VISUAL: POOR, PHYSICAL: POOR.		
300.73	300.93			.20	0	COAL	SHALE	RECOVERED: 0.09M; DARK GREY TO BLACK; DULL TO BRIGHT; FISSILE.		
300.93	301.04			.11	0	SH	COAL	REC: 0.05M; HARD; BRIGHT; SEPARATION WITH FLOOR: VISUAL: FAIR, PHYSICAL: GOOD		
301.04	301.51			.47	0	MDST		DARK GREY; CARBONACEOUS; MASSIVE		

SECUS CORE DESCRIPTION

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DRILL HOLE # DG84D-1

LOG DATE 84/08/00
EXAMINED BY A. WHITE

TOP	BASE	SEAM	SAMPLE NUMBER	THICK	% REC	MAJOR	MINOR LIHOLOGY	REMARKS	DEPTH	C.B.A.
301.51	306.20			4.69	0	SS		LIGHT TO MEDIUM GREY; FINE GRAINED; FINELY LAMINATED; MINOR CALCITE VEINING	302.80	78
								AT 0.66M FROM TOP OF UNIT... 0.20M THICK; CROSS BEDDED.	304.00	73
									305.20	75
306.20	312.40			6.20	0	SH	CARBONACEOUS	COALY SHALE; DARK GREY TO BLACK; ABUNDANT COALY/CARBONACEOUS BLEBS AND COAL AT 309.5-309.7 M; HARD; BRIGHT; CLEAN.		
312.40	313.00			.60	0	SLST		DARK GREY; SLIGHTLY CARBONACEOUS.		
313.00	313.00			.00	0	UNKN		TOTAL DEPTH 313.00... FINISH... GOOD CORRELATION CORE VS NO PROBLEMS.		



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

APPLICATION TO EXTEND TERM OF LICENCE

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

(Same) P.O. Box 100
(Address) (Address)
Calgary, Alberta. T2P 2H5

Valid FMC No. 207568

hereby apply to the Minister to extend the term of Coal Licence(s) No(s). 4218, 4219, 4743, 4744,
4745 (group 297)

for a further period of one year.

2. Property name SECUS MOUNTAIN - NORTH PROSPECT, PEACE RIVER LAND DISTRICT.

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

4. I have performed, or caused to be performed, during the period January 1, 1984 to
December 31, 1984, work to the value of at least \$ 92006.07

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

CATEGORY OF WORK

CATEGORY OF WORK	Licence(s) No(s).	Apportioned Cost
Geological mapping		
Surveys: Geophysical		
Geochemical		
Other		
Road construction		
Surface work		
Underground work		
Drilling	<u>4218</u>	<u>79344.36</u>
Logging, sampling, and testing	<u>4218</u>	<u>8476.11</u>
Reclamation		
Other work (specify)		
Off-property costs		<u>4185.60</u>

5. I wish to apply \$ 40,557.09 of this value of work on Coal Licence(s) No(s). 4218 and 4219
and \$ 51,448.98 of this value to work on Coal Licence Nos. 4743, 4744, and 4745.

6. I wish to pay cash in lieu of work in the amount of \$ NA on Coal Licence(s) No(s).

7. The work performed on the location(s) is detailed in the attached report entitled Secus Mountain - North
Geological Report 1984

December 18, 1984
(Date)

[Signature]
(Signature)

Supervisor Land
(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 \$

GEPHYSICAL/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 3/3 79344.36
Wireline
Rotary: Conventional
Reverse circulation
Other* (specify)
Contractor JONTO. DRILLING.
Where is the core stored? Charlie. Lake.

Total Cost \$ 79344.36

LOGGING, SAMPLING, AND TESTING

Yes No

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

Total Cost \$ 8476.11

RECLAMATION

Yes No

Details Total Cost \$

OTHER WORK (Specify details)

Yes No

.....
.....
..... Total Cost \$

OFF-PROPERTY COSTS

Yes No

Details Report preparation Time and Materials Total Cost \$ 4185.60

Total Expenditures \$ 92006.07

December 18, 1984
(Date)

(Signature)

Manager Geology
(Position)

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

PR-SECUS MT. 84A

CONFIDENTIAL
COAL ANALYSES
FROM APPENDIX 4

634

LORING LABORATORIES LTD.

CERTIFICATE OF COAL TESTING

COMPANY

CROWNEST RESOURCES LTD.

FILE NO.

26701

ATTENTION

B. RYAN

DATE

September 4/84

PROJECT

NORTH SECUS PROJECT

PAGE

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of

4

SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY		BASIS OF ANALYSIS	REC'D % H ₂ O	% H ₂ O	% V.M.	% ASH	% F.C.	% S	KCAL/kg	F.S.I	NOTES	
		SINK	FLOAT											
<u>Hole</u> <u>DG84D-1</u> (4) 190.00-191.04 Interval	Raw Coal			As Received	3.73	-		57.61						
				Air Dried	-	1.43		58.99						
				Dry Basis	-	-		59.85						
W.	-1.60 FLT	-	21.47	Air Dried	-	1.68	31.19	12.64	54.49	.40	7114	3		
				Dry Basis	-	-	31.72	12.86	55.42	.41	7236			
5 191.04-192.32	Raw Coal			As Received	3.16	-		13.10						
				Air Dried	-	1.52		13.32						
				Dry Basis	-	-		13.53						
	-1.60 FLT	-	87.93	Air Dried	-	2.28	32.23	8.72	56.77	.36	7465	3		
				Dry Basis	-	-	32.98	8.92	58.10	.37	7639			
6 246.90-247.84	Raw Coal			As Received	2.22	-		36.86						
				Air Dried	-	1.44		37.15						
				Dry Basis	-	-		37.69						
	-1.60 FLT	-	52.59	Air Dried	-	1.92	31.64	10.54	55.90	.78	7316	6		
				Dry Basis	-	-	32.26	10.75	56.99	.80	7459			

CONFIDENTIAL

PURCHASE ORDER NUMBER:

CN 22501

ANALYST:



LORING LABORATORIES LTD.

CERTIFICATE OF COAL TESTING

COMPANY

CROWSNEST RESOURCES LTD.

FILE NO.

26701

ATTENTION

B. RYAN

DATE

September 4/84

PROJECT

NORTH SECUS PROJECT

PAGE 3

of 4

SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY		BASIS OF ANALYSIS	REC'D % H ₂ O	% H ₂ O	% V.M.	% ASH	% F.C.	% S	KCAL/kg	F.S.I	NOTES
		SINK	FLOAT										
Hole DG84D-1 7 258.02-260.2	Raw Coal			As Received	2.75	-		21.55					
				Air Dried	-	1.28		21.88					
				Dry Basis	-	-		22.16					
-1.60 FLT		-	75.04	Air Dried	-	2.12	30.65	10.06	57.17	.27	7405	5	
				Dry Basis	-	-	31.31	10.28	58.41	.28	7565		
8 298.28-299.50	Raw Coal			As Received	4.14	-		13.33					
				Air Dried	-	1.28		13.73					
				Dry Basis	-	-		13.91					
-1.60 FLT		-	85.30	Air Dried	-	1.58	32.91	5.48	60.03	.27	7842	6½	
				Dry Basis	-	-	33.44	5.57	60.99	.27	7968		
9 299.50-299.94	Raw Coal			As Received	2.32	-		84.29					
				Air Dried	-	1.69		84.83					
				Dry Basis	-	-		86.29					
-1.60 FLT		-	6.30	Air Dried	-	1.62	28.55	18.93	50.90	.29	6637	4	
				Dry Basis	-	-	29.02	19.24	51.74	.29	6746		

#CN 22501

PURCHASE ORDER NUMBER:

ANALYST:

LORING LABORATORIES LTD.

CERTIFICATE OF COAL TESTING

COMPANY	CROWNEST RESOURCES LTD	FILE NO.	26701
ATTENTION	B. RYAN	DATE	September 4/84
PROJECT	NORTH SECUS PROJECT	PAGE	4 of 4

SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY		BASIS OF ANALYSIS	REC'D % H ₂ O	% H ₂ O	% V.M.	% ASH	% F.C.	% S	KCAL/kg	F.S.I	NOTES	
		SINK	FLOAT											
<u>Hole</u> <u>DG84D-1</u> 10 299.94-300.73	Raw Coal			As Received	2.05	-		19.92						
				Air Dried	-	1.36		20.06						
				Dry Basis	-	-		20.34						
	-1.60 FLT	-	73.05	Air Dried	-	1.71	34.92	4.81	58.56	.43	7856	7½		
				Dry Basis	-	-	35.53	4.89	59.58	.44	7993			
11	Raw Coal			As Received	1.57	-		73.15						
				Air Dried	-	1.23		73.40						
				Dry Basis	-	-		74.31						
	-1.60 FLT	-	11.44	Air Dried	-	1.77	32.05	15.40	50.78	.94	6912	7		
				Dry Basis	-	-	32.63	15.68	51.69	.96	7037			

PURCHASE ORDER NUMBER:

#CN 22501

ANALYST: 

LORING LABORATORIES LTD.

CERTIFICATE OF COAL TESTING

COMPANY

CROWNEST RESOURCES LTD

FILE NO.

26701-1

ATTENTION

B. RYAN

DATE

November 26/84

PROJECT

NORHT SECUS

PAGE 1 of 1

SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY		BASIS OF ANALYSIS	REC'D % H ₂ O	% H ₂ O	% V.M.	% ASH	% F.C.	% S	Btu/lb	F.S.I	NOTES
		SINK	FLOAT										
Hole DG-84D-1 1-5 184.54-192.32	RAW COMP			Air Dried	-	1.60		26.98					
				Dry Basis	-	-		27.42					
	-1.60 FLT	-	60.39	Air Dried	-	1.37	31.73	10.89	56.01	.28	7262	3	
				Dry Basis	-	-	32.17	11.04	56.79	.28	7363		
8-10 298.28-300.73	RAW COMP			Air Dried	-	1.56		27.88					
				Dry Basis	-	-		28.32					
	-1.60 FLT	-	67.14	Air Dried	-	.95	33.27	6.98	58.80	.33	7713	6½	
				Dry Basis	-	-	33.59	7.05	59.36	.33	7787		

PURCHASE ORDER NUMBER:

CN 22501

ANALYST:



