

K-SHELL CORBIN 78(1)B



386

pt 1 of 6

CROWS NEST RESOURCES LIMITED

1979 GEOLOGICAL REPORT

FOR THE

CORBIN - COAL MOUNTAIN

PROPERTY

COAL LICENCE NO. 414 ..

LOT NO. 6995

N.T.S. 82G/7

OPEN FILE

GEOLOGICAL BRANCH
ASSESSMENT Geoffrey Hoffmann, P. Geol.
June 1979

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Report to Crows Nest Resources Ltd. by
Golder Associates

PROFESSIONAL VERIFICATION OF REPORT

1979 Geological Report for the
Corbin - Coal Mountain Property
Coal Licence No. 414

Miss Georgia Hoffman carried out the 1978 geological field program of Shell Canada Resources Limited and Crows Nest Resources Limited on the Corbin - Coal Mountain licence, and prepared this report under the general supervision of the undersigned.

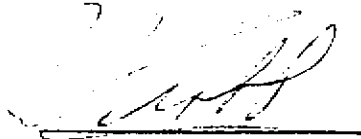
Georgia Hoffman graduated from the University of Pennsylvania in Philadelphia, Pennsylvania, U.S.A., with a Bachelor's degree in geology. She is a member, as a Professional Geologist, of the Association of Professional Engineers, Geologists, and Geophysicists of Alberta. Her experience in Western Canadian coal exploration includes positons with:

- Denison Mines Limited, Vancouver, B.C.
- Shell Canada Resources Limited, Calgary, Alberta
- Crows Nest Resources Limited, Calgary, Alberta

She currently holds the position of Senior Geologist for Crows Nest Resources Ltd.

I consider Georgia Hoffman to be well qualified to undertake the responsibilities she was assigned on this project. I am satisified that the attached report dated April, 1979 has been competently prepared and justly represents the information obtained from this project.

June 28, 1979


J. J. Crabb, P. Eng.

1.0 SUMMARY

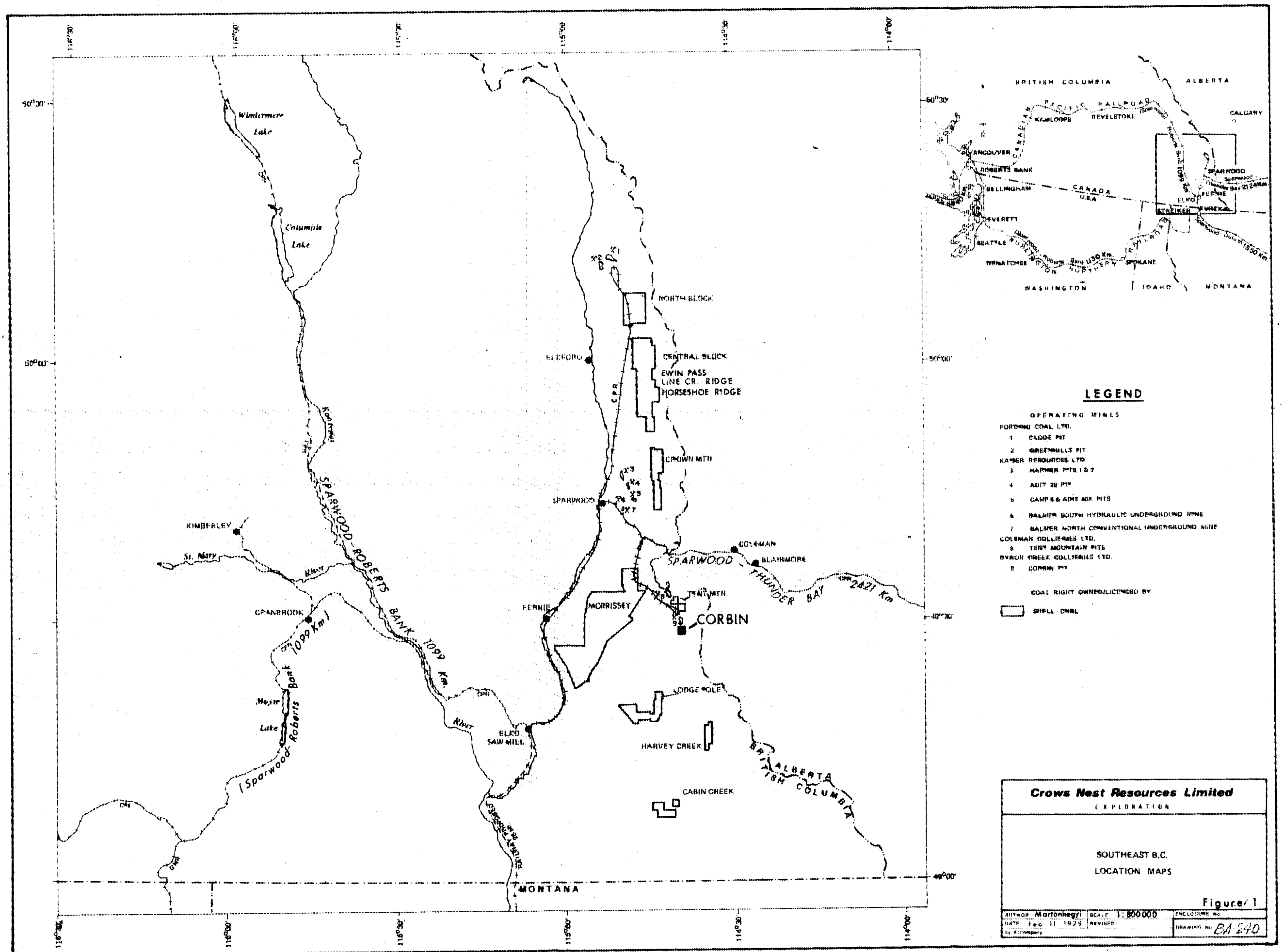
The Corbin-Coal Mountain property (Coal Licence No. 414) covers approximately 259 hectares of the southern end of Coal Mountain in southeastern British Columbia. Coal mining activities have taken place in the Corbin area since 1908. The unusually thick coal in this area is well suited to recovery by surface mining methods.

The Corbin property lies 4 km directly west of the Alberta - British Columbia boundary, 53 km directly north of the United States border, and 28 km directly east of Fernie, B.C. A logging road runs along the west side of the property providing access to Highway 3 near Sparwood, B.C., a distance of 23 km by road from the Corbin townsite. A 20 km rail spur to the Corbin townsite from the CP Rail line at McGillivray has been constructed by Byron Creek Collieries Limited which is presently producing coal from the northern end of Coal Mountain.

Coal Mountain lies within the Rocky Mountains and is an outlier of the Fernie coal basin. The property contains strata of the lower Kootenay Formation including one coal seam, the Mammoth Seam, which consists of an upper coal zone and a lower high ash zone. The coal is oxidized coking coal suitable for use in electrical power generation. An average sample of the upper coal zone, when cleaned at a specific gravity of 1.6, contains 10.7% ash with a yield of 67 percent.

The strata of the Corbin property have been subjected to an unusually high degree of folding and thrust faulting which has greatly thickened the Mammoth Seam. The upper coal zone achieves thicknesses of up to 35 metres in some drill holes. Seventeen rotary holes had been drilled on the Corbin property prior to 1978, and eight fully-cored holes were drilled during the 1978 exploration program. This drilling has resolved much of the structural complexity, placing most of the reserves in a proven category.

In place reserves for the upper coal zone of the Mammoth Seam have been calculated at 9.3 million metric tons. These reserves would be mineable by open pit methods. An additional 23.1 million metric tons of high ash coal in place has also been calculated for the lower high ash zone of the Mammoth Seam, but further studies of the coal quality will be required to determine whether this zone can be mined economically at present.

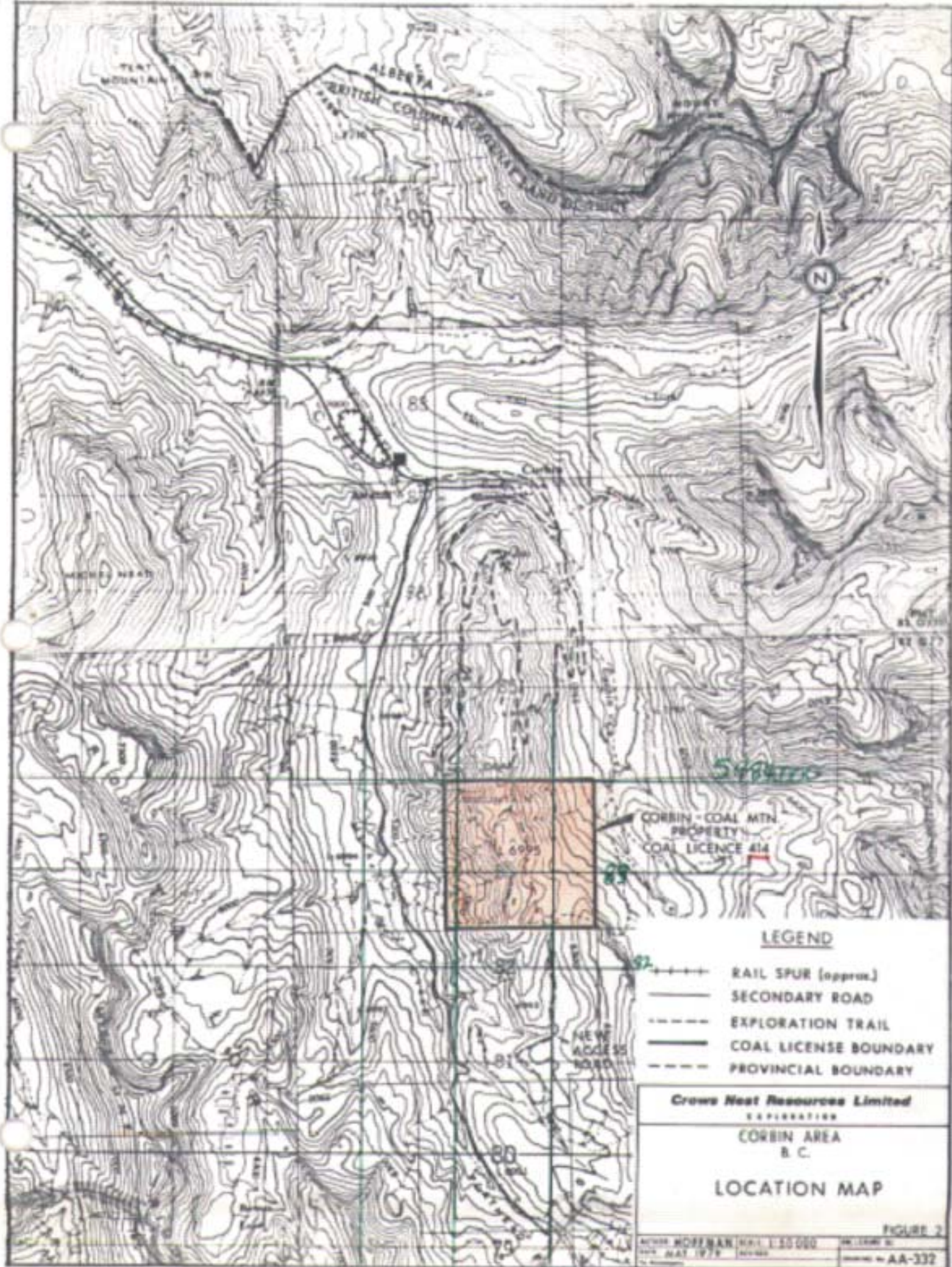


2.0 LOCATION AND ACCESS

The Corbin-Coal Mountain property consists of one coal licence, Coal Licence No. 414, which covers an area of one square mile (approximately 259 hectares). The licence is held by Shell Canada Resources Limited, with its wholly-owned subsidiary Crows Nest Resources Limited acting as operator. The property is located in southeastern British Columbia and lies 4 km directly west of the Alberta-British Columbia boundary, 53 km directly north of the United States border, and 28 km directly east of Fernie, B.C. (Figure 1).

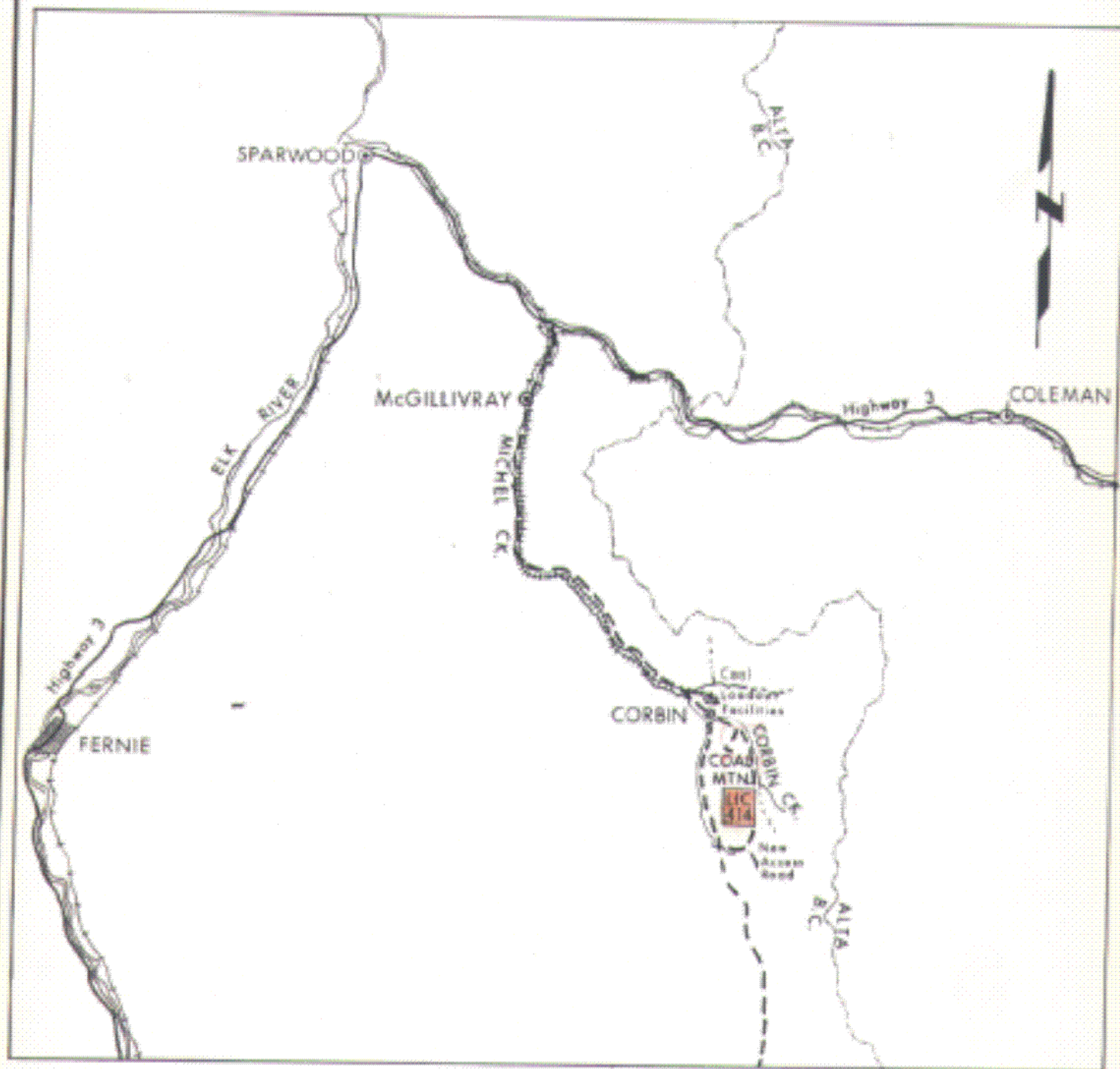
The Corbin-Coal Mountain coal licence covers the southern end of Coal Mountain near the coal mining town of Corbin. The unusually thick thermal coal of this area has been mined intermittently by both surface and underground techniques since 1908. The coal is particularly well suited to recovery by modern surface mining methods. Byron Creek Collieries is presently producing thermal coal from a surface mine on the northern end of Coal Mountain.

The relief of the property is great, with the high point of 2090 m lying near the summit of Coal Mountain and the low point of 1550 m lying on Michel Creek (Figure 2). The major portion of the coal reserves lie high on the western flank of Coal Mountain.



A logging road runs along the western edge of the coal licence and follows Michel Creek north to Highway 3 near Sparwood, B.C., a distance of 23 km from the Corbin townsite. Access to the interior of the licence near the summit of Coal Mountain can be gained from the north by a variety of exploration roads. Construction of a major access road from the south was begun in 1978 and completion is planned for the summer of 1979.

A rail spur from the Corbin townsite to the CP Rail line at McGillivray near Sparwood, B.C. has been constructed by Byron Creek Collieries Limited (Figure 3). The spur is 20 km long and follows Michel Creek and the logging road. Unit trains are presently hauling coal from Corbin to Thunder Bay, Ontario, a distance of 2125 km. The rail distance from Corbin to Vancouver is 1140 km.

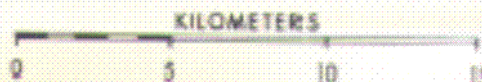


LEGEND



Corbin Coal
License No. 414

- Highway
- Secondary road
- Main C.P. Rail line
- Spur line
- Provincial boundary



Crows Nest Resources Limited
CORPORATION

CORBIN SOUTHEASTERN B.C. COAL LICENSE LOCATION MAP

Figure 2

DATE: FEB 79	SCALE: 1:250,000	DRAWN BY: C.C.
BY: A.S.	REVISED:	CHECKED BY: A.A. 304

3.0 EXPLORATION

Prior to 1978 Crows Nest Industries Limited carried out several exploration programs on the Corbin coal licence. This work included geological mapping and the drilling and geophysical logging of 17 rotary drill holes.

The 1978 Crows Nest Resources Limited exploration program involved the drilling of eight fully-cored diamond drill holes designed to yield additional structural, geotechnical, and coal quality data. Geological mapping, aerial photography, surveying, and road construction were also carried out.

3.1 DRILL CORE DATA

Severe drilling difficulties were encountered due to the highly fractured condition of the strata at Coal Mountain, and one diamond drill hole had to be abandoned before reaching its target depth. Coal core recovery was generally poor, ranging from 78 to 20 percent. Detailed geotechnical logging of the interseam strata was carried out under contract by Golder Associates and is covered by their report entitled "Geotechnical Field Investigations on the Coal Mountain Property, Corbin, B.C." which is included in Appendix VII.

Detailed lithological descriptions of all core were made by Crows Nest Resources Limited personnel and are included in Appendix II.

3.2 GEOPHYSICAL DATA

Geophysical logging of the 1978 diamond drill holes was carried out by BPB Instruments Limited and all logs, including detailed density logs of the coal intersections, were run according to metric system standards. The older rotary drill holes had been logged according to the English system by Roke Oil Enterprises Limited. All geophysical logs are included in Appendix III and are compared at a metric scale by the correlation charts. Many of the logs are of poor quality due to problems with drill hole caving.

3.3 SURVEYING AND CARTOGRAPHY

A series of aerial photographs was taken by Northwest Surveys (Yukon) Corporation Limited in June of 1978 to provide a basis for preparation of new metric topographic maps by that contractor. However, geological mapping, interpretation, and reserve calculations were carried out on English system topography prepared for Byron Creek Collieries Limited since the metric maps had not been completed at that time.

Surveying of drill holes and control points was carried out by Shell Canada Resources Limited personnel as described in Appendix VI.

3.4 ROAD CONSTRUCTION AND RECLAMATION

Construction of a major road designed to provide access to the Corbin coal licence from the south was begun in the Fall of

1978. Work was suspended in November, and is planned to resume in the Summer of 1979. The 2.1 km route involves the upgrading of existing logging trails for most of its length and includes a minimum of new land disturbance. Minor new drill trail construction was also carried out.

Reclamation work consisted of the seeding of new drill sites and the ditching and cross-trenching the drill trails for erosion control, which was carried out by Interior Reforestation Limited. The partially constructed main access road was ditched and creek crossings were left open until culverting can be carried out.

4.0 STRATIGRAPHY

The Corbin-Coal Mountain property includes strata of the upper portion of the Fernie Formation and the lower portion of the Kootenay Formation (Table 1). The Fernie Formation is Jurassic in age. The Kootenay Formation spans the Jurassic-Cretaceous boundary but the portion of this formation which is present at Corbin is probably all of Jurassic age (D.W. Gibson, 1977, Bull. Can. Petrol. Geol. v. 25, p. 767 - 791).

4.1 FERNIE FORMATION

The Fernie Formation consists of a thick sequence of marine sediments. This formation is recessive in nature and is very poorly exposed on the Corbin coal licence.

In the Coal Mountain area the base of the Fernie Formation is marked by a few feet of phosphatic shale and oolitic phosphate rock. This is overlain by grey and black shales containing abundant spherical sideritic concretions and some glauconitic beds. Interbeds of siltstone and mudstone become increasingly common in the upper portion of the formation as the gradational contact with the basal sandstone of the Kootenay Formation is approached. The Fernie Formation is estimated to be in the order of 200 m thick in the Coal Mountain area.

STRATIGRAPHY OF THE CORBIN COAL LICENCE

Table No. 1

PERIOD	FORMATION	MEMBER	BEDS	LITHOLOGY	THICKNESS
JURASSIC	KOOTENAY FM.	COAL-Bearing Member	Upper Sandstone & shale Series	Interbedded sandstone, silty sandstone, and mudstone; minor carbonaceous horizons.	greater than 190 m
			Upper Mammoth Seam	Coal, with discontinuous lenses and interbeds of claystone.	up to 35 m
			Lower Mammoth Seam	Claystone, with thin discontinuous lenses and interbeds of coal and stoney coal.	up to 58 m
		Moose Mountain Member		Coarsening-upward sequence of light grey sandstone; massive; resistant.	60 m
	FERNIE FM.			Grey and black marine shales with sideritic concretions and glauconitic beds; abundant interbeds of siltstone and sandstone at top; base marked by a thin phosphatic unit.	200 m (approximate)

4.2 KOOTENAY FORMATION - MOOSE MOUNTAIN MEMBER

The Moose Mountain Member of the Kootenay Formation is a massive, cliff-forming sandstone which conformably overlies the Fernie Formation. The lower portion of this unit consists of slightly ferruginous fine to medium grained sandstone with occasional thin argillaceous interbeds. The upper portion is medium to coarse grained and more quartzose, with an absence of argillaceous interbeds.

The Moose Mountain Member is about 60 m thick on the Corbin coal licence, although an exact thickness has not been determined due to structural complexity and poor exposure of the lower contact.

4.3 LOWER MAMMOTH SEAM

The Lower Mammoth Seam consists predominately of very fine-grained dark grey claystone with frequent carbonaceous horizons including carbonaceous claystone, coal, and stoney coal. These carbonaceous zones appear to be discontinuous and it has not been possible to correlate them on the basis of either drill core or geophysical logs. The intense tectonic thickening of the Lower Mammoth Seam has resulted in large thickness variations. Thicknesses of up to 58 m have been drilled to date on the Corbin licence.

Both the upper and lower contacts of the Lower Mammoth Seam are abrupt, and can be clearly identified on geophysical logs and in drill core.

4.4 UPPER MAMMOTH SEAM

The Upper Mammoth Seam directly overlies the Lower Mammoth Seam and is the zone of economic interest on the Corbin coal licence. The thickness of this unit is highly variable due to intense tectonic deformation. Thickness of up to 35 m have been drilled in this unit.

The Upper Mammoth Seam consists predominately of coal and contains discontinuous lenses and interbeds of claystone which vary in thickness from 0.5 cm to 4 metres. It has not been possible to establish a firm correlation of these rock bands between even closely-spaced drill holes because of the internal structural complexity of the Upper Mammoth Seam.

In the South Syncline the Upper Mammoth Seam consists of two coal splits 12 m and 6 m in thickness separated by 23 m of clastic sediments. In the remainder of the property the Upper Mammoth Seam consist of a single thick coal zone. These two different environments of deposition have been brought into abrupt contact by deformation and give some indication of the magnitude of displacement along some of the Corbin faults.

4.5 UPPER SANDSTONE AND SHALE SERIES

The youngest strata present at Coal Mountain have been informally referred to as the "upper sandstone and shale series"

by previous authors (D.K. Norris and R. A. Price, G.S.C. Map 4-1956).

Up to 190 m of this unit is present on the Corbin coal licence.

The remainder of the Kootenay Formation has been removed by erosion.

The upper sediments consist of interbedded sandstone, silty sandstone, and mudstone, with rare carbonaceous horizons. The sandstones are generally more argillaceous than those of the Moose Mountain Member and often contain argillaceous clasts. The detailed internal stratigraphy of the upper sandstone and shale series remains to be established. The unit is often heavily faulted and is usually in fault contact with the underlying Upper Mammoth Seam.

5.0 GEOLOGIC STRUCTURE

The high degree of tectonic deformation at Coal Mountain produced the intense thickening of the coal which has resulted in continued commercial interest in the area since mining began in 1908. That deformation, however, also generated a geological problem of such complexity that the geometry of the faults and lithologic units has been difficult to define.

The general geologic structure of the property consists of four synclines which plunge in a northerly direction at about twenty degrees. The western three synclines are faulted upon each other in an imbricate fashion. The eastern syncline is separated from the others by the Coal Mountain Anticline, which is the only well-developed anticline on the property.

During the 1978 geological mapping program a thrust fault with an orientation subparallel to the folded strata was observed in the South Syncline. Other faults with similar geometry were then recognized throughout the area. A few smaller structures with axes perpendicular to the major folds were also identified. These observations indicate that Coal Mountain has been affected by two periods of tectonic deformation.

An hypothesis was formulated in response to these observations which was then used to interpret all of the outcrop and drill hole data for the Corbin property. This model assumes that the prominent

folds were formed during the first stage of deformation in response to an east-west direction of primary maximum principal stress. The second stage, involving a more northerly direction of primary maximum principal stress, generated thrust faults in the folded strata and produced warping features along the fold axes and limbs.

5.1 FOLDING

Four synclines and one anticline constitute the prominent folds of the Corbin-Coal Mountain licence. The three synclines on the western flank of Coal Mountain are faulted upon one another in an imbricate fashion. These three synclines, which contain the major portion of the coal reserves, have been designated the West, Central, and South Synclines. The Coal Mountain Anticline forms the summit of the property and separates the East Syncline from the others.

The limbs of the folds dip rather steeply at about sixty degrees. The west limbs of the West and Central Synclines and the east limb of the East Syncline have somewhat shallower dips in outcrop which steepen rapidly in the subsurface. The fold axes trend in a northerly direction and generally plunge north at about twenty degrees, although variation and local reversals of plunge occur.

The geometry of each fold is further complicated by internal faulting, with the Central and West Synclines being particularly strongly faulted.

5.2 FAULTING

Eight major thrust faults have been identified in the Kootenay strata of the Corbin coal licence. These faults, each of which has been designated by a colour, have a complex geometry and are not planar. The displacement along the faults is not known, but major differences in stratigraphy between the South Syncline and the Central Syncline, which are separated by a fault, suggest that the displacement was, in some cases, quite large.

A fault with an orientation subparallel to the folded bedding was identified in the strata of the South Syncline during the 1978 geological mapping program. This fault produced a repeat of the stratigraphic section on its west limb and a loss of section on its east limb. This observation indicates that the faulting occurred after the strata had been folded. Had the faults occurred prior to folding and then been folded with the strata, consistent loss or gain of stratigraphic section would have resulted.

The high anisotropy of the Kootenay strata played a major role in controlling the geometry of the faults. The faults cut the brittle roof and floor strata at a much higher angle to bedding than they cut the coal and claystone of the Mammoth Seam. As a result, a definite offset between the occurrence of a fault zone in the roof strata and the occurrence of the same fault zone in floor strata is always observed.

On the basis of this understanding of the nature of faulting, the various fault outcrops and drill hole intersections of fault planes were correlated and structure contour map of each fault plane was prepared. It was then possible to correlate the coal intersections within each fault block and to prepare structure contour maps of the Mammoth Seam roof and floor. All structure contour maps are included in Appendix I.

5.3 TECTONIC THICKENING OF THE COAL

The extreme tectonic thickening of the coal at Coal Mountain was brought about by three mechanisms: faulting of coal upon coal within the Mammoth Seam, folding of the coal within the seam, and plastic flowage of the coal.

Fault repeats of coal within the Lower Mammoth Seam can be clearly identified on several geophysical logs. Similar repeats are probably common throughout both the Upper and Lower Mammoth Seam but cannot always be identified due to a lack of distinctive marker beds. Some evidence of internal folding of the coal within the seam and plastic flowage of the coal can also be seen in some of the trench exposures.

The thickening of the coal is most pronounced in the axes of the synclines, particularly where variation in the plunge of the seam floor has formed pockets.

6.0 RESERVES

All of the coal reserves of the Corbin-Coal Mountain property lie within an area of 95 hectares in which twenty-five holes have been drilled to date. The major portion of the reserves lie in the West, Central and South Synclines on the west flank of Coal Mountain. The reserves of the East Syncline on the east side of Coal Mountain were calculated separately since they would constitute a separate open pit mine.

Reserves were calculated by the cross-section method as detailed in Appendix IV. The results of the calculation are summarized by Table 2.

6.1 PROVEN RAW COAL RESERVES

In place reserves for the Upper Mammoth Seam on the west flank of Coal Mountain were calculated at 8.2 million metric tons of raw coal with an estimated specific gravity of 1.48. These reserves have been assigned to a proven category because of the high density of drilling in this area.

Additional reserves of 1.2 million metric tons of raw Upper Mammoth Seam coal in place were calculated for the East Syncline. These reserves have been assigned to an indicated category since only two holes have been successfully completed in the East Syncline.

Table No. 2

CORBIN COAL PROPERTY

SUMMARY OF RESERVES

UPPER MAMMOTH SEAM - RESERVES OF RAW COAL IN PLACE			
AREA	VOLUME (cubic metres)	ESTIMATED SPECIFIC GRAVITY	METRIC TONS
West Flank: proven reserves	5,546,057	1.48	8,208,164
East Syncline: indicated reserves	804,966	1.48	1,191,350
		TOTAL	9,399,514

LOWER MAMMOTH SEAM - HIGH ASH COAL IN PLACE			
AREA	VOLUME (cubic metres)	ESTIMATED SPECIFIC GRAVITY	METRIC TONS
West Flank	12,052,588	1.65	19,886,770
East Syncline	1,972,249	1.65	3,254,211
		TOTAL	23,140,981

6.2 LOWER MAMMOTH SEAM RESERVES

The Lower Mammoth Seam consists of claystone and high ash coal with lenses of better quality coal. The west flank of Coal Mountain has been calculated to contain 19.9 million metric tons of Lower Mammoth seam in place with an estimated specific gravity of 1.65. An additional 3.2 million metric tons were calculated for the East Syncline. Further coal quality testing will be required to determine whether the high ash coal of the Lower Mammoth seam is of economic interest at this time.

7.0 COAL QUALITY

Coal produced from Coal Mountain has long been marketed as thermal coal. Although the deposit originally consisted of coking coal, the tectonic deformation which thickened the coal, also fractured and sheared both the coal and the overlying strata, allowing deep oxidation of the deposit by percolating ground-water. As a result, the coal is of economic interest for its thermal value rather than its poor coking characteristics.

Drill core samples taken during 1978 have been analysed for coking properties, calorific value, sulphur, and ash; proximate and ultimate analyses have also been carried out. The analytical results are in the process of being compiled and interpreted at present, and preliminary results indicate that the upper coal zone of the Mammoth Seam is of economic interest. An average sample from this zone contains 23.6% raw ash, and a product cleaned at a specific gravity of 1.6 contains 10.7% ash, and 0.37% sulphur, with a yield of 67% and a thermal value of about 13,500 B.T.U./lb, based on an average of drill holes with better than 50% core recovery (Drill Holes 5A, 6A, 23 and 24).

The lower zone of the Mammoth Seam consists predominately of claystone with lenses of coal and stoney coal. This material has a high ash content with low wash recoveries and may not be of economic interest at present. The best sample of this material was

cored by Drill Hole 22 (core recovery = 47.6%), which contains 45.3% raw ash, excluding major rock bands, and was cleaned to 13.9% ash at a specific gravity of 1.6 with a yield of 31.4 percent.

No bulk samples have been taken from the Corbin property to date, but, because the deposit consists of oxidized coal to be sold for electric power generation, bulk samples could be economically obtained by trenching. Results from wash plant and pilot burn tests of bulk samples would be useful in determining both the market value of Upper Mammoth Seam coal and the economic potential of the high ash coal of the Lower Mammoth Seam. Diamond drilling has proved to be an expensive method of sampling the highly sheared coal of the Corbin property, and poor core recovery has made the analytical results difficult to interpret.

APPENDIX IV

SURVEY DATA

REPORT ON GEODETIC SURVEY

WORK DONE FROM JUNE 27, 1978 TO JANUARY 31, 1979

CORBIN

KOOTENAY LAND DISTRICT, B.C.

B.C. COAL LICENCES

NOS. 412, 413, 414

GROUP #6

HELD BY SHELL CANADA RESOURCES LIMITED

OPERATED BY CROWS NEST RESOURCES LIMITED

NTS 82G/7 & 10

LAT. $49^{\circ} 45'$ N, LONG. $114^{\circ} 40'$ W

BY

SHELL CANADA RESOURCES LIMITED - SURVEYING DEPARTMENT
GENERAL SURVEY CONTRACTOR

NORTHWEST SURVEY CORPORATION (YUKON) LIMITED
SUBCONTRACTOR ON PHOTOGRAMMETRIC MAPPING

1979-04-26

INTER-OFFICE CORRESPONDENCE

DATE APRIL 24, 1979

TO CROWS NEST RESOURCES LIMITED (C.N.R.L.)

FROM SHELL CANADA RESOURCES LIMITED - SURVEYING DEPARTMENT

SUBJECT LOCATION SURVEYS

 CORBIN BLOCK - SPARWOOD AREA - S.E. BRITISH COLUMBIA

A total of 8 new drill locations and 3 locations previously surveyed by C.N.I. (Crows Nest Industries) were located in the Corbin Block between June 1978 and October 1978.

The survey was conducted by conventional ground traverse using theodolites and electronic distance measuring equipment. The datum was B.C. Topo. STA. "QUEST". which was subsequently tied by traverse into Doppler Satellite STA. 78-49 which was established as part of the ground control for the photogrametric mapping project. Coordinates for Quest were held fixed to their published values and all calculations were done in the U.T.M. Grid system and distances and bearings were corrected for sea level and scale factor.

Accuracy of the Drill Location surveys were in the 1:5000 to 1:10000 range and the accuracy of the "QUEST" tie to STA. 78-49 by closed traverse was 1:120 000. The results of the surveys were presented to C.N.R.L. in tabular form for plotting and a copy is hereby attached.

The total cost of the work was \$29,900.



D. C. Poulson

DCP:cw

Attachements:

CORBIN DRILL HOLES
REFERENCED TO 117° WEST LONG.

<u>DRILL HOLE</u>	<u>U.T.M</u>		<u>ELEVATION(m)</u>
	<u>NORTHINGS</u>	<u>EASTINGS</u>	
6A	5483485.4	669297.2	2003.2
22	5483859.5	669446.2	2045.0
23	5483350.2	669493.5	2059.0
24	5483226.1	669498.4	2071.1
20A	5483945.5	669282.2	1999.3
21	5483937.9	669347.3	2040.2
5A	5483577.8	669400.3	2040.0
* 5	5483579.3	669392.6	2039.9
* 9	5483720.4	669449.9	2031.9
* 7	5483764.7	669369.1	2043.3
19	5483807.3	669255.4	2001.0

* PREVIOUSLEY SURVEYED BY C.N.I.

"QUEST"(B.C.Topo)	5478304.93	666183.58	2444.50 (FIXED)
"SQUAW" "	5473620.36	669492.16	2365.25 (FOR AZIMUTH ORIGIN)
78-49(DOPPLER)	5464310.63	663906.27	1843.43
78-49(TRAVERSE)	5464318.30	663911.57	1845.26

SURVEY STATIONS
COAL MOUNTAIN AREA

Central Meridian 117°W

<u>STATION</u>	<u>LATITUDE</u> ° ' "	<u>LONGITUDE</u> ° ' "	<u>HEIGHT(m)</u>	<u>Northing(m)</u>	<u>Easting(m)</u>
78-28	49 29 10.110	114 52 25.953	1777.9	5483453.73	653990.50
78-29	49 07 10.997	114 38 32.596	1627.5	5443222.46	672026.65
78-32	49 30 33.910	115 10 32.227	1383.0	5485468.44	632074.50
78-34	49 08 11.103	114 49 00.107	1948.5	5444697.09	659255.38
78-47	49 18 30.705	115 07 19.152	1062.7	5463232.08	636512.97
78-52	49 28 37.841	114 38 16.790	1778.60	5482966.26	671104.48
78-55	49 30 04.594	114 40 51.805	1518.50	5485548.11	667903.01
78-60	50 08 24.108	114 44 06.593	2334.7	5556437.11	661840.02
78-62	49 24 08.320	114 31 28.172	1563.8	5474908.19	679599.39
78-64	49 29 15.412	114 38 50.352	1696.08	5484105.24	670392.96
78-69	49 28 18.562	114 40 34.160	1578.66	5482285.00	668358.87
78-70	49 29 46.639	114 37 31.272	1940.55	5485119.38	671953.30

CORBIN DRILL HOLES

SURVEYED BY CROWS NEST INDUSTRIES LIMITED
IN ACCORDANCE WITH BYRON CREEK COLLIERIES GRID

DRILL HOLE	NORTHING	EASTING	ELEVATION (feet)
1	7601.2	13,119.2	6578.31
2	8313.3	13,312.8	6358.40
3	8907.4	13,264.4	6342.45
4	8760.8	12,233.6	6682.78
5	8110.8	12,038.6	6692.58
6	7811.8	11,709.5	6570.01
7A	8719.1	11,970.2	6703.74
8	8600	11,565	
9	8564.0	12,231.9	6666.21
10	7994.7	12,215.1	6704.07
11	6479.6	12,296.3	6570.39
12	6400.6	12,292.2	6531.59
13	7708.4	11,892.8	6591.70
14	7546.4	11,471.7	6433.07
15	7666.2	11,620.6	6508.86
15A	7644.2	11,657.9	6511.15
16	6583.5	12,161.4	6583.99
17	8879.1	1 ,852.7	6677.49



Golder Associates
CONSULTING GEOTECHNICAL ENGINEERS

REPORT TO
CROWS NEST RESOURCES
ON
GEOTECHNICAL FIELD INVESTIGATIONS
ON THE COAL MOUNTAIN PROPERTY
CORBIN, BRITISH COLUMBIA

DISTRIBUTION:

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- 3 copies - Golder Associates
Vancouver, British Columbia

November 1978

V78358A



Golder Associates

CONSULTING GEOTECHNICAL AND MINING ENGINEERS

November 14, 1978.
S/78/024

Mr. J. Crabbe,
Manager - Exploration,
Crow's Nest Resources Limited,
P. O. Box 100,
Calgary, Alberta.
T2P 2H5

Re: Geotechnical Field Investigations - Coal Mountain Property.

Dear Jack:

Attached please find a copy of our report on the geotechnical field investigations associated with your exploration program on the Coal Mountain property at Corbin, B.C. during 1978.

The report describes the field mapping, core logging and hydrological installations and monitoring performed in association with the latter part of the C.N.R. drilling program. Summaries of the geotechnical logs are presented, and the extent and nature of the raw data and core samples are described.

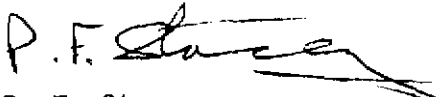
All data and samples are currently stored at our Vancouver office. The samples are enclosed in polyurethane foam and are stored in our humid room to prevent deterioration.

When the nature and extent of the proposed mining studies become available, it will be possible to formulate a more detailed geotechnical analysis and testing program aimed at providing specific input to the pit designs. At that time we would propose a meeting to discuss the detailed requirements of the C.N.R. Exploration and Mining Department.

We trust that the report meets your requirements. However, should you require further information, please do not hesitate to contact the undersigned.

Yours sincerely

GOLDER ASSOCIATES


P. F. Stacey

PFS/als
Encl.

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Appendix I

Figure I-1	Legend for Core Logs
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Appendix II

Figure II-1	Petur Piezometer Calibration Chart (CC22 Shallow)
Figure II-2	Petur Piezometer Calibration Chart (CC22 Deep)

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- Appendix I Core Log Format
- Appendix II Calibration Charts for Pneumatic Piezometers Installed in
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LIST OF DRILL LOGS

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Hole	CC21
Hole	CC22
Hole	CC23
Hole	CC24

Note: Located after Section 2.2

1.0 INTRODUCTION

This report presents the geotechnical data collected in association with the 1978 exploration drilling program on the Crows Nest Resources (CNR) property on Coal Mountain at Corbin, B.C., see Figure 1. In accordance with a request by F. Martonhegyi (CNR) and our letter of August 17, 1978, a Golder Associates geotechnical engineer was on site from August 11 to September 23, 1978; this period coincided with the completion of the last four holes of the drilling program.

The intent of this geotechnical phase of the program has been to gather field data which could act as a foundation for geotechnical input in any preliminary mine designs. As such, these field data have been essentially left in their raw form with only enough reduction to make them easily retrievable for later analyses and interpretation.

The geotechnical field work supplemented the work already being carried out by the Crows Nest Resources Geology Department, and concentrated on the following areas:-

- 1) Geology - including stratigraphy; major structures, i.e. faulting and folding; and structural fabric, i.e. bedding and jointing.
- 2) Hydrology - mainly monitoring of existing pore pressures in the sequence.
- 3) Core Sampling - collection of samples suitable for evaluation of the strength of the rocks within the sequence and that of the planar discontinuities they contain, as well as their resistance to weathering.

Since the stratigraphy and delineation of major structures were parts of the geology department's investigation, geotechnical work was

keyed to delineating the characteristics of the structural fabric, or inter-relationships of jointing and bedding, as well as the faults. This has been accomplished through geotechnical-structural logging of the 1978 drill core, and 'window' mapping of rock cuts, and exposures across the site. Section 2 covers this work in detail. Figure 2 is a site plan showing approximate locations of drill holes and mapping sites.

Hydrological work was limited to installation of piezometers for long term monitoring of pore pressures and to measurement of water levels in old drill holes on the site. No permeability testing was attempted because additives (mud) used during drilling would have effected the resulting permeabilities, and already troublesome hole conditions would have deteriorated further during testing. The location of piezometer installations is shown on Figure 2, with details presented on the Summary of Geotechnical Logs in Section 2.2 and discussed in Section 3.1. Section 3.2 outlines the condition of pre-1978 drill holes.

Although some qualitative idea of rock strengths can be derived from the logging, rock strength testing will eventually be required for design purposes. Considering this, the samples have been sealed in polyurethane foam for protection. Section 4.0 describes the samples and suggests applicable testing.

Geotechnical input for mine design purposes will require reduction and analysis of the data. Such a program is summarized in Section 5.0.

2.0 GEOTECHNICAL MAPPING AND LOGGING

Geotechnical window mapping and logging of core were used to examine the structural fabric of the rock units in the sequence and the effect of major structures, as well as the overall rock condition.

2.1 Geotechnical Mapping

Rock cuts and exposures on site were mapped using a 'window' technique. This technique involves recording major joint and bedding directions, infillings, surface characteristics, spacings and lengths, as well as those for faults, in "windows" or segments at pre-determined spacings along the available exposures. For the Coal Mountain program, window widths of 6 m and spacings of 25 m were used. Any major structure(s) between windows was also recorded. Figure 2 shows the locations of the windows.

Since the data from the mapping will require detailed interpretation, they have been left modified and are not presented herein. The raw data could be made available upon request. *no results*

2.2 Geotechnical Logging

All core from the 1978 program was logged for geotechnical detail. In addition, the orientations of natural fractures in the core were referenced to bedding where ever possible. These referenced orientations can be used to derive structural fabric orientations when the geological structure has been interpreted. However, at this stage the data is retained on file in the raw form.

The field geotechnical logs presented herein contain the following data:-

- core loss
- generalized lithology
- bedding dips
- sections logged in structural detail (referenced to bedding)
- core condition

- Rock Quality Designation (RQD)
- natural fracture frequency
- piezometer installation, with most recent water levels.

The presentation details for these features are described in detail in Appendix I.

SUMMARY GEOTECHNICAL LOG

DEPTH	PER CENT CORE LOSS			GRAPHIC LOG	REMARKS	BEDDING (deg. from core axis)	LOGGING METHOD	CORE CONDITION	ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PIEZOMETER INSTALLATION
	25	50	75						75	50	25	2	4	6	
					Casing to 7.6 m										
					- badly broken Iron stained partings	37 52 41 17									
20					- carbonaceous	36 38 55 46 58									
40						63									▼ 23/9/78
60						15 14 38									▼ 23/9/78
80					- carbonaceous, slickensides on partings	29 22 14 26									
					- carbonaceous										
100					- carbonaceous sheared & softened	40 38 52 49									
120					- 119.5 to 121.7 m calcite on slick- ensided partings	42 43 32									
140					- 136.3 m fault, shear partings 0.1m gouge with rock fragments.	63 61 59 47 50 45 47 64 43 40 62 33 55 50 56 57 54 41 54									
160															
180															
191.2															

Scale: 1:500

Date Logged Sept. 8, 1978

Project No. V78359A

Drillhole No. CC 5A

INCLINED 70°/090°

386 1/2 ①

SUMMARY GEOTECHNICAL LOG

DEPTH	PER CENT CORE LOSS			GRAPHIC LOG	REMARKS	BEDDING (deg. from core axis)	LOGGING METHOD	CORE CONDITION	ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PIEZOMETER INSTALLATION
	25	50	75						75	50	25	2	4	6	
					Casing to 3.4m										
20						63									
						75									
						67									
						65									
						63									
						51									
						50									
						70									
					31.7m - 0.1m gouge Iron stained	52									
						52									
						54									
						31									
						46									
						26									
						40									
						53									
						40									
						26									
60					Coal sampled before logging										
80															
					Carbonaceous, polished and slickensided partings throughout										
					Coal sampled before logging										
100					Carbonaceous, many slickensided partings										
					107.6 m coal on partings	59									
						26									
						20									
						22									
						34									
120					Coal sampled before logging										
					Coal sampled before logging										
140					Cross-bedded	53									
145.4															

Scale: 1:500

Date Logged Sept. 4, 1978

Project No. V78358A

Golder Associates

386 1/6 (2)

Drillhole No. CC 6A
VERTICAL

SUMMARY GEOTECHNICAL LOG

DEPTH	PER CENT CORE LOSS			GRAPHIC LOG	REMARKS	BEDDING (deg. from core axis)	LOGGING METHOD	CORE CONDITION	ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PIEZOMETER INSTALLATION
	25	50	75						75	50	25	2	4	6	
					CASING to 10.5 m										Casing
20					Iron staining on joints to 18.6 m	75									Open hole
40						60 57									
						77									
						76									
						53									
40						56									
						63									
60															
					68m Iron staining on joints to 78m	73									
						78									
80						77									
						78									
						81									
						83									
						72									
						80									
100						68									
						81									
						73									
						71									
						74									
					118.9 to 121.0m Calcite and Bitumin on healed faults	68									
120					120.4m- 0.2m fault of Breccia and gouge	72									
						87									
						77									
						75									
					134.8m Slickensides on partings.	67									
					At 140.2, 140.5 & 142.1m folded bedding	79									
140						73									
						28									
						35									
						23									
147.26					Mislatck at 145.7m rods temporarily jammed on pulling.	22									
						39									

Scale: 1:500

Date *Logged Aug 25, 1978*

Project No. *V78358A*

386 1/6 (3)

Drillhole No. *CC 19*

VERTICAL

SUMMARY GEOTECHNICAL LOG

DEPTH	PER CENT CORE LOSS			GRAPHIC LOG	REMARKS	BEDDING (deg. from core axis)	LOGGING METHOD	CORE CONDITION	ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PIEZOMETER INSTALLATION		
	25	50	75						75	50	25	2	4	6			
20					Tri-cone to 11.0m - iron staining on joints	55											No Installation
40					- iron staining on joints 418 to bottom fault(?) Brecciated, iron staining	50 55 64 60 68 40 42 49 52											

Scale: 1:500
Date Aug 24, 1978
Project No. V78358A

Drillhole No. CC 20
VERTICAL

SUMMARY GEOTECHNICAL LOG

DEPTH	PER CENT CORE LOSS			GRAPHIC LOG	REMARKS	BEDDING (deg. from core axis)	LOGGING METHOD	CORE CONDITION	ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PIEZOMETER INSTALLATION
	25	50	75						75	50	25	2	4	6	
20															
40					Triconed to 39.3m (for core see CC20)										
60					- extensive iron staining on and around joints	40 54 54 50 43 57 50 43 53 59 46 60 57 46 50 47									
80					- 59.2 to 60.7m - faulted, iron stained, coal "injected" into partings										
					- iron staining on joints										
					- staining diminishing										
					- calcite on joints										
100					82.6 to 83.2 m rock softened										
102.4															

Scale: 1:500
Date Logged Aug 24, 1978
Project No. V78358A

Drillhole No. CC 20A
VERTICAL

SUMMARY GEOTECHNICAL LOG

DEPTH	PER CENT CORE LOSS			GRAPHIC LOG	REMARKS	BEDDING (deg. from core axis)	LOGGING METHOD	CORE CONDITION	ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PIEZOMETER INSTALLATION
	25	50	75						75	50	25	2	4	6	
20					Casing to 32m										Pneumatic piezometers installed ▼ 22/9/78 ▼ 22/9/78
40					- iron staining on joints to 50m	63 63 69 58 44 68 62 69 75									
60					61.1 to 61.9m Iron staining on joints	56 43 43 67 63 73									
80					Coal sampled before logging										
100															
120						65 62 54 72 61									
124.1															

Scale: 1:500
Date Logged Sept. 5, 1978
Project No. V78358 A

SUMMARY GEOTECHNICAL LOG

DEPTH	PER CENT CORE LOSS			REMARKS	BEDDING (deg. from core axis)	LOGGING METHOD	CORE CONDITION	ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PIEZOMETER INSTALLATION
	25	50	75					75	50	25	2	4	6	
				Casing to 3m										
20				- Iron stained joints to 62.5m	62									
				- 29.6m possible fault	70									
					64									
					66									
					63									
					36									
					63									
					63									
					54									
					64									
40				- 41.5 to 42.4m dragfold (?)	82									
					66									
					72									
					63									
					72									
					61									
				- 54.9 to 57.9m calcite on partings	51									
					54									
60					65									
					58									
					62									
					63									
					44									
					52									
80					67									
					62									
					40									
					66									
					48									
					54									
100				- 101.2 to 104.0m brecciated and sheared fault	41									
					57									
					58									
					65									
					64									
					66									
120				- 122.6 to 123.5m slickensided joints	72									
					70									
					65									
					58									
					58									
					66									
140					48									
					67									
					80									
					74									
148.5														

No Installation

Scale: 1:500
Date Aug. 11, 1978
Project No. V78358A

Drillhole No. CC 23
INCLINED 70°/270°

Golder Associates

386 1/6 (8)

SUMMARY GEOTECHNICAL LOG

DEPTH	PER CENT CORE LOSS			GRAPHIC LOG	REMARKS	BEDDING (deg. from core axis)	LOGGING METHOD	CORE CONDITION	ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PIEZOMETER INSTALLATION	
	25	50	75						75	50	25	2	4	6		
20					9.3m - 0.1m Iron stained gouge	55										
					- extensive iron staining on partings	48										
						48										
						45										
						31										
						40										
						40										
						55										
						50										
						45										
						45										
40						32										
						42										
						57										
						53										
						60										
						48										
60						65										
						40										
						58										
						52										
						55										
						43										
						58										
80						57										
						57										
						53										
						58										
						60										
						53										
100					102.7 to 103.5m drag fold	48										
						55										
						48										
						58										
						58										
						28										
						55										
120						48										
						50										
						68										
						72										
						54										
						38										
140						45										
						45										
						55										
						58										
148.5																

Scale: 1:500

Date Aug. 21, 1978

Project No. V78358A

Drillhole No. CC 24

INCLINED 70°/270°

386 1/6

9

Goldex Associates

3.0 HYDROLOGY

Because of the difficult drilling conditions on site, hydrology studies were limited to installation of piezometers for long term monitoring of pore pressures. Where possible, two piezometer installations were made in each hole. In addition to installing piezometers, all old drill holes were sounded and water levels, where encountered, were recorded.

3.1 Piezometer Installations

Piezometers were installed in drill holes C.C.5A(2), C.C.19(1), C.C.20A(2), C.C.21(2), C.C.22(2), and C.C.24(2). Details of these installations are given in Table 3.1 and are shown diagrammatically on the Summary Logs in Section 2.2. As indicated, only drill hole C.C.19 has a single installation, all others are double installations. No installations were made in drill holes C.C.6A and C.C.23 since they were caved at or near the collar before Golder Associates' arrival on site.

With the exception of drill hole C.C.22 all piezometers were 2 cm I.D. PVC standpipes. The bottom 3 m of each standpipe was perforated with 0.6 cm wide slots at 30 cm spacings. The standpipes were seated in filter zones composed of fine gravel. Seals composed of bentonite or concrete were set between and above installations. For identification and protection, each set of piezometers (hole collar) was covered at surface by an orange painted box approximately 30 x 30 x 80 cm in dimensions.

In drill hole C.C.22, drilling fluids were still thick in the drill hole a month after completion. Because of this it was possible that a filter zone would become clogged enough to effect the proper function of

TABLE 3-1

Piezometer Installations

Drill Hole	Installation	Type	True Depth to tip (m)	Stratigraphic Location	Latest Depth To Water (meters)	Date of Measurement
C.C.5A	Shallow	Standpipe	63.3	In Coal Seam	40.6	23/9/78
	Deep	Standpipe	178.1	Below Coal Seam	58.4	23/9/78
C.C.19		Standpipe	104.5	Below Coal Seam	98.5	23/9/78
C.C.20A	Shallow	Standpipe	57.1	Above Coal Seam	55.3	21/9/78
	Deep	Standpipe	98.2	In Coal Seam	62.2	21/9/78
C.C.21	Shallow	Standpipe	104.6	In Upper Coal	63.5	23/9/78
	Deep	Standpipe	134.8	In Lower Coal	78.2	21/9/78
C.C.22	Shallow	Pneumatic	69.9	Above Coal Seam	50.3	22/9/78
	Deep	Pneumatic	104.0	Base of Coal	51.8	22/9/78
C.C.24	Shallow	Standpipe	61.3	Above Coal Seam	Dry	23/9/78
	Deep	Standpipe	136.4	Below Coal Seam	104.3	24/8/78

Note: 1) Depths are measured from the collar and are converted to vertical for inclined holes.

a standpipe piezometer. For this reason pneumatic piezometers were used in the place of standpipes. Appendix II, Figures II-1 and II-2 are the manufacturer's calibration curves for the pneumatic piezometers installed.

All piezometers were monitored while Golder Associates personnel were still in the area. Figures 3 to 8 inclusive, are the piezometer response curves to date. Water levels are given as true (vertical) depth below collar. No elevations have been given as drill hole collar survey data are not available at this time.

Arrangements are being made for Crows Nest Resources personnel from Fernie to continue to read the piezometers on a monthly basis.

3.2 Sounding of Old Drill Holes

All old drill holes that were not obliterated by subsequent erosion or road maintenance were sounded and the encountered water levels recorded, see Table 3.2.

Water was encountered in C.C.2, C.C.12, and C.C.15. However, of these, only C.C.12 was open a reasonable depth below the current water level.

4.0 SAMPLING FOR ROCK STRENGTH TESTING

With the possibility of future strength testing in mind, representative samples have been taken from the 1978 drill core. These samples were wrapped in plastic and aluminum foil, and sealed in polyurethane foam. By using this method of packaging the samples may be stored until required, with little chance of further degradation. Marker blocks were placed in the core boxes to record the sample locations.

TABLE 3-2Condition of Pre-1978 Drill Holes - Coal Mountain

<u>Drill Hole Number</u>	<u>Open to (m)</u>	<u>Water Level (m)</u>
C.C.1	12.00	Dry
C.C.2	10.80	8.8
C.C.3	6.10	Dry
C.C.4	Lost -----	
C.C.5	32.00	Dry
C.C.6	Lost -----	
C.C.7	12.00	Dry
C.C.8	Lost -----	
C.C.9	17.60	Dry
C.C.10	0.00	Dry
C.C.11	0.00	Dry
C.C.12	50.00+	5.3
C.C.13	Lost -----	
C.C.14	Lost -----	
C.C.15	11.60	7.2
C.C.15A	3.70	Dry
C.C.16	6.15	Dry
C.C.17	2.55	Dry

Table 4.1 lists the samples taken, their depth, storage box and slot (CAT. LOC.), general description, and possible testing. Four potential tests were envisaged during sampling, namely:-

- 1) Uniaxial Compression (U.C.)
- 2) Planar Shear (P.S.) on natural, and/or specially prepared surfaces.
- 3) Direct Shear (D.S.) for shear of softer zones.
- 4) Slake Durability (S.D.) to qualify the weathering resistance.

In addition to the core samples, a large sample (#G-C-1) of coal, of approximately 0.04 cu. m, was taken from a reasonably fresh cut. This sample, which is already in a sheared state, could be used in a large scale shear test to establish the properties of the coal. The sample was packed in polyurethane foam to minimize disturbance and moisture loss.

A representative part of the coal sample was sent to the Crows Nest Resources laboratory in Fernie for analysis in order to permit grade comparison with the core assays. The analysis report can be summarized as:-

Sample No. G-C-1

Lab No. 78-328

Raw Fraction

% Resid. Moisture	0.92
% Ash d.b.	18.33
F.S.I	1

TABLE 4-1

List of Core Samples
(See Explanation of Abbreviations at Bottom of Table)

Sample No.	Depth Top (ft.)	Depth Bottom (ft.)	Cat. Loc.	General Description	Proposed Testing
G5A-1	365.0	365.5	4 - 9	SLSN - Carb	S.D. - U.C.
G5A-2	455.7	456.3	4 - 10	SLSN - Carbonaceous	Slake Dur - U.C.
G5A-3	617.0	617.0	4 - 11	SASN (M.g.) B2 W/B	P.S.
G5A-4	619.5	620.3	4 - 12	SASN (M.g.) W/BI-k	P.S.
G6A-1	44.4	44.9	1 - 1	f.g. SASN B-2 PR	P.S.
G6A-2	46.4	46.7	1 - 2	f.g. SASN J2-F, PR	S.S.
G6A-3	164.3	164.9	1 - 3	SLSN	U.C. - P.S.
G6A-4	464.1	464.8	1 - 4	C.g. SASN - massive	U.C.
G6A-4A	464.8	465.2	1 - 5	C.g. SASN - J2 - IK	P.S.
G6A-5	471.0	471.8	1 - 6	m.g. SASN - dk. gr. Massive	U.G.
G19-1	97.0	97.9	3 - 1	Gouge - Clay & Rock Chips	Direct Shear (?)
G19-2	100.1	100.7	3 - 2	m.g. SASN - S.W.	U.C.
G19-3	112.9	113.7	3 - 3	m.f.g. SASN - well dev. bdg.	U.C.
G19-4	120.7	121.3	3 - 4	Fest. J-1 - in f.g. SASN	P.S.
G19-5	120.0	120.7	3 - 5	FR mass f.g. SASN	U.C.
G19-6	135.6	136.2	3 - 6	F.g. - m.g. mgr. SASN fine bdg	U.C.
G19-7	320.5	320.9	3 - 7	M.g. - SASN - B-1 slick.	P.S.
G19-8	369.2	364.8	3 - 8	m.g. SASN - B2 P.S.	P.S.
G19-9	408.8	409.1	3 - 9	m.g. - SASN - B1 PK	P.S.
G19-10	457.6	458.4	3 - 10	C.W. Rock w/chips	Direct Shear
G19-11	465.0	465.7	3 - 11	SASN MDSN interbed	Slake Durability
G19-12	468.3	468.8	3 - 12	SASN MDSN interbed	Slake Durability (?)
G20A-1	215.0	215.6	2 - 5	M. - c.g. SASN faint bdg	Uniaxial Comp
G20A-2	223.7	224.6	2 - 6	m.g. SASN; J-2 fract. F.	Planar Shear & Uniaxial
G20A-3	229.3	230.0	2 - 7	m.g. SASN - Massive	Uniaxial Comp
G20A-4	246.0	247.0	2 - 8	m.g. SASN, well dev. bdg	Uniaxial Comp
G20A-5	274.3	248.0	2 - 9	m.g. SASN B-1 Polished	Planar Shear
G20A-6	248.0	248.3	2 - 10	m.g. SASN, B-2 Smooth	Planar Shear
G20A-7	259.4	259.9	2 - 11	f.g. SASN, dk. grey	Uniaxial Comp
G20A-8	331.1	332.0	2 - 12	v.c.g. SASN, v. faint bdg	Uniaxial Comp

TABLE 4-1 (Cont'd)

List of Core Samples

<u>Sample No.</u>	<u>Depth Top (ft.)</u>	<u>Depth Bottom (ft.)</u>	<u>Cat. Loc.</u>	<u>General Description</u>	<u>Proposed Testing</u>
G21-1	131.6	132.1	4 - 4	SLSN - m. gr.	Slake Durability
G21-2	125.9	126.5	4 - 5	SLSN - m. grey	Slake Durability
G21-3	253.1	253.8	4 - 6	CLSN - m. gr.	Slake Dur.
G21-4	242.3	243.0	4 - 7	CLSN - m. gr.	Slake Dur.
G21-5	336.7	337.6	4 - 8	SLSN w/sandy lenses	Slake Dur.
G22-1	122.2	122.8	1 - 7	m.g. SASN - J1 - F. PR	P.S.
G22-2	123.6	124.4	1 - 8	f.g. SASN - faint bdg	U.C.
G22-3	135.5	136.6	1 - 9	f.g. SASN - w/silt bands (J5 - W,P)	U.C.
G22-4	149.2	150.0	1 - 10	f.g. SASN - w/silt bds irreg.	U.C.
G22-5	173.0	173.9	1 - 11	f.g. SASN - Massive	U.C.
G22-6	183.3	184.0	1 - 12	f.g. SASN - Massive	U.C.
G22-7	194.0	194.7	2 - 1	v.f.g. SASN - B1 - PP	P.S.
G22-8	227.4	228.0	2 - 2	SLSN w/Sandy Lenses	U.C.
G22-9	231.3	232.1	2 - 3	SLSN w/J5 - W	P.S.
G22-10	379.9	380.9	2 - 4	c.g. SASN W/B2 - P.R.	P.S. - U.C.
G-23-1	476.1	477.0	4 - 1	c. - v.c.g. SASN faint bdg, (M.M.S.)	Uniaxial Comp.
G-23-2	472.3	472.6	4 - 2	B2 - fracture - in c.g. SASN (M.M.S.)	Planar Shear
G-23-3	479.1	479.8	4 - 3	c.g. SASN faint bdg (M.M.S.)	Uniaxial Comp

Note: Sample No. G - for Golder Associates
5A - Drill hole number
-1 - Sequential sample number

Abbreviations as encountered

CAT. LOC.	-	Catalogue location - i.e. box number - slot number
SLSN	-	Siltstone
Carb.	-	Carbonaceous
S.D.	-	Slake Durability
SASN	-	Sandstone
m.g.	-	medium grained
B2 or (B-2)	-	Bedding break opened by drilling
w/	-	with
B	-	Bituminous Infilling
P.S.	-	Planar Shear
K	-	Calcite Infilling
f.g.	-	Fine Grained
PR	-	Planar, Rough Surface
J2	-	Joint Plane Opened by Drilling
U.C.	-	Uniaxial Compression
c.g.	-	Coarse Grained
IK	-	Irregular, Slickensided Surface
dk. gr.	-	dark grey
S.W.	-	Slightly Weathered
J-1	-	Joint Plain Naturally Open
Fe. st	-	Iron Stained
FR	-	Fresh Rock (unweathered)
mass.	-	Massive
gr.	-	Grey
B-1 (B1)	-	Bedding Plane Naturally Open
Slick.	-	Slickensided
PS	-	Planar Smooth Surface
C.W.	-	Completely Weathered
MDSN	-	Mudstone
v.	-	very
PP	-	Planar Polished Surface
(M.M.S.)	-	Moose Mountain Sandstone

5.0 FUTURE WORK

All samples and data are presently stored at Golder Geotechnical Consultants' Vancouver office where they are readily available for future testing and analysis, as required.

A program required to provide geotechnical input in any mine design using this data, should include:-

- formulation of a geological "model" of the site, including:
 - a) rock type distribution
 - b) structure(s)
 - c) structural fabric
- addition of hydrology to such a model.
- derivation of strength characteristics of the rock types in the model.
- analysis of proposed slopes against potential failure modes indicated by the model for proposed pit wall orientations.

Input required from Crows Nest Resources for such a program would consist of:-

- the stratigraphy and major structures of the site as interpreted by CNR's Geology Department. Geotechnical mapping and logging data can be combined with these data to form the geological model.
- continued monitoring of the piezometers installed during the field program in order to evaluate the extent of seasonal fluctuations.
- initial concepts of pit geometry, mining method, and mining sequence. Knowing these applicable slope orientations and geometries can be reviewed and recommendations made.


Recommendations from this study would be used as a basis for preliminary mine designs. Where particularly sensitive or critical conditions are indicated it may, however, be necessary to perform additional studies before the pit design(s) can be finalized.

We trust this report fulfills your present requirements. Should you have any questions or require any further data please do not hesitate to contact the undersigned.

Yours very truly

GOLDER ASSOCIATES


Per: P.F. Stacey

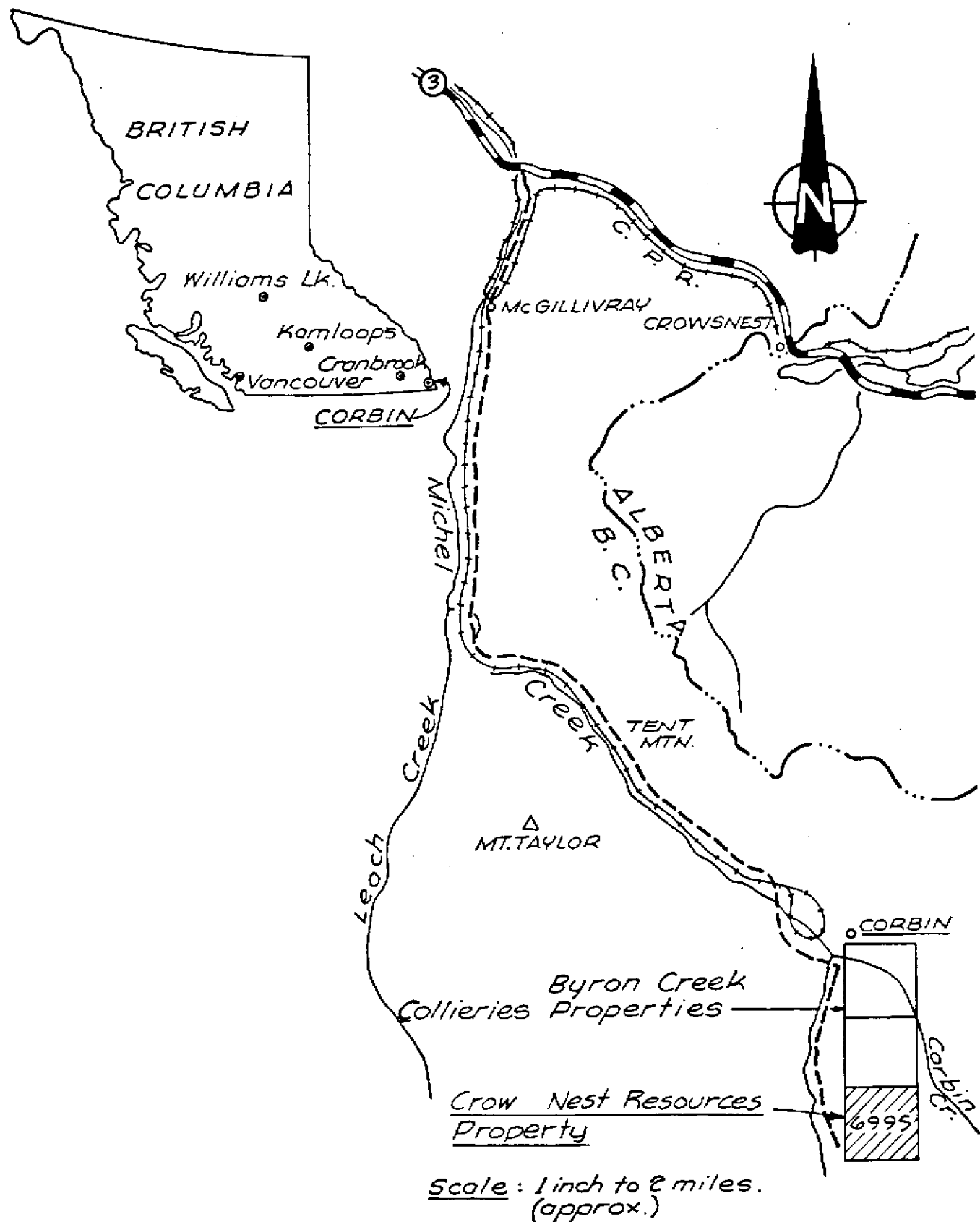

A.B. Good, P. Eng.

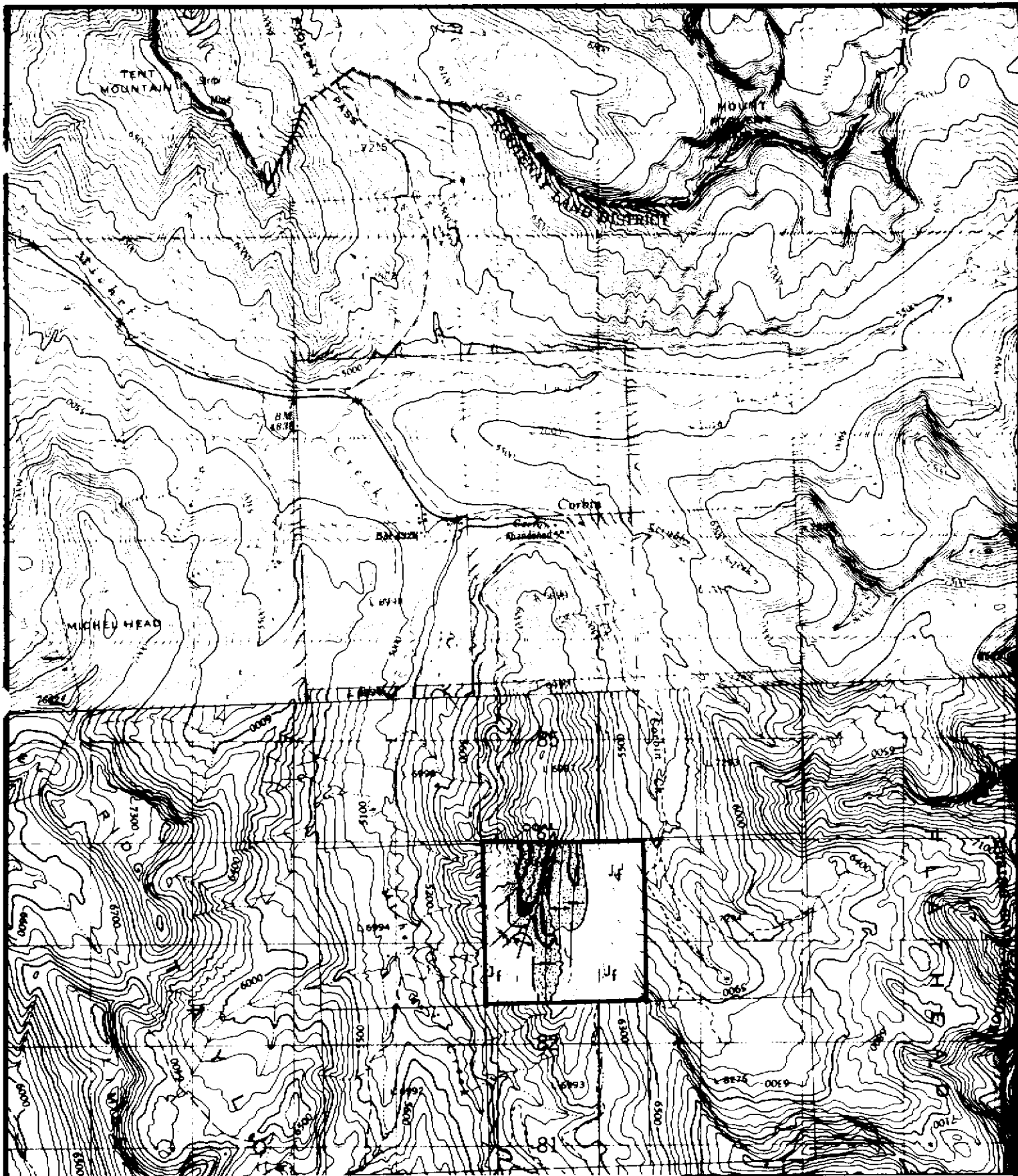
PFS/ABG:rme

V78358A

LOCATION PLAN

Figure 1





LEGEND

- | | | | |
|--|--------------|--|-----------------------|
| | MAMMOTH SEAM | | RAIL SPUR (approx.) |
| | KOOTENAY FM. | | SECONDARY ROAD |
| | FERNIE FM. | | EXPLORATION TRAIL |
| | FAULT | | COAL LICENSE BOUNDARY |
| | ANTICLINE | | PROVINCIAL BOUNDARY |
| | SYNCLINE | | |

Crows Nest Resources Limited

EXPLORATION

CORBIN AREA
B.C.

Map 2.

GEOLOGICAL COMPILATION MAP FIGURE 2

Author: HOFFMAN	Scale: 1:50,000	Enclosure No.
Date: MAY 1979	Rev. No.	Drawing No. AA-335

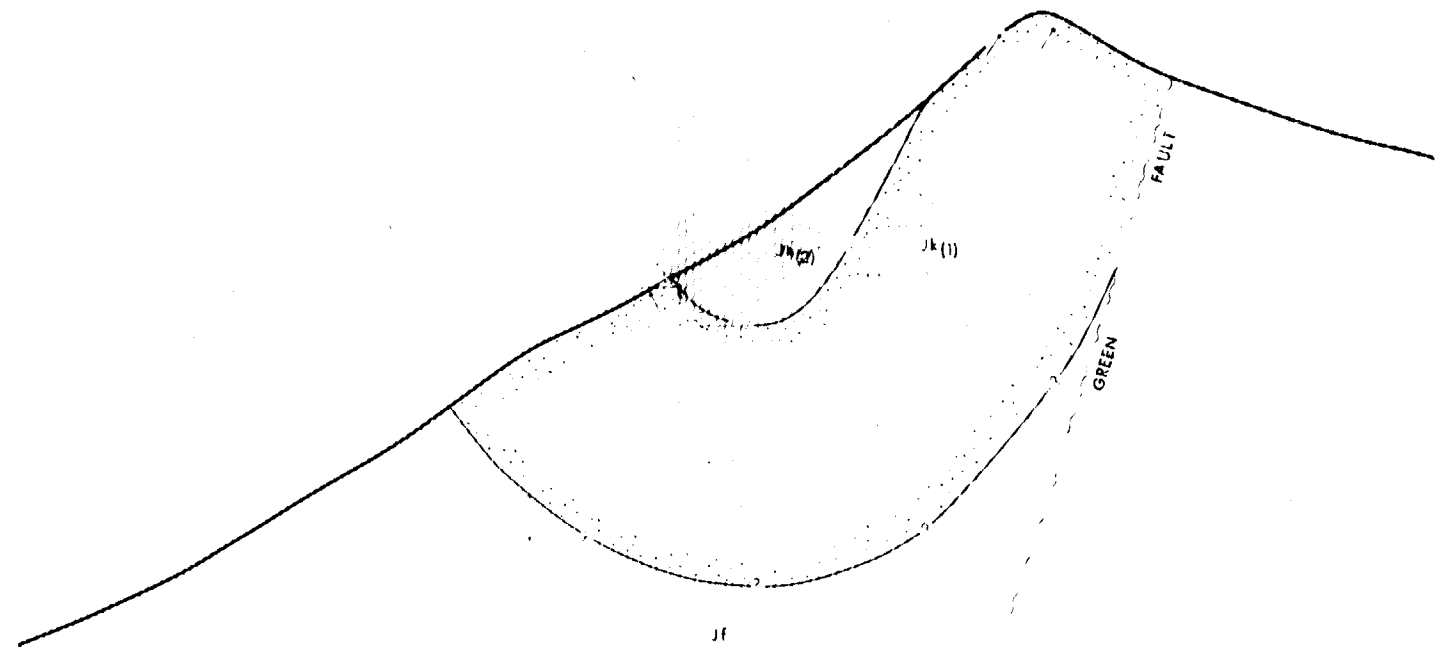
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WEST

5 800
6 700
6 600
6 500
6 400
6 300
6 200
6 100
6 000
5 900
5 800
5 700
5 600
11000 EAST

0 50 100 200 300 400 ft.

SECTION 5750N
EAST

6 800
6 700
6 600
6 500
6 400
6 300
6 200
6 100
6 000
5 900
5 800
5 700
5 600



- | | | | |
|--------|--|---------|-------------------------------------|
| Jk (4) | KOOTENAY FM. -- Upper sandstone and shale series. | Jk (3a) | Upper Mammoth Seam -- upper split. |
| Jk (3) | KOOTENAY FM. -- Upper Mammoth Seam coal with minor claystone bands and lenses. | Jk (3b) | Interbedded siltstone and mudstone. |
| Jk (2) | KOOTENAY FM. -- Lower Mammoth Seam claystone, stony coal and thin coal lenses. | Jk (2a) | Upper Mammoth Seam -- lower split. |
| Jk (1) | KOOTENAY FM. -- Moose Mountain Sandstone. | Jk (2b) | Interbedded mudstone and claystone. |
| Jf | FERNIE FM. -- Marine shale and siltstone. | | Lower Mammoth Seam. |

Crows Nest Resources Limited			
EXPLORATION			
CORBIN AREA B.C.			
78 (3) B			
CROSS SECTION SECTION 5750N			
AUTHOR: G. HOFFMAN	SCALE: 1:2400	REVISIONS	
DATE: 11-2-28	REVISED	DRAWN BY: H. S.	
To: Accounting			

Map 3

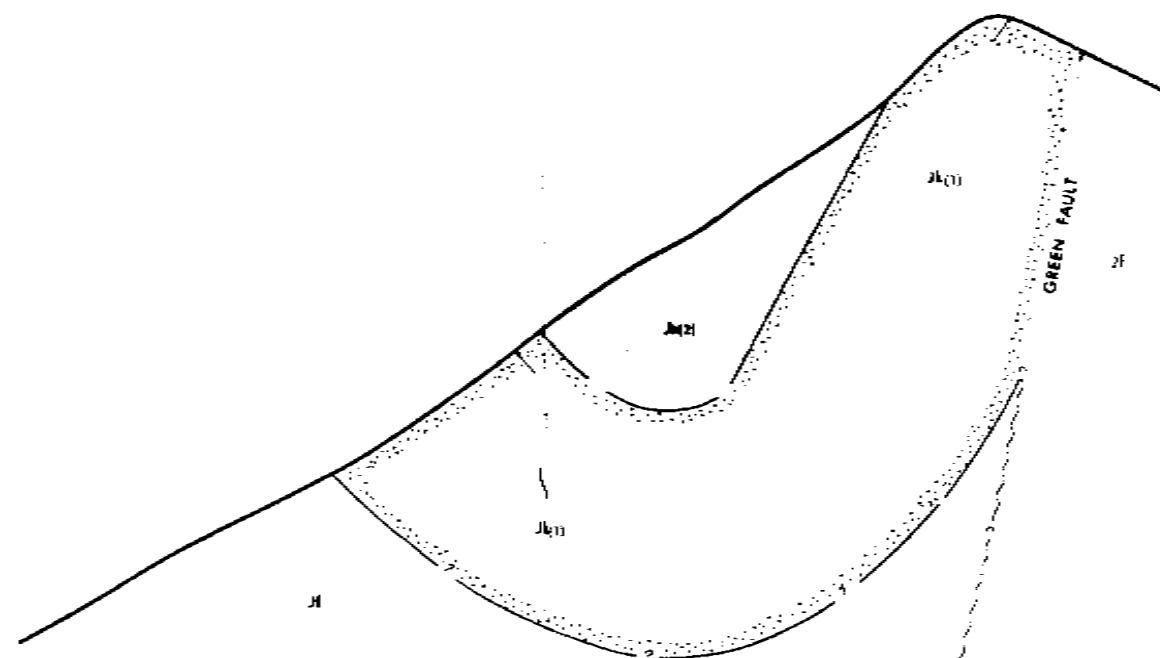
SECTION 6000 N
WEST

SECTION 6000 N
EAST

7000
6900
6800
6700
6600
6500
6400
6300
6200
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6000
5900
5800
5700
5600

7000
6900
6800
6700
6600
6500
6400
6300
6200
6100
6000
5900
5800
5700
5600

0 50 100 200 300 400 ft.



- Jk(12) KOOTENAY FM. - Upper sandstone and shale series.
- Jk(11) KOOTENAY FM. - Upper Marmonoth Seam: coal with minor claystone bands and lenses.
- Jk(10) KOOTENAY FM. - Lower Marmonoth Seam: claystone, waxy coal and thin coal lenses.
- Jk(9) KOOTENAY FM. - Moose Mountain Sandstone.
- Jf FERNIE FM. - Marine shale and siltstone.

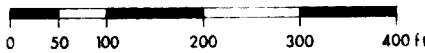
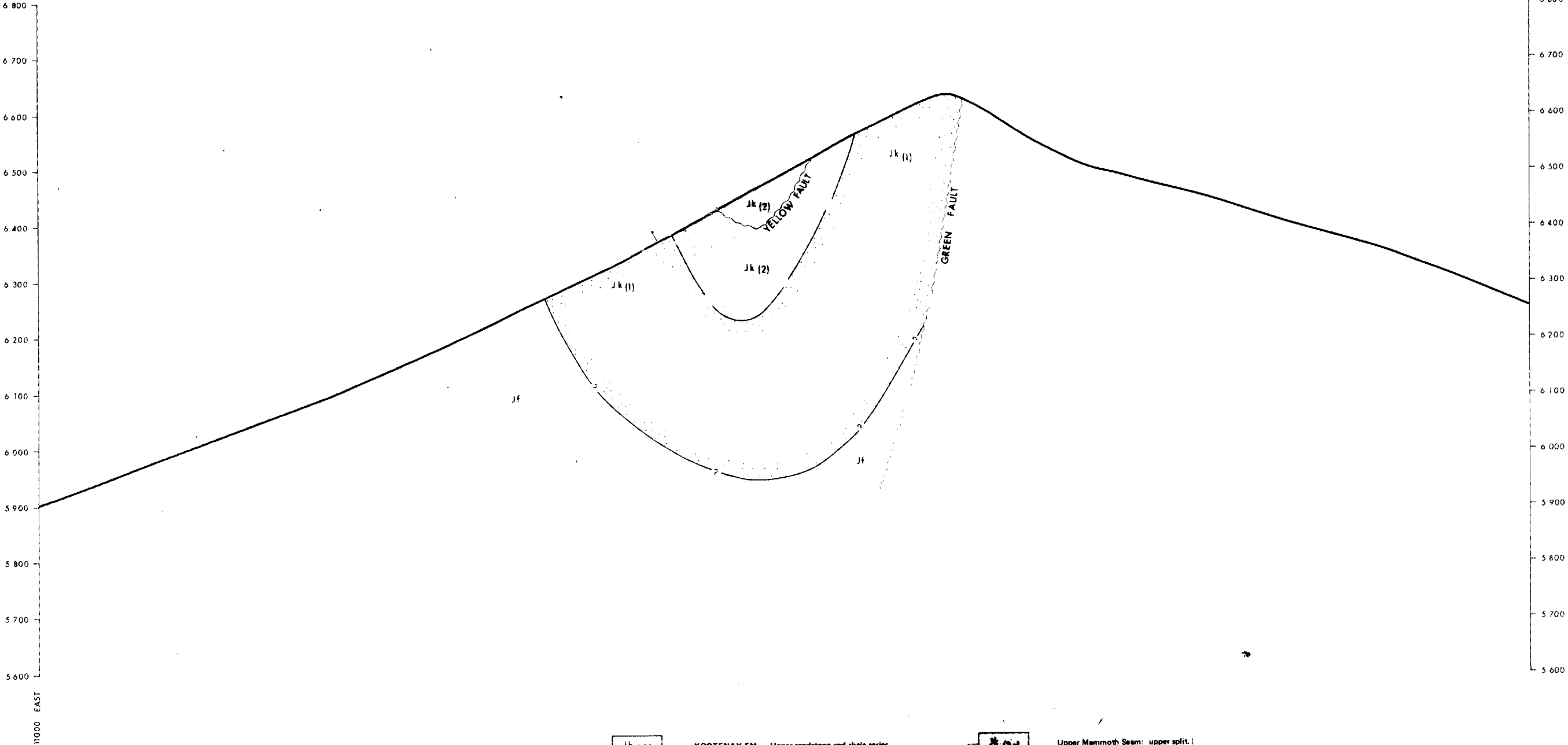
Crows Nest Resources Limited	
EXPLORATION	
CORBIN AREA BC	
78/2/B	
CROSS SECTION SECTION 6000 N	
AUTHOR: G. HOFFMAN	SCALE: 1" = 2400'
DATE: 22-02-79	ENCLOSURE NO.
TO: ECONOMY	REVIEWED: H.H. - 19 A

386 1/6
⑩

MAP 4

SECTION 6250N
WEST

SECTION 6250N
EAST



- | | | | |
|---------|---|---------|--------------------------------------|
| Jk (4) | KOOTENAY FM. — Upper sandstone and shale series. | Jk (3a) | Upper Mammoth Seam: upper split. |
| Jk (3a) | KOOTENAY FM. — Upper Mammoth Seam: coal with minor claystone bands and lenses. | Jk (3b) | Interbedded siltstone and mudstone. |
| Jk (2) | KOOTENAY FM. — Lower Mammoth Seam: claystone, stoney coal and thin coal lenses. | Jk (2b) | Upper Mammoth Seam: lower split. |
| Jk (1) | KOOTENAY FM. — Moose Mountain Sandstone. | Jk (2a) | Interbedded roudstone and claystone. |
| Jf | FERNIE FM. — Marine shale and siltstone. | | Lower Mammoth Seam. |

Crows Nest Resources Limited
EXPLORATION
CORBIN AREA
B.C. 771010

CROSS SECTION
SECTION 6250N

AUTHOR: G. HOFFMAN	SCALE: 1:2400	ENCLOSURE No.
DATE: 10-4-79	REVISED:	DRAWING No. HB-19B
To Accompany		

Map

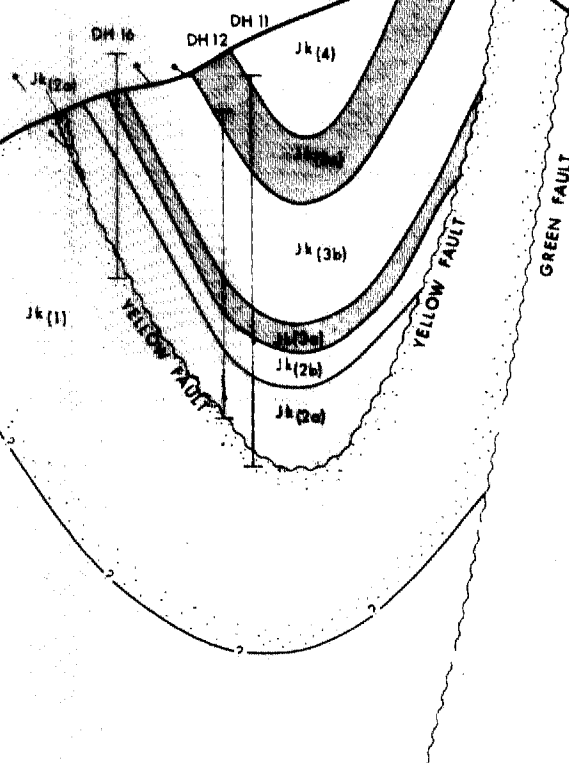
SECTION 6500N
WEST

SECTION 6500N
EAST

6 900
6 800
6 700
6 600
6 500
6 400
6 300
6 200
6 100
6 000
5 900
5 800
5 700
5 600
11000 EAST

6 900
6 800
6 700
6 600
6 500
6 400
6 300
6 200
6 100
6 000
5 900
5 800
5 700
5 600

0 50 100 200 300 400 ft



Jk(4)	KOOTENAY FM. - Upper sandstone and shale series.	Jk(3b)	Upper Mammoth Seam: upper split.
Jk(3b)	KOOTENAY FM. - Upper Mammoth Seam: coal with minor claystone bands and lenses.	Jk(3a)	Interbedded siltstone and mudstone.
Jk(2b)	KOOTENAY FM. - Lower Mammoth Seam: claystone, stoney coal and thin coal lenses.	Jk(2a)	Upper Mammoth Seam: lower split.
Jk(1)	KOOTENAY FM. - Moose Mountain Sandstone.	Jf	Interbedded mudstone and claystone.
Jf	FERNIE FM. - Marine shale and siltstone.		Lower Mammoth Seam.

Crows Nest Resources Limited
EXPLORATION

CORBIN AREA
B.C. 782 D

CROSS SECTION
SECTION 6500N

AUTHOR: G. HOFFMAN SCALE: 1:2400
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MAP 6.

SECTION 6750N
WEST

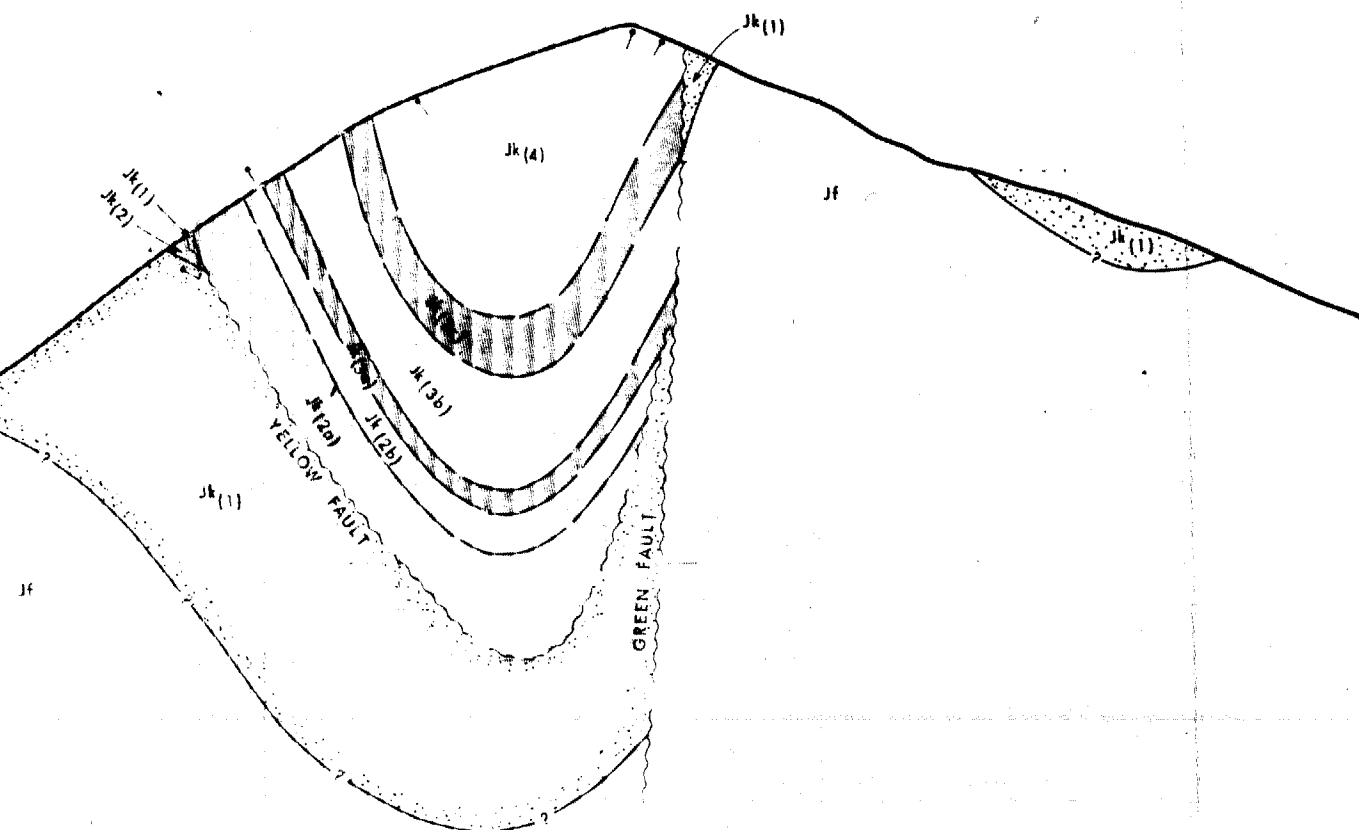
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EAST

6900
6800
6700
6600
6500
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6300
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5500

6900
6800
6700
6600
6500
6400
6300
6200
6100
6000
5900
5800
5700
5600
5500

11000 EAST

0 50 100 200 300 400 ft



Jk(4)	KOOTENAY FM. - Upper sandstone and shale series.	Jk(3b)	Upper Mammoth Seam: upper split.
Jk(3b)	KOOTENAY FM. - Upper Mammoth Seam: coal with minor claystone bands and lenses.	Jk(3a)	Interbedded siltstone and mudstone.
Jk(2)	KOOTENAY FM. - Lower Mammoth Seam: claystone, stoney coal and thin coal lenses.	Jk(2b)	Upper Mammoth Seam: lower split.
Jk(1)	KOOTENAY FM. - Moose Mountain Sandstone.	Jk(2a)	Interbedded mudstone and claystone.
Jf	FERNIE FM. - Marine shale and siltstone.	Jk(1a)	Lower Mammoth Seam.

Crows Nest Resources Limited
EXPLORATION

CORBIN AREA
B.C.

CROSS SECTION
SECTION 6750N

AUTHOR: G. HOFFMAN SCALE: 1:2400 ENCLOSURE No:
DATE: 27-03-79 REVISED: DRAWING No: HB-19D
To Accompany:

MAP 7.

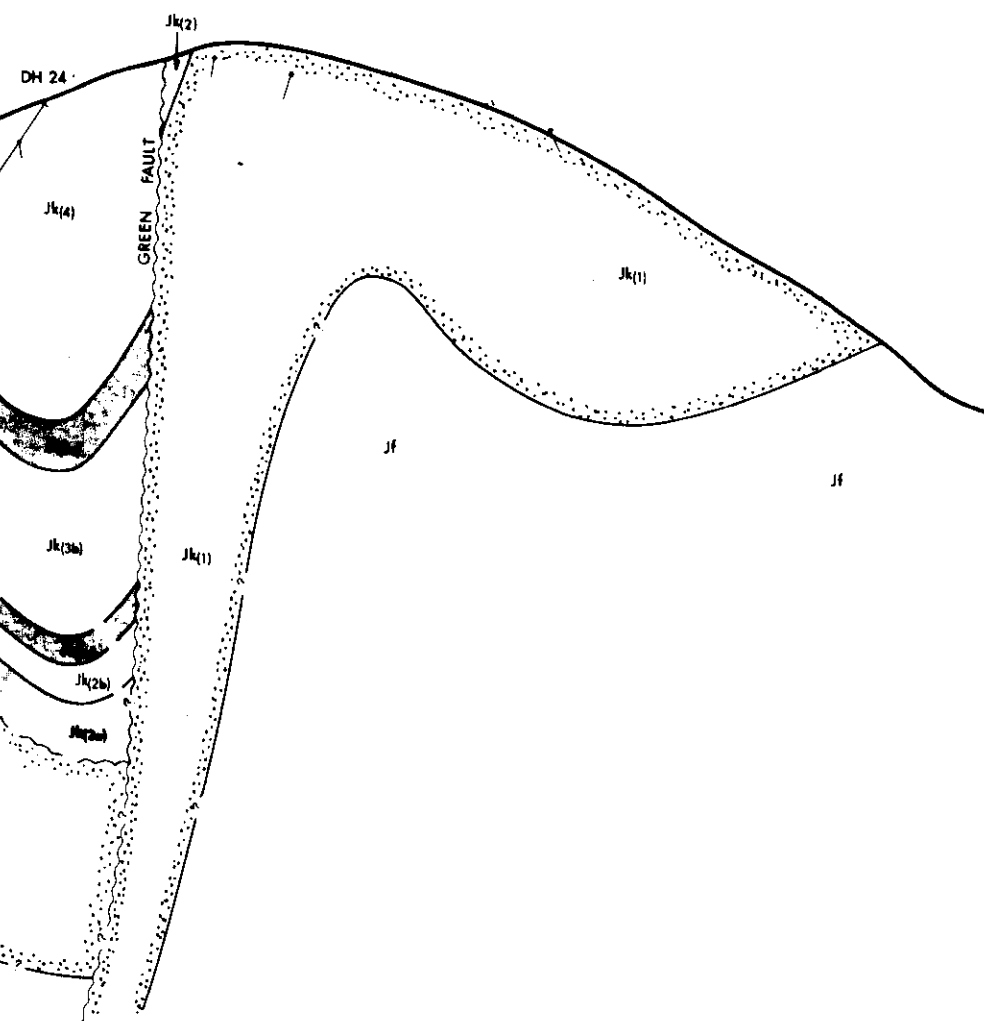
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WEST

7000
6900
6800
6700
6600
6500
6400
6300
6200
6100
6000
5900
5800
5700
11000 EAST

0 50 100 200 300 400 ft

SECTION 7000 N
EAST

7000
6900
6800
6700
6600
6500
6400
6300
6200
6100
6000
5900
5800
5700



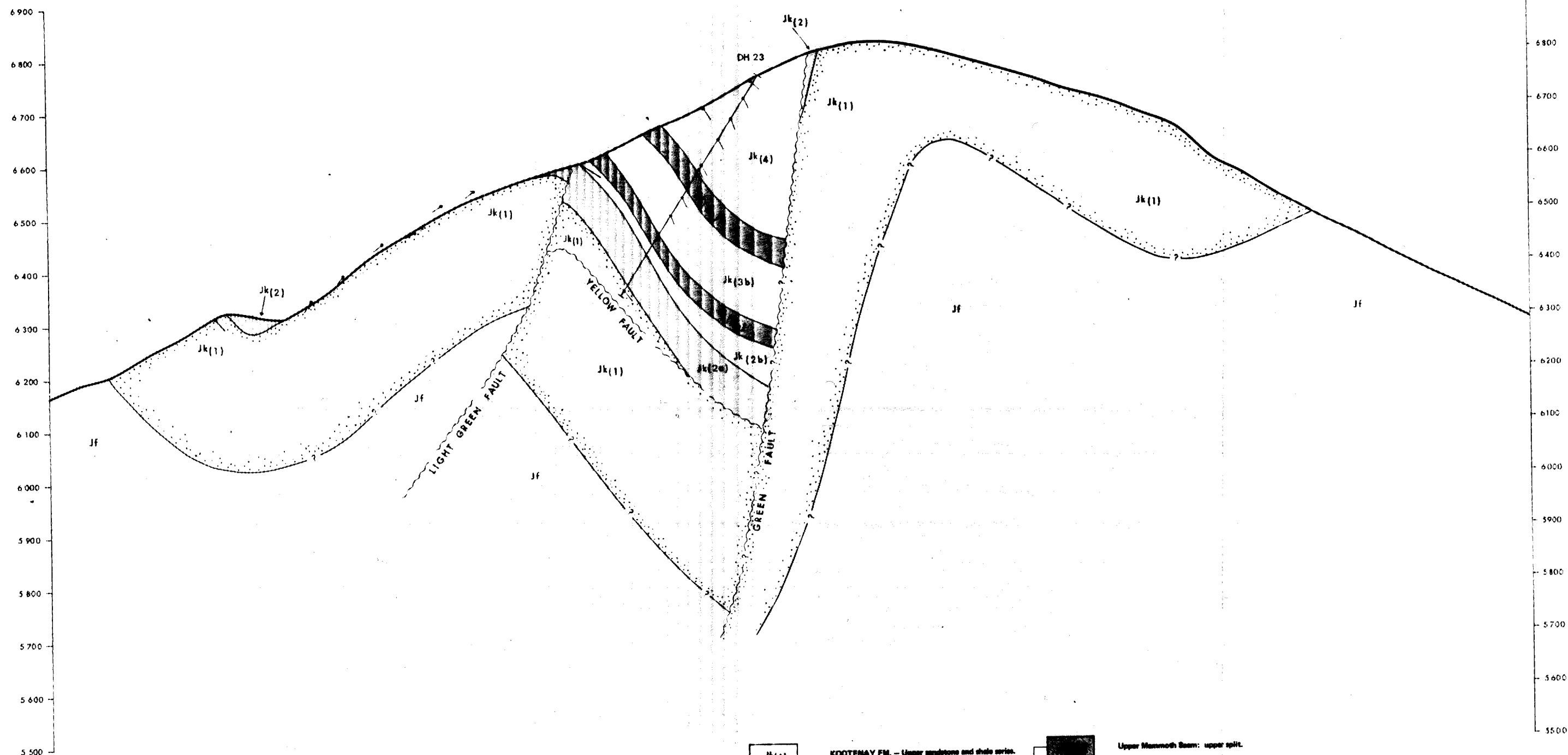
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|-------|---|--------|-------------------------------------|
| Jk(4) | KOOTENAY FM. - Upper sandstone and shale series. | Jk(3a) | Upper Mammoth Seam: upper split. |
| Jk(2) | KOOTENAY FM. - Upper Mammoth Seam: coal with minor claystone bands and lenses. | Jk(2a) | Interbedded siltstone and mudstone. |
| Jk(1) | KOOTENAY FM. - Lower Mammoth Seam: claystone, stoney coal and thin coal lenses. | Jk(2b) | Upper Mammoth Seam: lower split. |
| Jf | KOOTENAY FM. - Moose Mountain Sandstone. | Jk(1) | Interbedded mudstone and claystone. |
| | FERME FM. - Marine shale and siltstone. | Jf | Lower Mammoth Seam. |

Crows Nest Resources Limited			
EXPLORATION			
CORBIN AREA B.C. 78(2)B			
CROSS SECTION SECTION 7000 N			
AUTHOR G. HOFFMAN	SCALE 1:2400	ENCLOSURE No.	
DATE 22-02-79	REVISED	DRAWING No HB-19 E	
To Accompany			

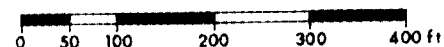
MAR. 8.

SECTION 7250N
WEST

SECTION 7250N
EAST



- | | | | |
|-------|--|--------|-------------------------------------|
| Jk(4) | KOOTENAY FM. - Upper sandstone and shale series. | | Upper Mammoth Seam: upper split. |
| Jk(3) | KOOTENAY FM. - Upper Mammoth Seam: coal with minor claystone bands and lenses. | Jk(3b) | Interbedded siltstone and mudstone. |
| Jk(2) | KOOTENAY FM. - Lower Mammoth Seam: claystone, stony coal and thin coal lenses. | Jk(2b) | Upper Mammoth Seam: lower split. |
| Jk(1) | KOOTENAY FM. - Moose Mountain Sandstone. | Jk(2a) | Interbedded mudstone and claystone. |
| Jf | FERNIE FM. - Marine shale and siltstone. | | Lower Mammoth Seam. |



Crows Nest Resources Limited
EXPLORATION

CORBIN AREA
B.C.

CROSS SECTION
SECTION 7250N

AUTHOR: G. HOFFMAN	SCALE: 1:2400	ENCLOSURE No:
DATE: 19-03-79	REVISED:	DRAWING No: HD-19F
To Accompany:		

Map 5

SECTION 7500N
WEST

SECTION 7500N
EAST

7 100
7 000
6 900
6 800
6 700
6 600
6 500
6 400
6 300
6 200
6 100
6 000
5 900
5 800
5 700
11000 EAST

7 100
7 000
6 900
6 800
6 700
6 600
6 500
6 400
6 300
6 200
6 100
6 000
5 900
5 800
5 700

0 50 100 200 300 400 ft.

Jk (4)
Jk (3b)
Jk (3a)
Jk (2)
Jk (1)
Jf

KOOTENAY FM. -- Upper sandstone and shale series.
KOOTENAY FM. -- Upper Mammoth Seam: coal with minor claystone bands and lenses.
KOOTENAY FM. -- Lower Mammoth Seam: claystone, stoney coal and thin coal lenses.
KOOTENAY FM. -- Moose Mountain Sandstone.
FERNIE FM. -- Marine shale and siltstone.

Upper Mammoth Seam: upper split.
Interbedded siltstone and mudstone.
Upper Mammoth Seam: lower split.
Interbedded mudstone and claystone.
Lower Mammoth Seam.

Crows Nest Resources Limited

EXPLORATION

CORBIN AREA
B.C.

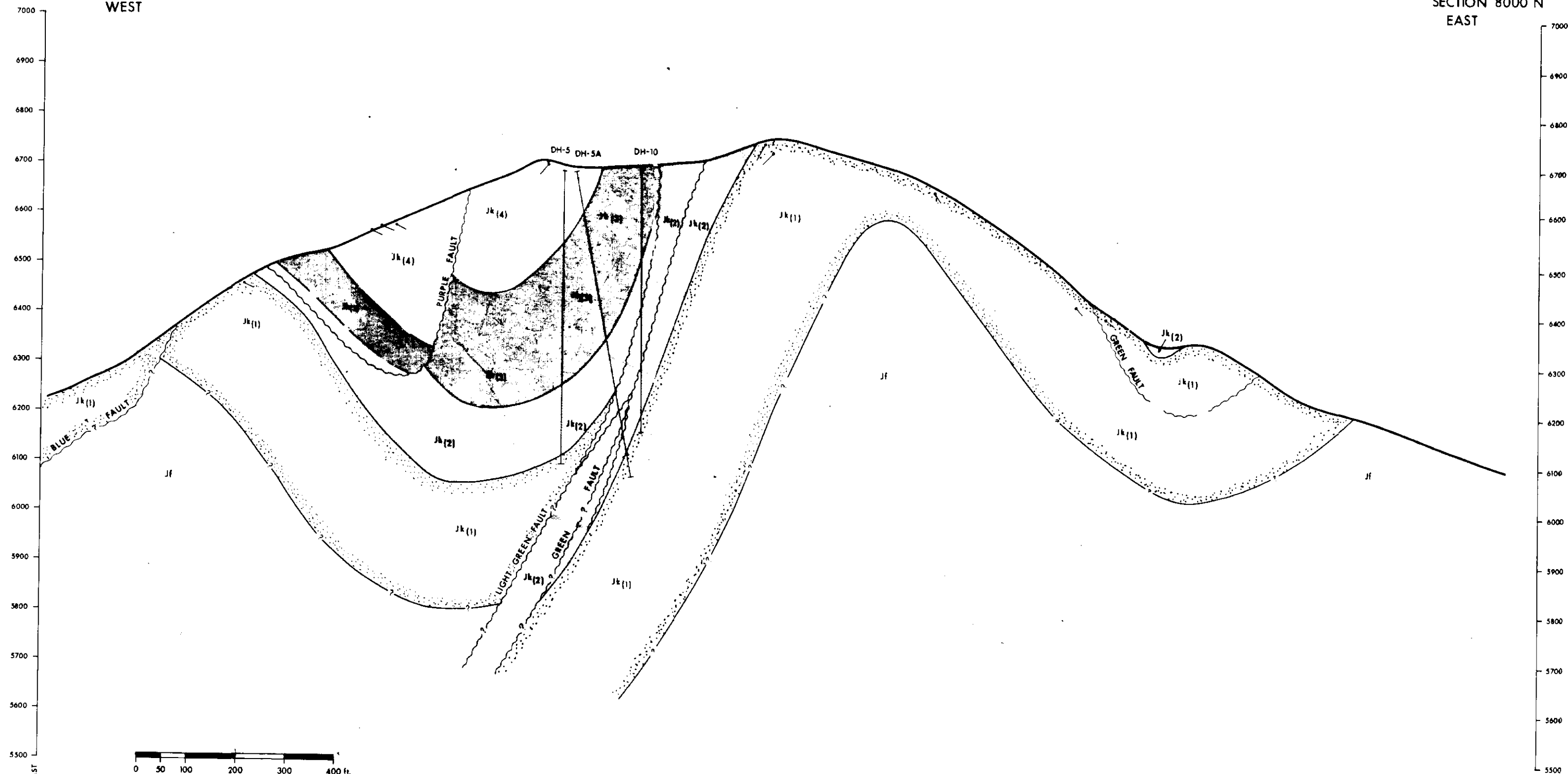
CROSS SECTION
SECTION 7500N

AUTHOR: G. HOFFMAN SCALE: 1:2400 ENCLOSURE No.
DATE: 3 / 79 REVISED: DRAWING No: HD-19 G

Map 10

SECTION 8000 N
WEST

SECTION 8000 N
EAST



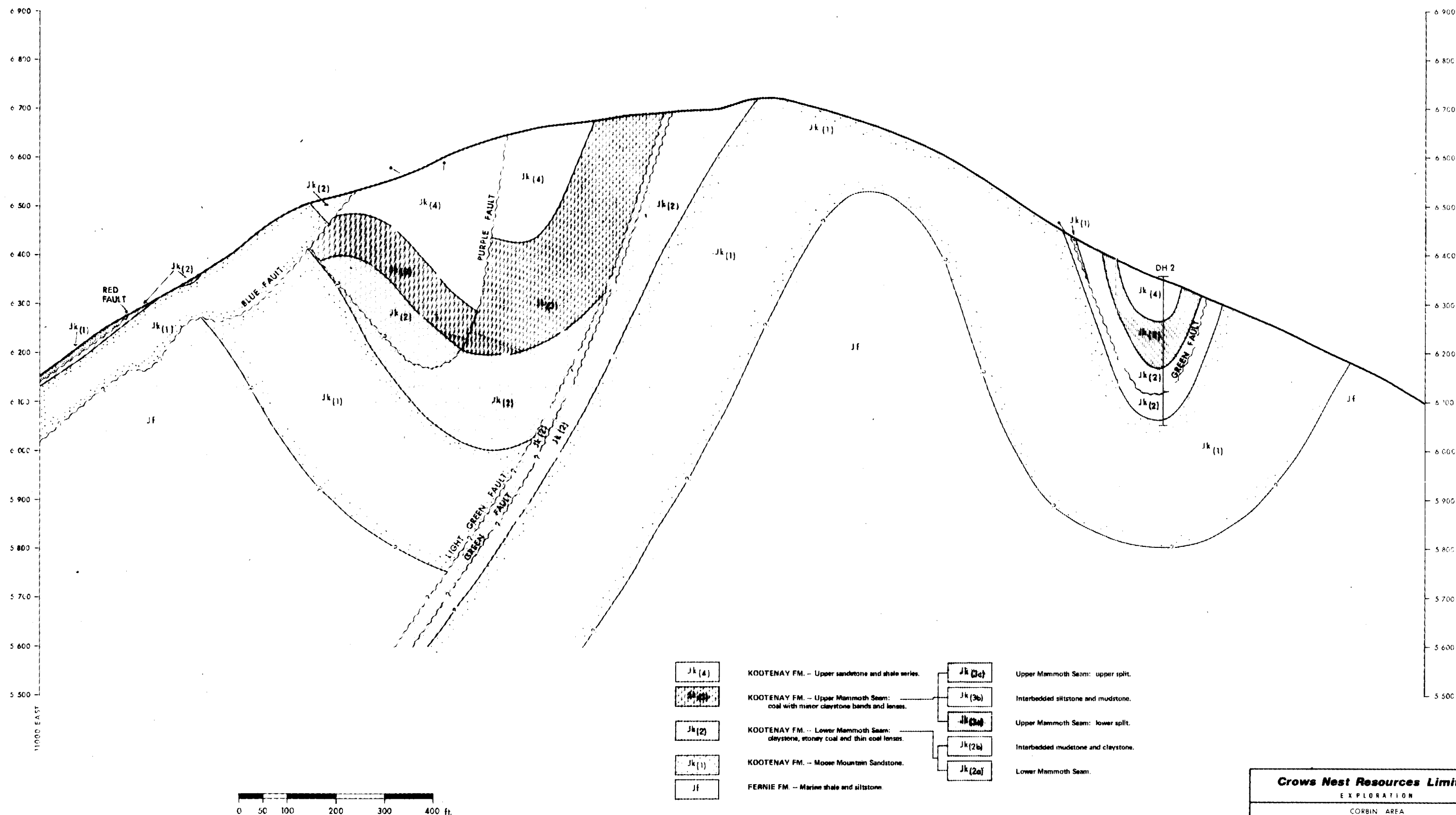
- Jk(4) KOOTENAY FM. - Upper sandstone and shale series.
- Jk(2) KOOTENAY FM. - Upper Mammoth Basin: coal with minor claystone bands and lenses.
- Jk(1) KOOTENAY FM. - Lower Mammoth Basin: claystone, stony coal and thin coal lenses.
- Jf KOOTENAY FM. - Moose Mountain Sandstone.
- Jf FERNE FM. - Marine shale and siltstone.

Crows Nest Resources Limited		
EXPLORATION		
CORBIN AREA B.C. 78 28		
CROSS SECTION		
SECTION 8000N		
AUTHOR G. HOFFMAN	SCALE 1:2400	ENCLOSURE No.
DATE 22-02-79	REVISED	DRAWING No. HB-191
To Accompany		

MAR 12

SECTION 8250 N
WEST

SECTION 8250 N
EAST



0 50 100 200 300 400 ft.

Crows Nest Resources Limited

EXPLORATION

CORBIN AREA
B.C.

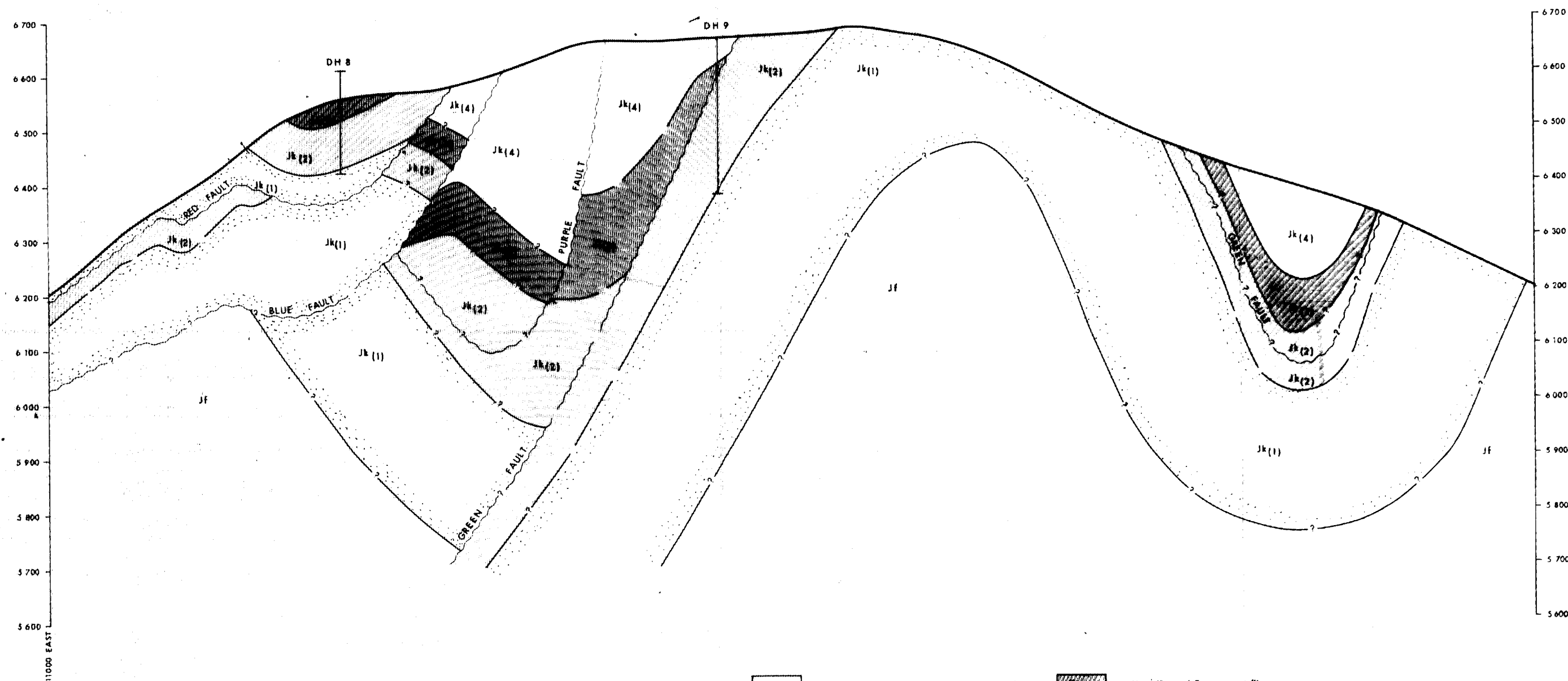
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SECTION 8250N

AUTHOR: G. HOFFMAN
DATE: 2-8-79
To Accompany:
SCALE: 1"=2400'
REVISED:
ENCLOSURE NO:
DRAWING NO: HB-19 J

Map 13

SECTION 8500N
WEST

SECTION 8500N
EAST



- | | | | |
|---------|--|---------|-------------------------------------|
| Jk (4) | KOOTENAY FM. - Upper sandstone and shale series. | Jk (3b) | Upper Mammoth Seam: upper split. |
| Jk (3b) | KOOTENAY FM. - Upper Mammoth Seam: coal with minor claystone bands and lenses. | Jk (3a) | Interbedded siltstone and mudstone. |
| Jk (2b) | KOOTENAY FM. - Lower Mammoth Seam: claystone, stony coal and thin coal lenses. | Jk (2a) | Upper Mammoth Seam: lower split. |
| Jk (2a) | | Jk (2) | Interbedded mudstone and claystone. |
| Jk (1) | KOOTENAY FM. - Moose Mountain Sandstone. | Jk (1) | Lower Mammoth Seam. |
| Jf | FERNIE FM. - Marine shale and siltstone. | | |

Crows Nest Resources Limited
EXPLORATION

CORBIN AREA
B C

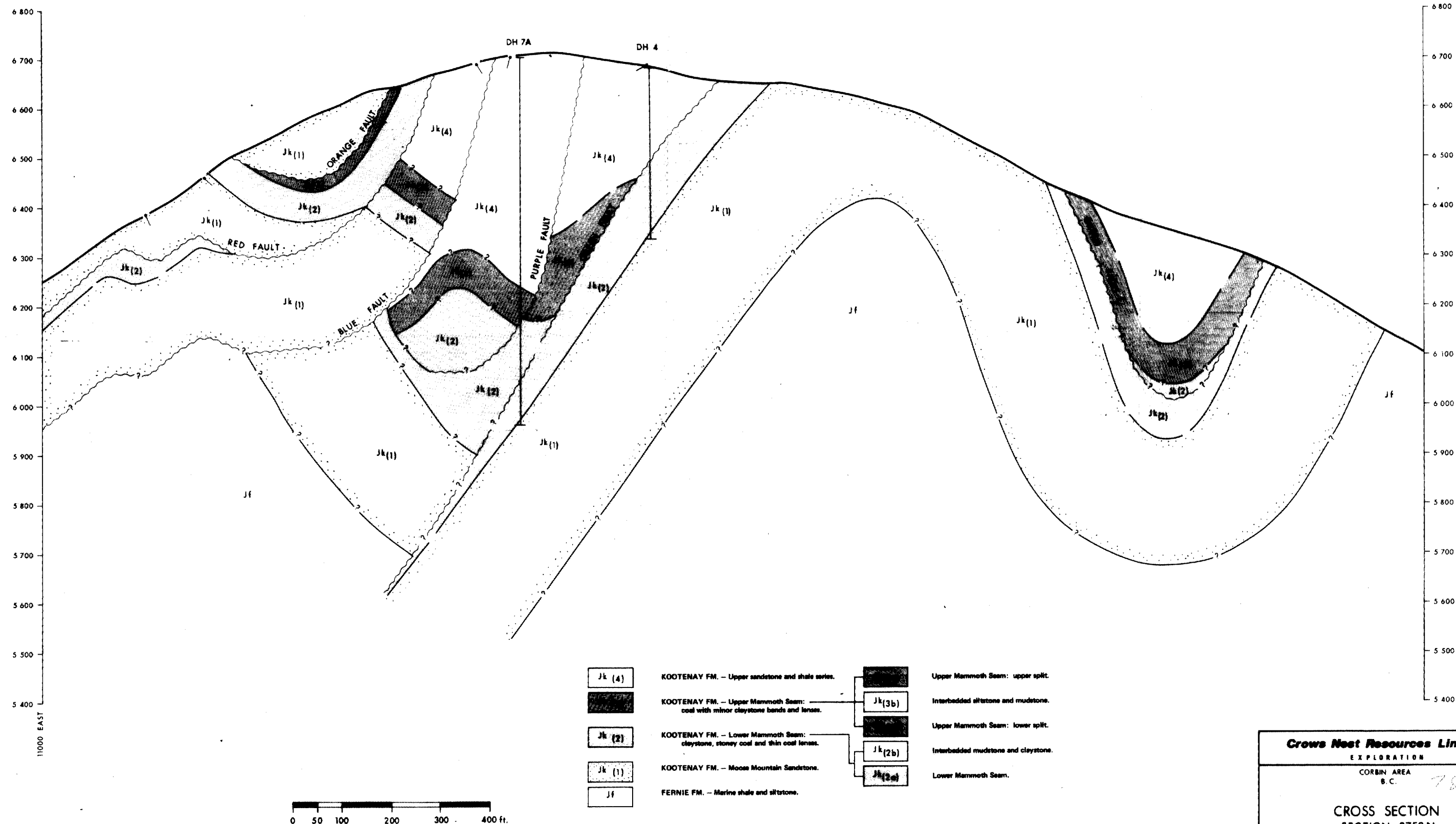
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SECTION 8500N

AUTHOR: G. HOFFMAN SCALE: 1:2400 ENCLOSURE No.
DATE: 7-6-79 REVISED: DRAWING No: HB-19K
To Accompany:

MAP 14

SECTION 8750N
WEST

SECTION 8750N
EAST



Crows Nest Resources Limited

EXPLORATION

CORBIN AREA
B.C.

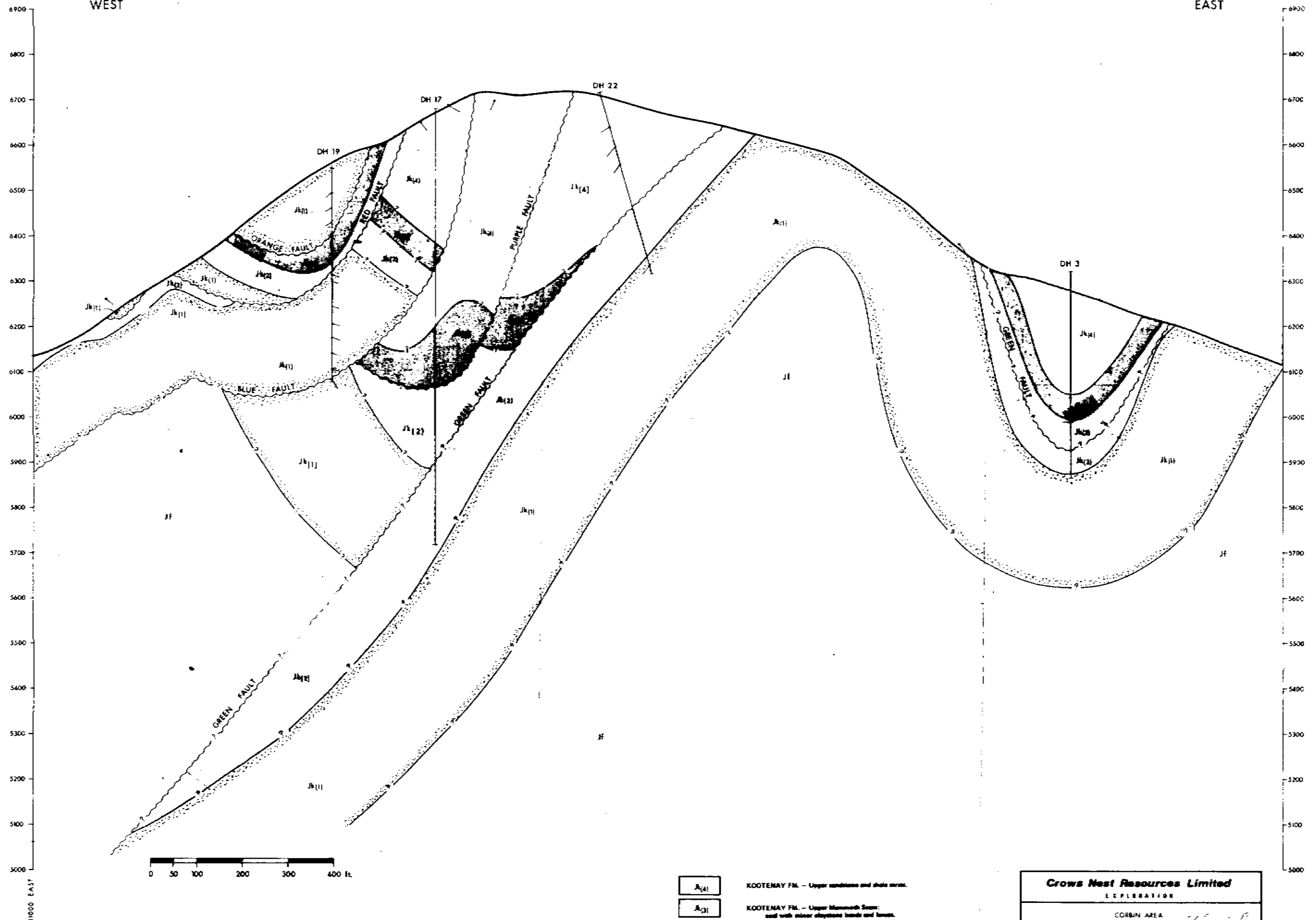
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AUTHOR: G. HOFFMAN SCALE: 1:2400 ENCLOSURE No.
DATE: 10-4-79 REVISED: DRAWING No: HB-19L
To Accompany

map.15

SECTION 9000 N
WEST

SECTION 9000 N
EAST



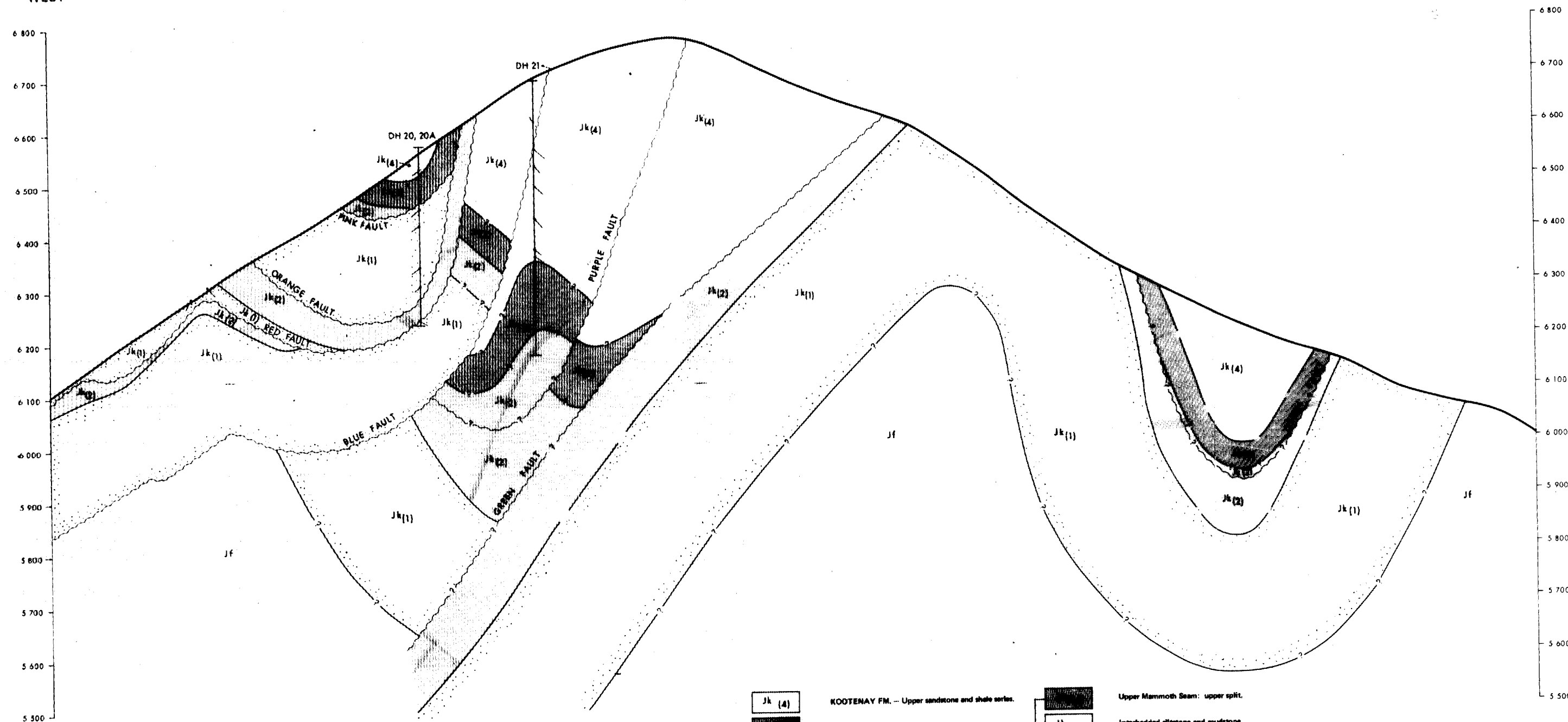
- Jk(4) KOOTENAY FM. - Upper sandstone and shale series.
- Jk(3) KOOTENAY FM. - Upper Mammoth Seam: coal with minor claystone bands and lenses.
- Jk(2) KOOTENAY FM. - Lower Mammoth Seam: claystone, stony coal and thin coal lenses.
- Jk(1) KOOTENAY FM. - Moose Mountain Sandstone.
- Jf FERNE FM. - Marine shale and siltstone.

Crows Nest Resources Limited			
EXPLORATION			
CORBIN AREA S.C.			
CROSS SECTION SECTION 9000N			
AUTHOR: G. HOFFMAN	SCALE: 2" = 100'	ENCLOSURE NO.	
DATE: 22-02-79	REVISED:	DRAWING NO. HIB-19M	
To Accompany:			

MAP 16

SECTION 9250N
WEST

SECTION 9250N
EAST



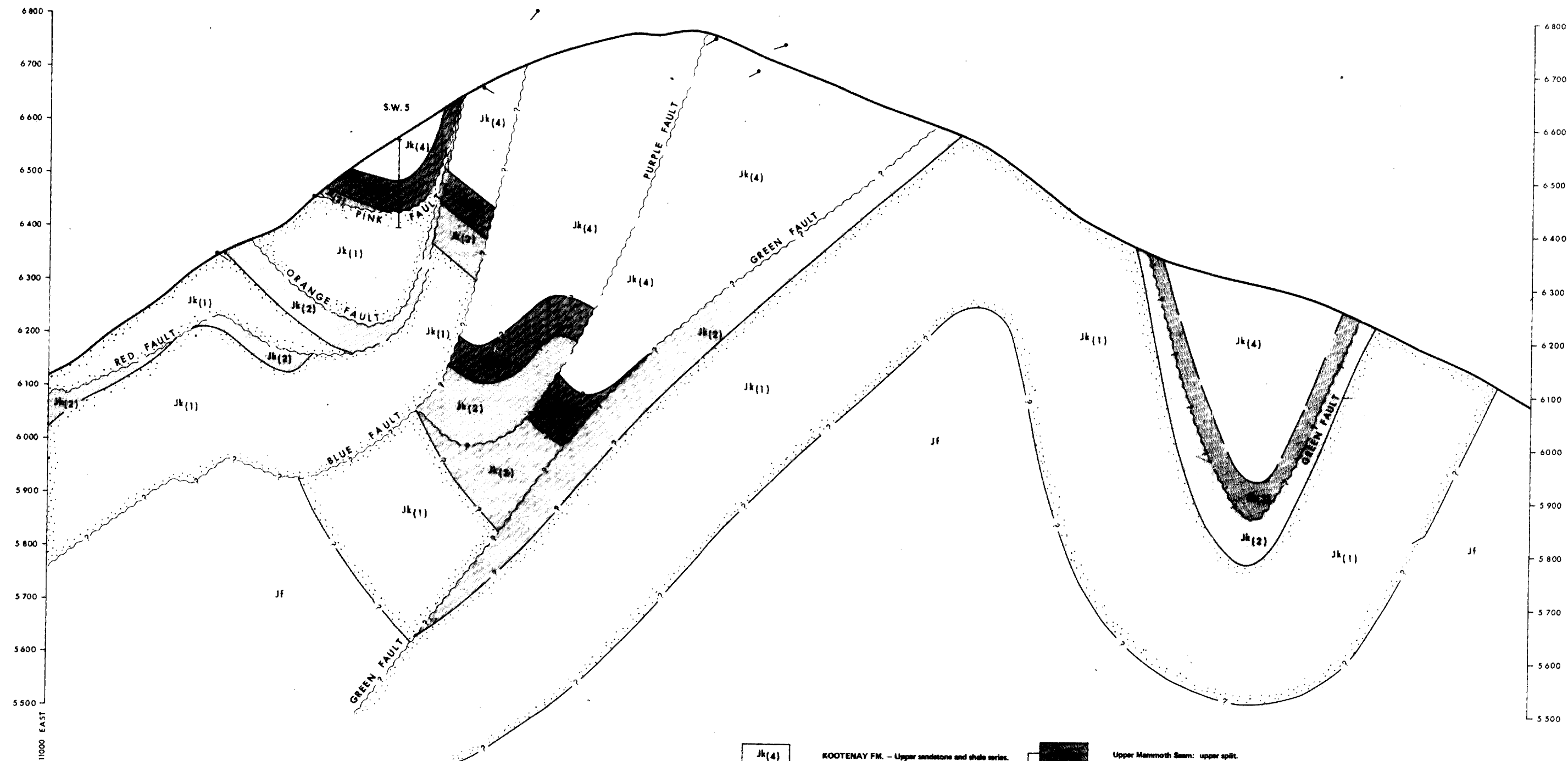
- | | | | |
|--------|---|--------|-------------------------------------|
| Jk (4) | KOOTENAY FM. — Upper sandstone and shale series. | Jk(3b) | Upper Mammoth Seam: upper split. |
| Jk (2) | KOOTENAY FM. — Upper Mammoth Seam: coal with minor claystone bands and lenses. | Jk(2b) | Interbedded siltstone and mudstone. |
| Jk (1) | KOOTENAY FM. — Lower Mammoth Seam: claystone, stoney coal and thin coal lenses. | Jk(2a) | Upper Mammoth Seam: lower split. |
| Jf | KOOTENAY FM. — Moose Mountain Sandstone. | | Interbedded mudstone and claystone. |
| | FERNIE FM. — Marine shale and siltstone. | | Lower Mammoth Seam. |

Crows Nest Resources Limited		
EXPLORATION		
CORBIN AREA B. C. 78/21B		
CROSS SECTION SECTION 9250N		
AUTHOR: G. HOFFMAN	SCALE: 1" = 2400'	ENCLOSURE No.
DATE: 10 - 4 - 79	REVISED:	DRAWING No: HB - 19 N
To Accompany		

Map 17

SECTION 9500N
WEST

SECTION 9500N
EAST



0 50 100 200 300 400 ft

- | | | | |
|--------|---|--------|-------------------------------------|
| Jk(4) | KOOTENAY FM. - Upper sandstone and shale series. | Jk(3b) | Upper Mammoth Seam: upper split. |
| Jk(3a) | KOOTENAY FM. - Upper Mammoth Seam: coal with minor claystone bands and lenses. | Jk(3b) | Interbedded siltstone and mudstone. |
| Jk(2) | KOOTENAY FM. - Lower Mammoth Seam: claystone, stoney coal and thin coal lenses. | Jk(2b) | Upper Mammoth Seam: lower split. |
| Jk(1) | KOOTENAY FM. - Moose Mountain Sandstone. | Jk(2b) | Interbedded mudstone and claystone. |
| Jf | FERNIE FM. - Marine shale and siltstone. | Jk(2a) | Lower Mammoth Seam. |

Crows Nest Resources Limited

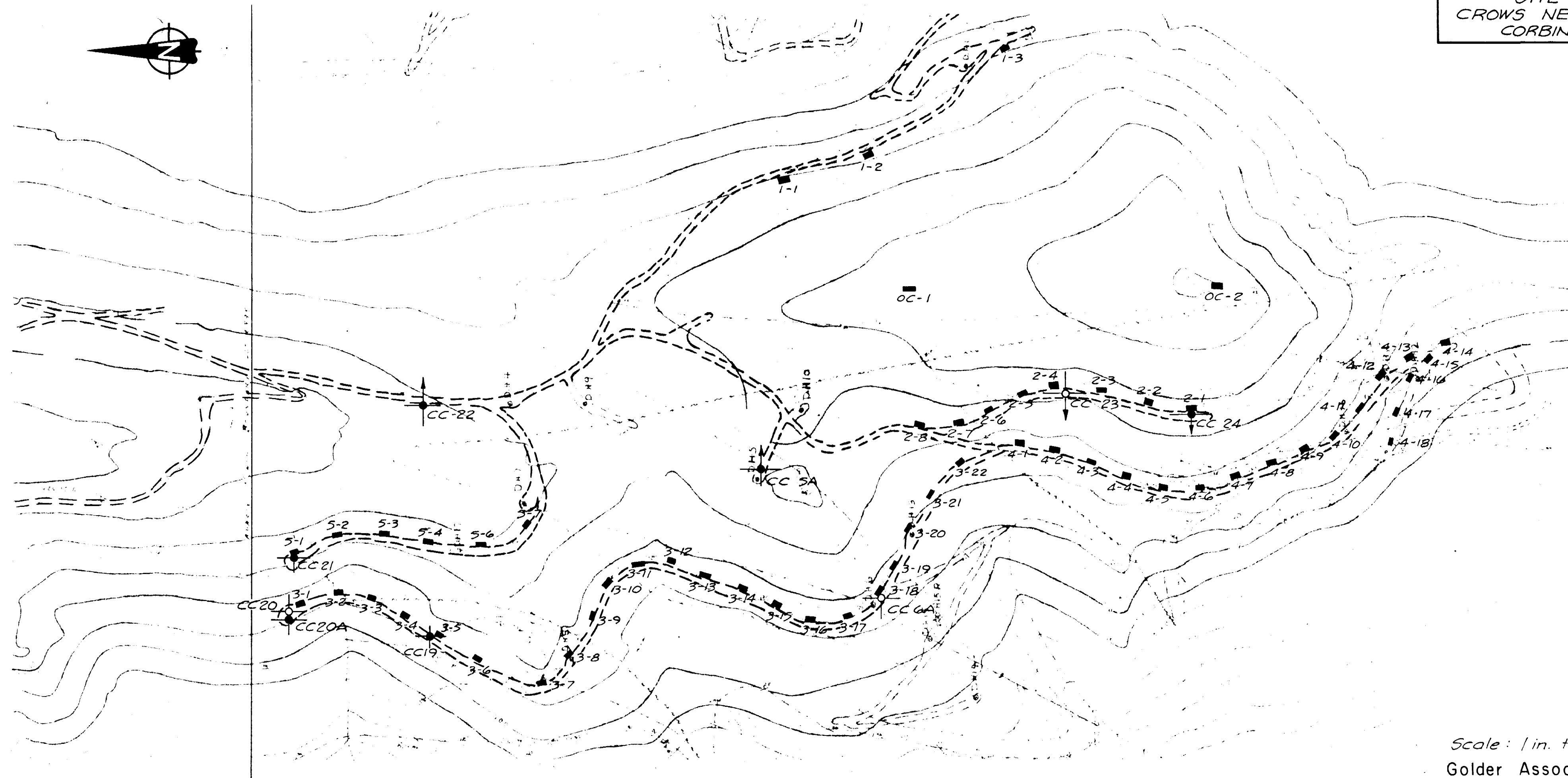
EXPLORATION

CORBIN AREA
B.C.

CROSS SECTION
SECTION 9500N

AUTHOR: G. HOFFMAN	SCALE: 1" = 2400'	ENCLOSURE No.
DATE: 20-3-79	REVISED:	DRAWING No: HB-190
To Accompany		

MAR 18



Legend

Contour interval 50 ft. (15.24 m)

== Road

■ Mapping window

• Old drillhole

⊕ and ⊖ 1978 drillhole - vertical and inclined

⊕ 1978 drillhole with piezometers installed

Note

Locations are approximate as no survey data is available at

Reference

Plan from Crows Nest Industries titled Geology Jan./76.

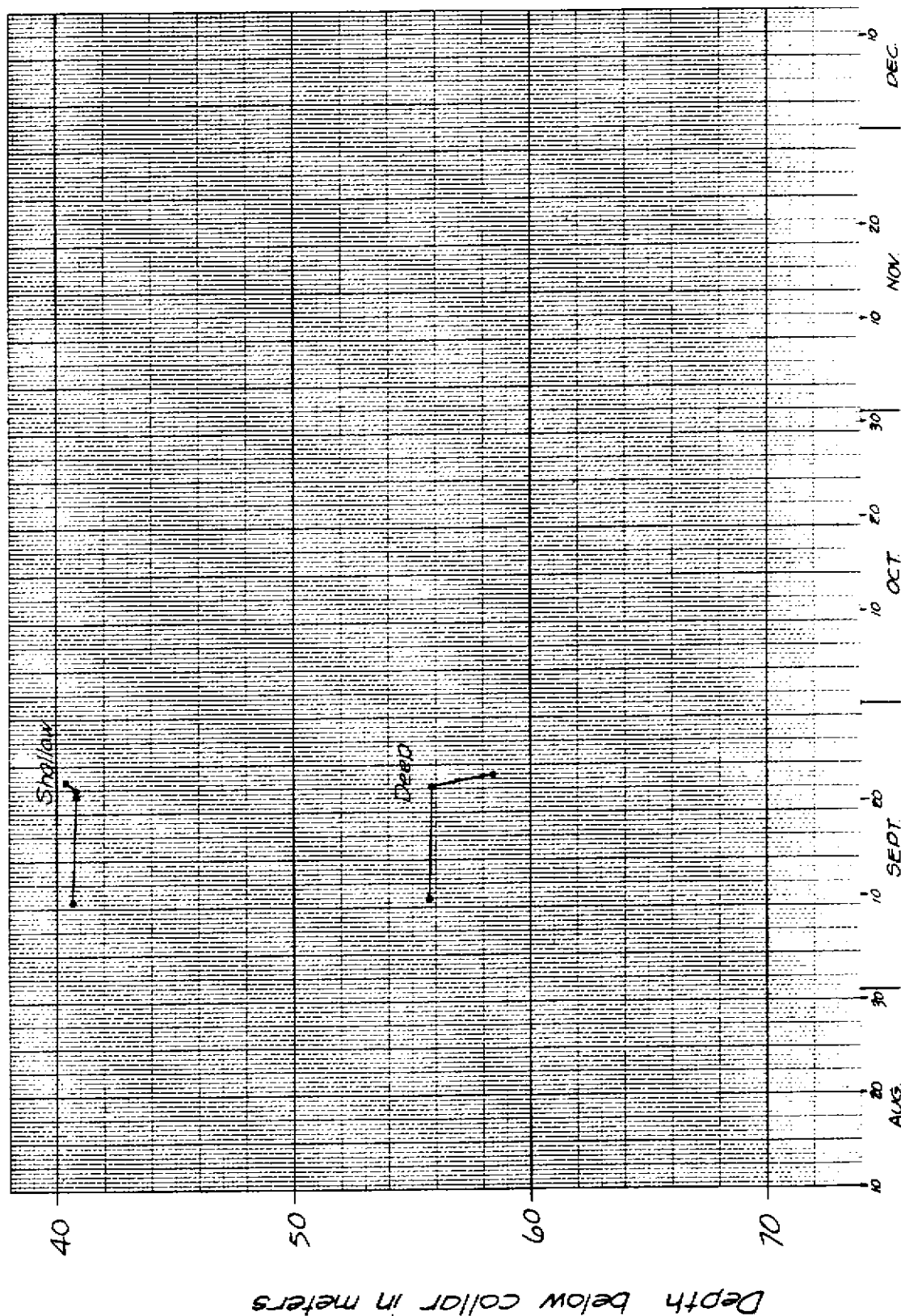
Scale: 1 in. to 200 ft.
Golder Associates

Drawn RD
Reviewed JH
Date Nov. 78

PIEZOMETER RESPONSE - C.C. 5A CORBIN - COAL MTN.

Figure

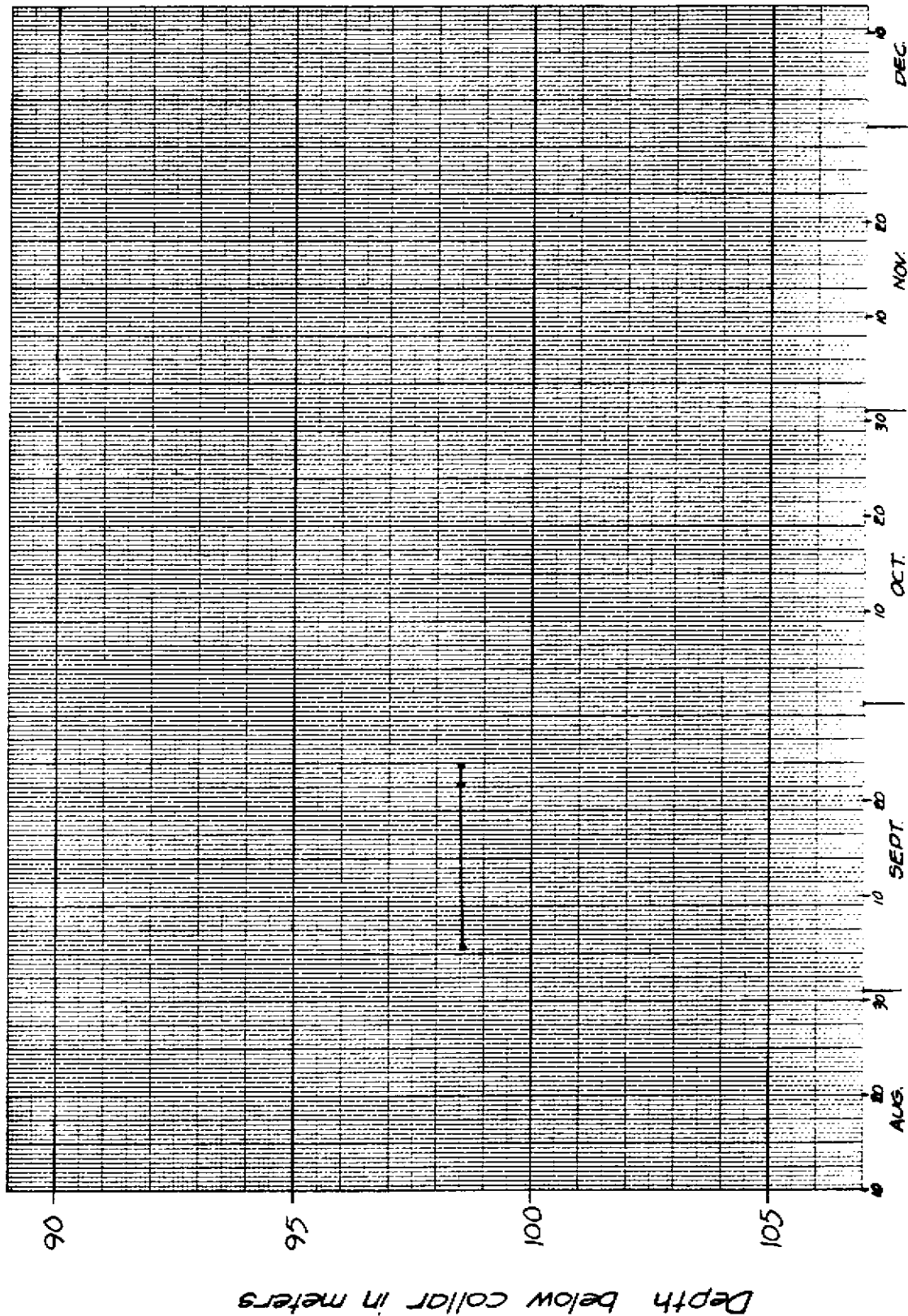
3



Note - Corrected to vertical

PIEZOMETER RESPONSE - C.C. 19 CORBIN - COAL MTN.

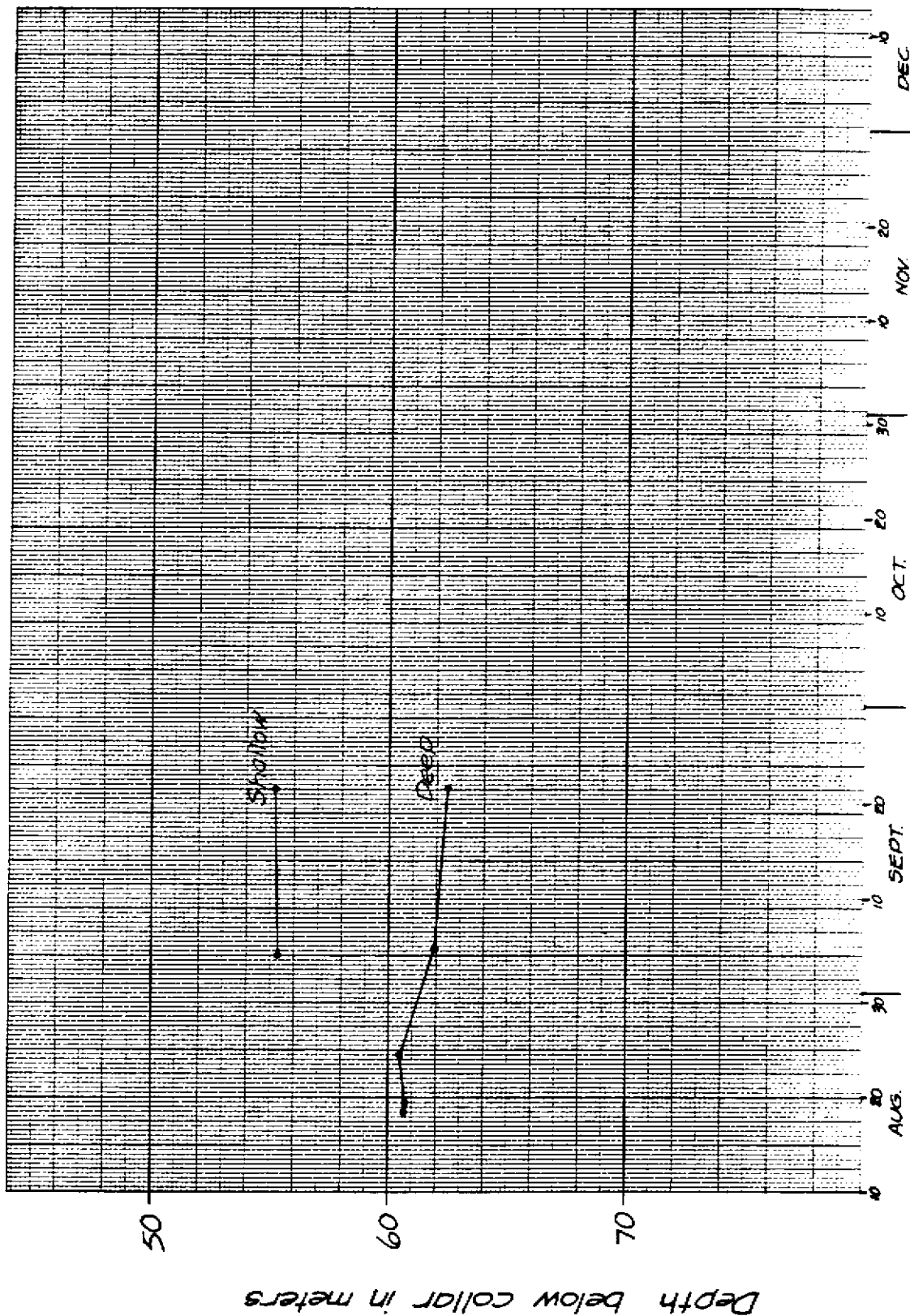
Figure 4



Project No. V10358A Drawn R.D. Reviewed A.D. Date Nov. 78

PIEZOMETER RESPONSE - CC 20A CORBIN - COAL MTN.

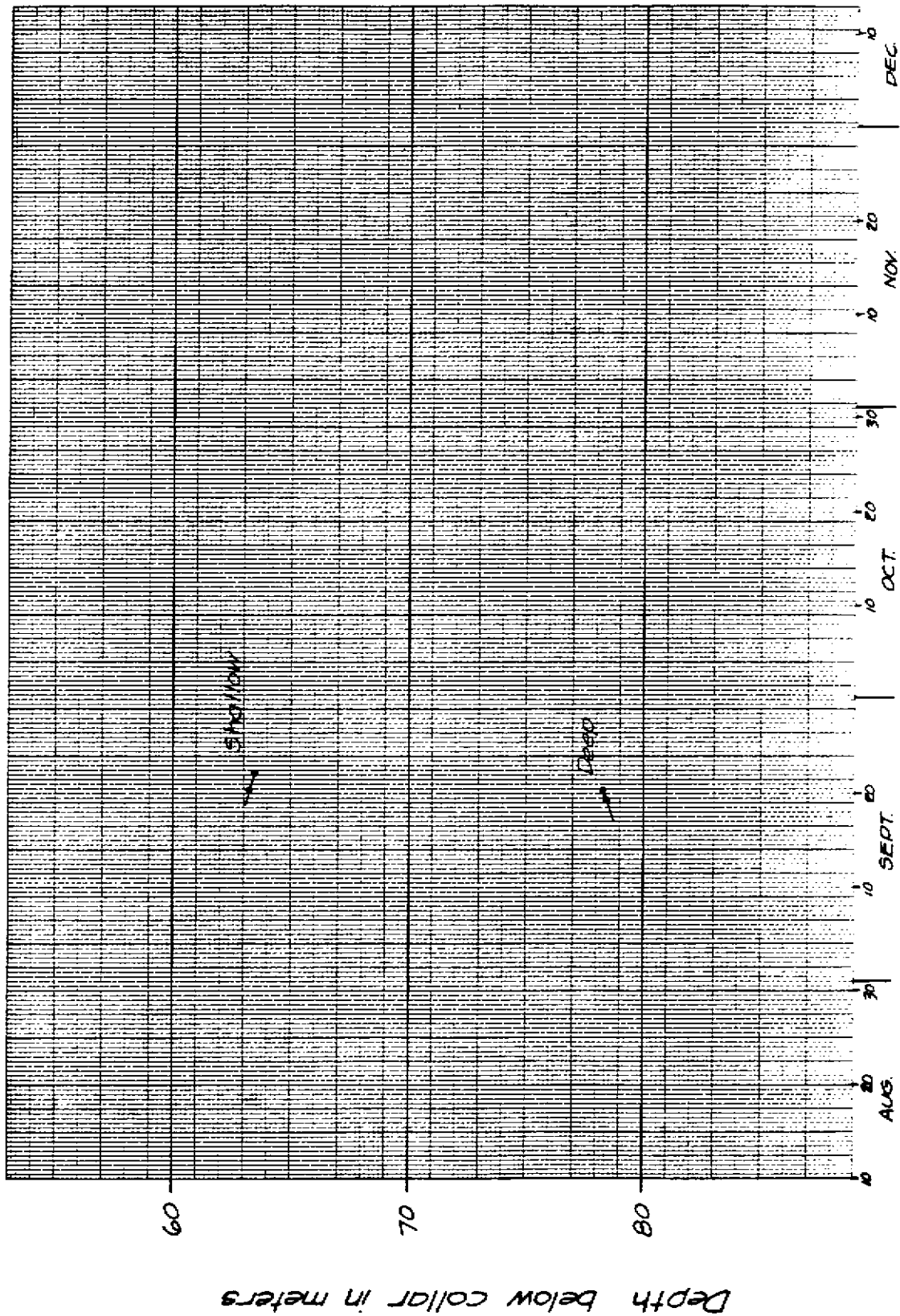
Figure 5



PIEZOMETER RESPONSE - C.C. 21 CORBIN - COAL MTN.

Figure

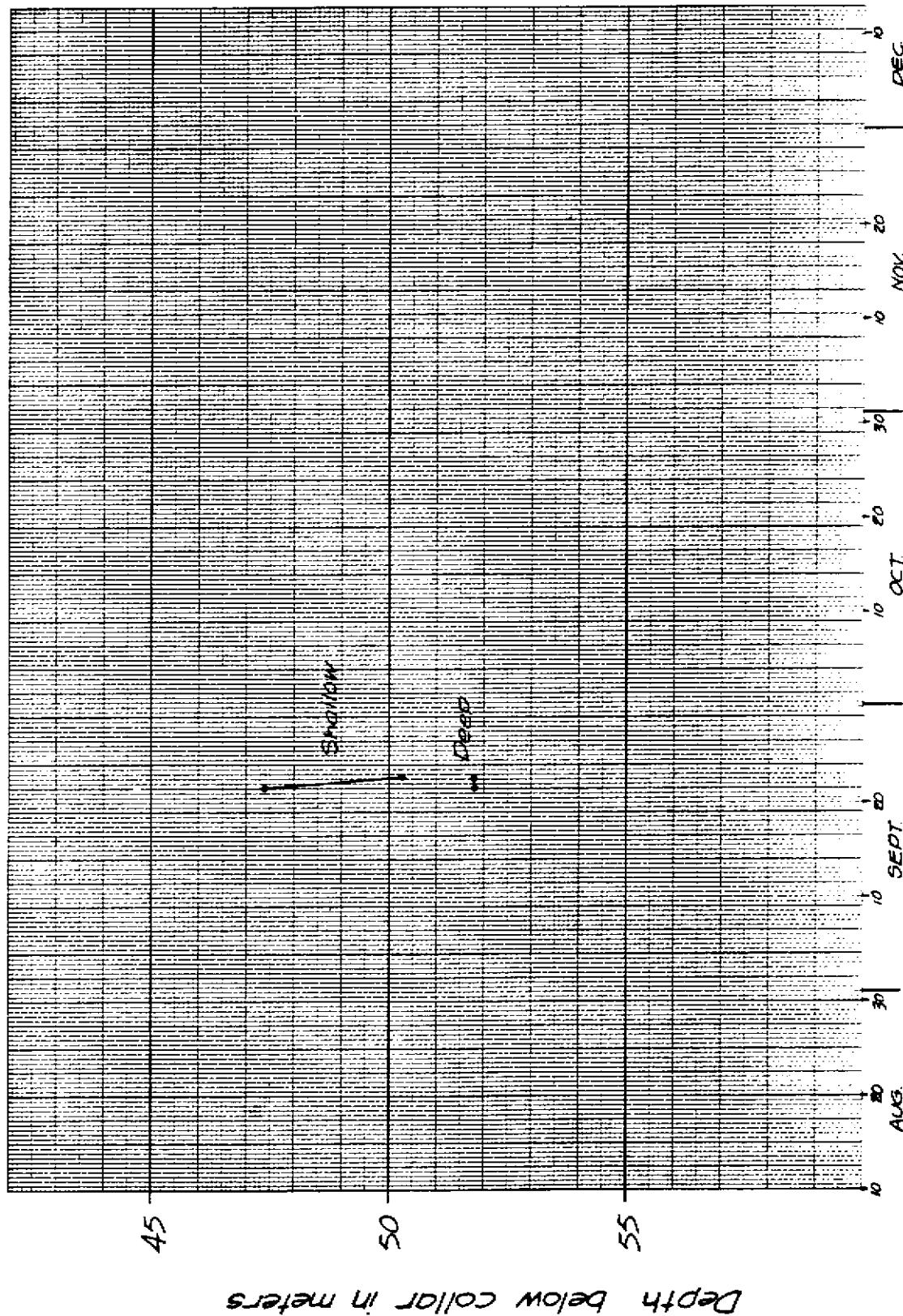
6



PIEZOMETER RESPONSE - C.C. 22 CORBIN - COAL MTN.

Figure

7

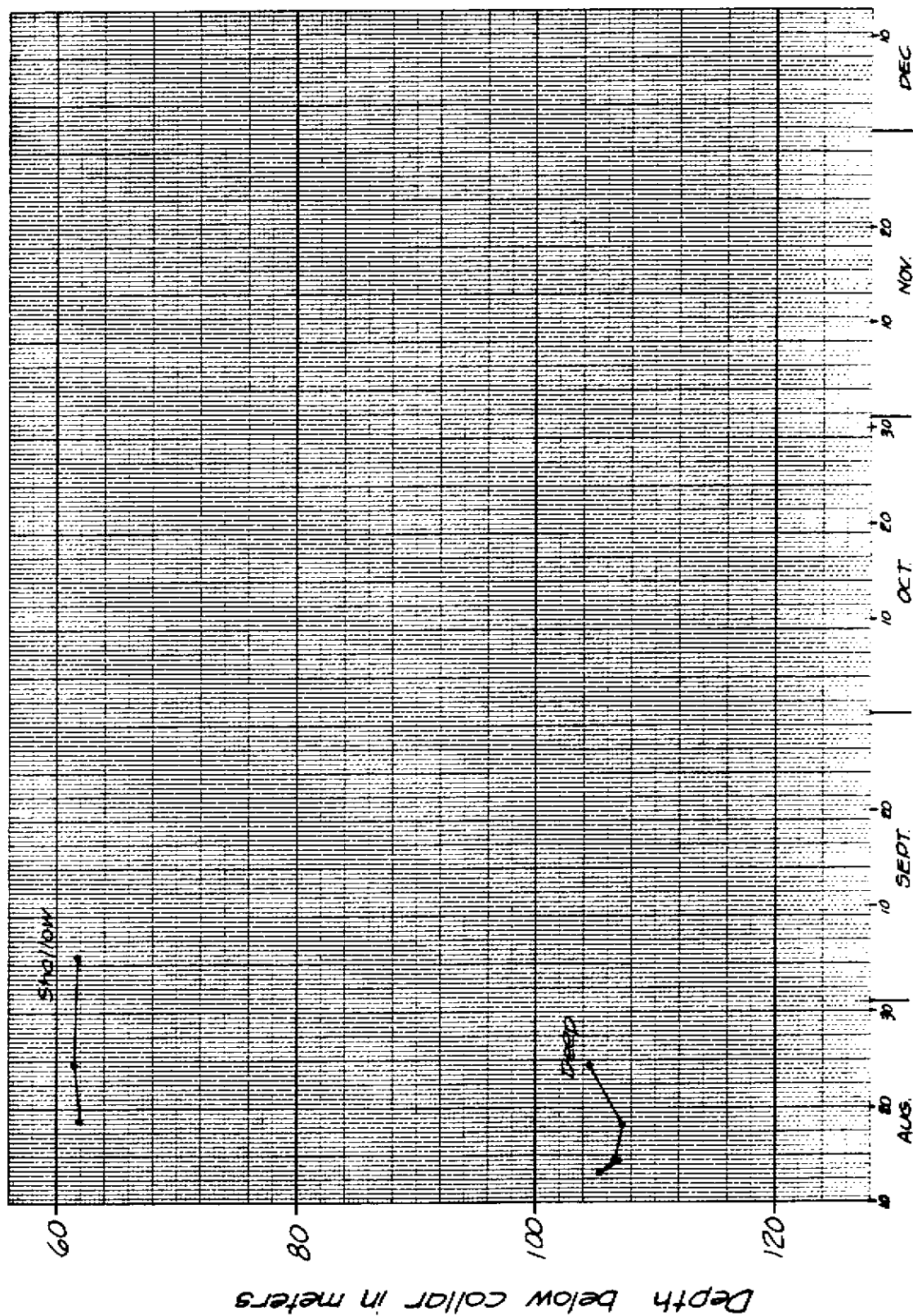


Note - Corrected to vertical

PIEZOMETER RESPONSE - CC. 24 CORBIN - COAL MTN.

Figure

8



Note - Corrected to vertical

APPENDIX I

Core Log Format

APPENDIX ICore Log Format

Summary geotechnical logs contain the following data:-

Core Loss: For each drill run, the ratio of core not recovered to length drilled is recorded as a percentage and is presented as a histogram.

Graphic Lithology: Lithology is presented in a generalized form, showing only major horizons, and it should only be used for comparison with other data. This column also indicates any major structures encountered, i.e. folds and faults. Figure I-1 contains the legend for the lithology.

Bedding: Where ever there is discernable bedding in the core, the average angle between the bedding planes and the core axis has been recorded and displayed graphically. For vertical holes this is the complementary angle to the bedding dip angle.

Logging Method: In selected sections, joint dip directions were referenced to the bedding direction. This detailed logging was supplemented with a summary structural logging which recorded only core axis to feature angles. In sections of poor core condition, no structure was recorded. Figure I-1 shows the codes in this column indicating these three degrees of detail.

Core Condition: This column graphically shows the general condition of the core at the time of logging. This was a function of:-

- 1) the original rock condition
- 2) the degree of disturbance during drilling
- 3) the degradation of the core through drying.

Categories covered are:-

- Broken core: core lengths are generally less than 2.5 cm, but are recognizable as core.
- Shattered core: core is broken to the point where no structure can be recognized.
- Breccia/Gouge: these zones contain core that is softened and/or brecciated, generally by faulting.
- Desiccation: the core has dried and irregular desiccation fractures had occurred before logging.

Figure I-1 is the legend for this column.

Rock Quality Designation (RQD): The RQD is a statistical evaluation of the rock quality, given as a percentage. It is derived by the formulae:-

$$RQD = ((\sum l)/L) \times 100$$

where:- l = any length of core 10 cm or longer as recovered from the core barrel, for any given length drilled.

L = the length drilled.

The RQD has been calculated for each drill run and is presented as a histogram.

Natural Fracture Frequency (NFF): This is the number of natural fractures encountered divided by the length drilled. Where a high percentage of the core is shattered or lost the NFF has been left blank. The value is presented as a histogram.

Piezometer Installation: Piezometers have been installed where possible. This column shows the depth of all the piezometer(s), the location of the filter zones, the location and type of seals used, and the latest water level available. Figure I-1 is a legend for symbols used in the piezometer column. Piezometers are discussed further in Section 3.1.

LEGEND FOR CORE LOGSGRAPHICLITHOLOGY

Sandstone

Mudstone-Siltstone

Coal

LOGGING

Detailed Log - Referenced to Bedding



Summary Structure - Bedding & Joint Dips



Summary Log no Structure Logged due to Core Condition

CORE CONDITION

Good Solid Core



Desiccation Fracturing from Drying



Broken Core (Piece Lengths less than 2.5 cm)



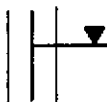
Shattered Core (Core cannot be Reassembled)



Lost Core



Breccia & Gouge

PIEZOMETER INSTALLATION

Piezometer Standpipe - Showing Last Measured Water Level. Dry beside the plot indicates the piezometer or open hole is dry.



Cave



Gravel



Sand



Bentonite



Grout

APPENDIX II

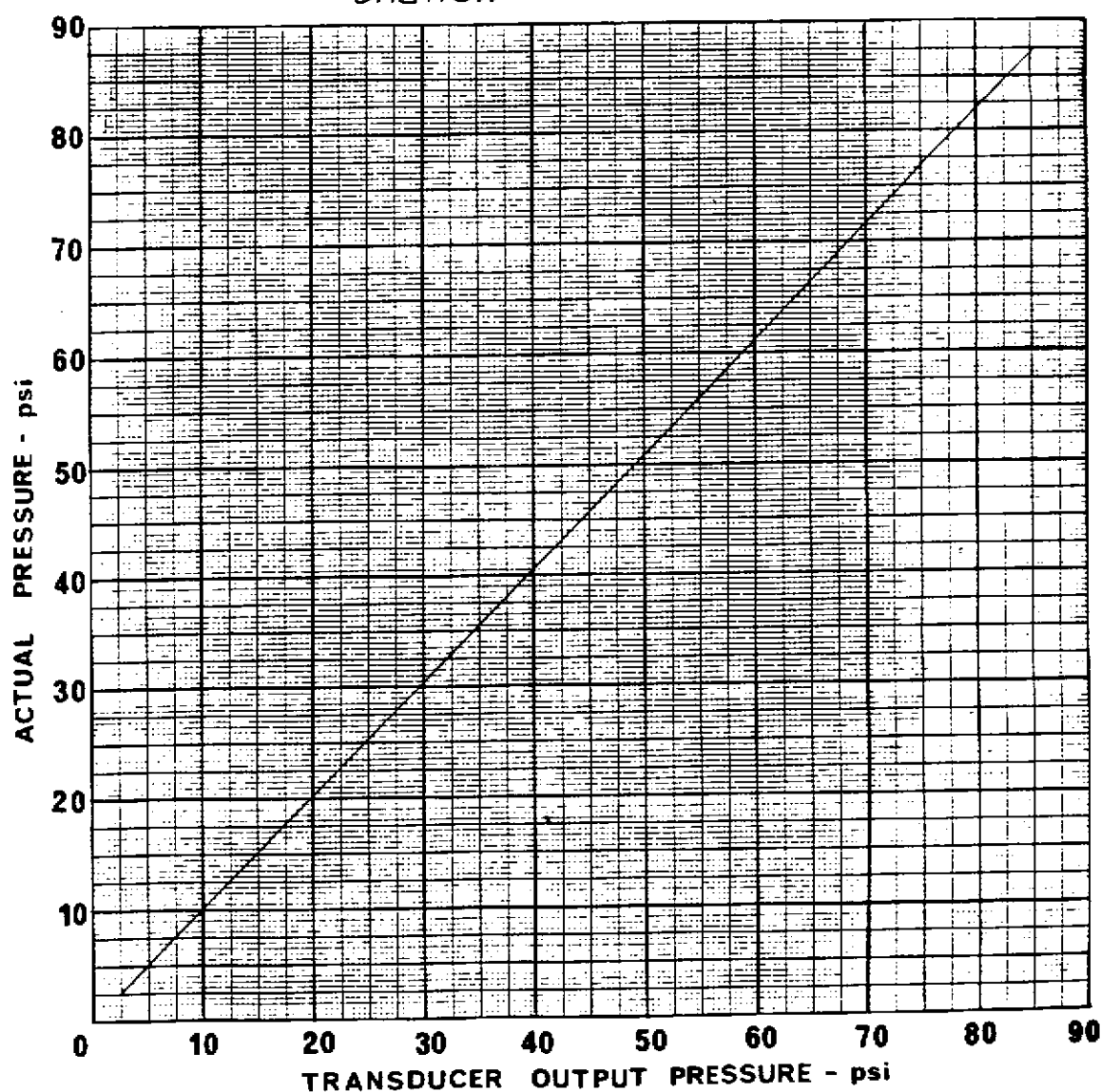
Calibration Charts for Pneumatic Piezometers
Installed in Drill Hole CC22

DETUR PIEZOMETER CALIBRATION CHART

Figure II-1

MODEL D-100 SERIAL No 1272
 CABLE ϕ 3/16" LENGTH 300' DATE Aug. 30, 1978
 ASSEMBLED BY [Signature] CALIBRATED BY [Signature]

Shallow installation D.H. CC22

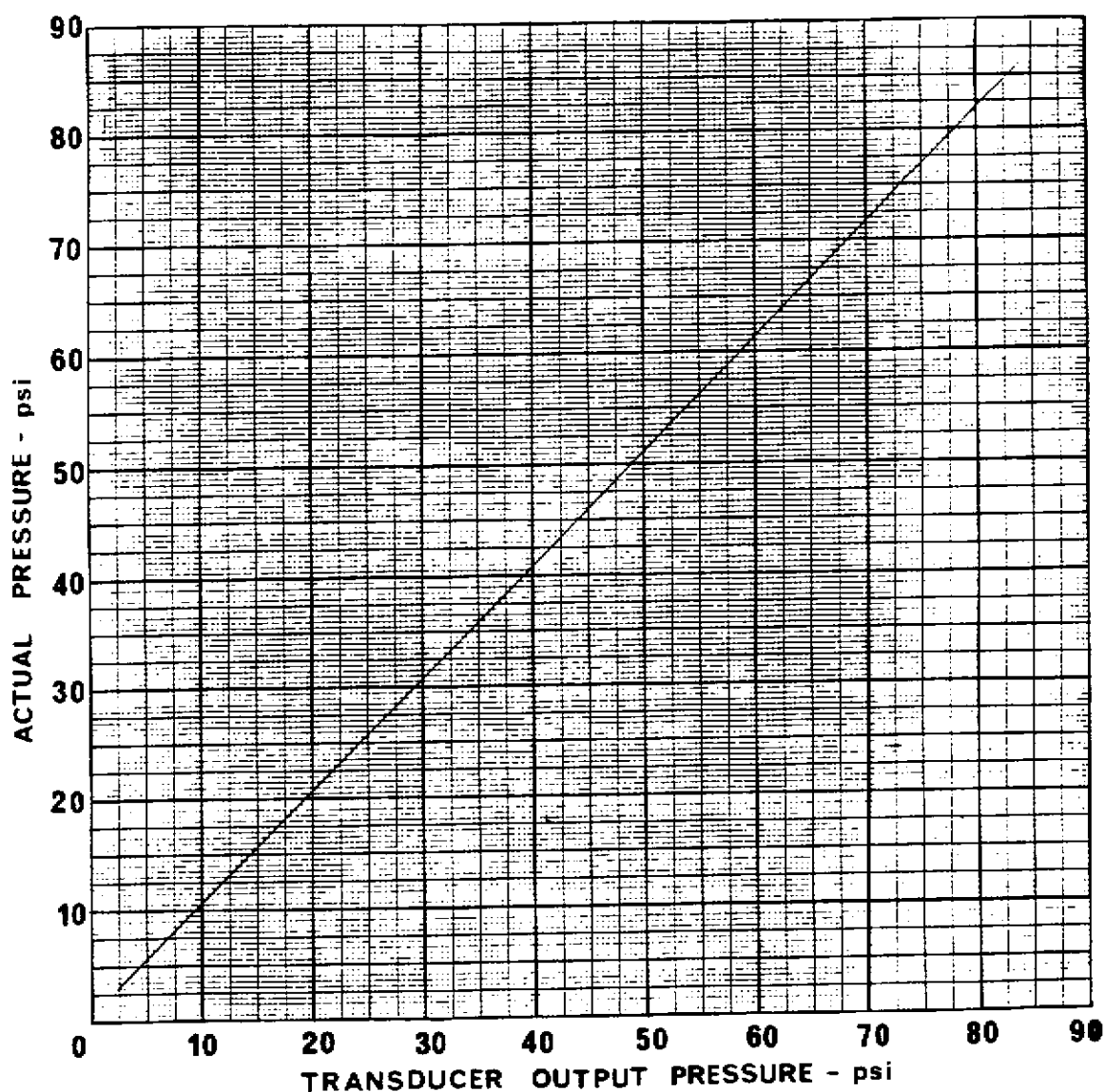


PETUR PIEZOMETER CALIBRATION CHART

Figure II - 2

MODEL P-100 SERIAL No 1271
CABLE ϕ 3/16" LENGTH 500' DATE Aug. 30, 1978
ASSEMBLED BY [Signature] CALIBRATED BY [Signature]

Deep installation DH. CC22



K-SHELL-CORBIN 77(3)B



386

pt. 2 of 6

APPENDIX II
DRILL CORE DATA

DIAMOND DRILL CORE LOG

(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 1

DATE BEGUN: SEPT. 8/78 DEPTH: _____ BEARING: 078° U.T.M. 5483577.8 N; 669400.3 E
 DATE FINISHED: SEPT. 13/78 ELEV. COLLAR: 2043.3 metres TOTAL DEPTH: 191 metres COAL LICENSE: 414, LOT 6995
 LOC: CORBIN, COAL MTN. B.C. HOLE ANGLE: 80° LOGGED BY: HOFFMAN & AIELLO CORE SIZE: HQ

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
							Hole cased to 7.62 metres; no core		See Colder		
							Top of Box 1		log for		
	0.92					55°	SANDSTONE - fine-grained; light grey; iron-stained broken; silty interbeds; heavily iron- stained at base; cross-bedded		geotechnical		
8.84											
	0.78					45°	- as above				
10.06											
	1.09					50°	- as above; highly broken at base				
10.97											
	0.15						- as above; broken				
							Top of Box 2				
	1.30					40°	- as above				
12.50											
	0.91						- as above; broken; mixed with clay				
14.02											
	0.05						SILTSTONE - grey; broken				
	0.02						COAL - dull; pulverized				
	0.19						SILTSTONE - grey; broken; sheared				
	0.20						SANDSTONE - fine-grained; highly broken; iron stained				
	0.33						- as above; mixed with coal and clay				
	0.05						SANDSTONE - fine-grained; light grey; iron-stained; cross-bedded; silty interbeds; broken				
							Top of Box 3				
	0.25					55°	- as above				
15.54											
	0.39					50°	- as above				
16.15											
	0.29					50°	- as above				
16.46											

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 2

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
16.46											
	0.60					50°	SILTSTONE - grey; sandy; broken; iron stained				
	0.12						- as above; highly broken; mixed with coal and clay				
	0.08						- as above; broken with slickensides; no clay or coal				
17.52											
	0.87					50°	- as above; less sandy; broken at top				
18.59											
	0.08						- as above; thin bright coal bands				
	0.05						COAL - dull and bright				
	0.07						SILTSTONE - as siltstone above				
	0.05						COAL - dull; broken				
	0.28					45°	SILTSTONE - as siltstone above; thin coaly bands; broken; slickensides				
							Top of Box 4				
	0.11						- as above				
	0.21						- as above; broken; mixed with broken coal				
20.12											
	0.12						COAL - dull banded; sheared				
	0.40					60°	SILTSTONE - grey; with sandy and coaly stringers; slickensides; broken				
	0.03						- as above; pulverized; mixed with coal				
	0.23						- as above; unbroken; sandy				
21.34											
	0.75					50°	- as above; highly broken				
	0.21						- as above; pulverized; mixed with coal				
22.86											

DIAMOND DRILL CORE LOG

(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 3

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
 DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
 LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
22.86											
	0.13					45°	- as above, unbroken; coaly stringers				
	0.10						- as above; highly broken with slickensides				
	0.13						- as above; unbroken				
	0.01						COAL - dull				
	0.25						SILTSTONE - as siltstone above; broken; thin coaly stringers				
	0.04						COAL - dull banded; sheared				
	0.02						- dull; sheared				
	0.04						- bright banded; sheared				
	0.15						SILTSTONE - as siltstone above				
	0.04						COAL - dull				
	0.26						SILTSTONE - as siltstone above				
							Top of Box 5				
	0.21						- as above; highly broken; slickensides; fragments rounded				
24.38											
	0.13						- as above				
	0.27						- as above; less broken				
	0.01						COAL - dull				
	0.31						SILTSTONE - as siltstone above broken				
25.91											
	0.71					70°	- as above; unbroken; slickensides				
	0.03						COAL - dull	5A-1-1			
	0.04						SILTSTONE - as siltstone above				
	0.03						COAL - bright banded				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURE (OM CORE AXIS)

HOLE No: CORBLN 5A SHEET No: 4

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.02						CLAYSTONE - coaly				
	0.03						COAL - bright				
	0.01						- dull banded				
	0.03						- bright banded				
	0.01						- bright				
	0.05						- bright banded				
	0.06						SILTSTONE - as siltstone above	5A-1-2			
27.43											
	0.36				27.55		- as above; broken				
	0.03						COAL - dull banded				
	0.05						SILTSTONE - as siltstone above; highly broken mixed				
				58.14	28.05		with coal				
28.96							CORE LOSS 1.23 m				
	0.05						COAL - dull; sheared; broken; fragments rounded	5A-2-1			
	0.04						- dull banded; sheared; broken; fragments rounded				
	0.01						- stoney; as above				
	0.05						- dull; as above				
	0.04						- dull and bright; broken				
	0.03						- stoney				
	0.02						- bright banded				
	0.02						- stoney				
	0.03						- bright				
	0.02						- bright banded				
	0.05						CLAYSTONE - coaly				
	0.05						- as above; pulverized; mixed with coal				
	0.04						- as above; unbroken; coaly				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 5

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT. : _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 6

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
32.31											
	0.03				33.12		COAL - dull	5A-2-2			
	0.04						- dull banded				
	0.05						- stoney				
	0.02						- dull				
	0.01						- dull banded				
	0.03						- dull				
	0.14						- dull and bright; unbroken				
	0.07						- dull; unbroken				
	0.02						- dull banded				
	0.03						- dull; unbroken				
	0.03						- stoney; unbroken				
	0.03						- dull and bright; unbroken				
	0.05						- dull				
	0.03						- dull; unbroken				
	0.03						- dull; unbroken				
	0.05						- dull; sheared and broken				
	0.04						- dull and bright; sheared and broken				
	0.11						- dull; sheared and broken				
33.83											
	0.07						- dull banded; sheared and broken				
	0.12						- dull; unbroken				
	0.06						- dull banded				
	0.03						- dull banded; sheared and broken				
	0.04						- dull				
	0.10						- dull; pulverized				
	0.01						CLAYSTONE - broken				
	0.03						COAL - dull and bright				
	0.04						- dull and bright				
	0.04				34.47		- dull				
35.36							CORE LOSS 1.72 m				

DIAMOND DRILL CORE LOG

(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 7

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
 DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
 LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
35.36					36.19						
	0.02						COAL - dull; broken	5A-2-3			
	0.02						- dull banded				
	0.04						- dull				
	0.04						- dull banded				
	0.03						- dull and bright; broken				
	0.05						- dull banded; sheared and broken				
	0.19						- dull; highly sheared and broken				
							Top of Box 7				
	0.04						- dull; sheared and broken				
	0.05						- stoney				
	0.04						- dull banded; sheared and broken				
	0.02						- dull; heavily sheared and broken				
	0.02						CLAYSTONE - sheared; and broken				
	0.17						COAL - dull; sheared; pulverized				
36.88					36.92						
							CORE LOSS 0.32 m				
	0.09				37.24		- dull; heavily sheared and broken				
	0.02						CLAYSTONE - sheared				
	0.13						COAL - dull; highly sheared and broken				
	0.08						- dull; highly sheared and pulverized				
	0.08						- dull; highly sheared and broken				
	0.20						- dull; highly sheared and pulverized				
	0.09						- dull; highly sheared and broken				
	0.19						- dull; sheared and pulverized; mixed with drilling mud				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 8

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
					38.12						
							CORE LOSS 2.05 m				
38.40											
	0.06				40.17		- dull banded; sheared and broken	5A-2-4A			
	0.15						CLAYSTONE - highly sheared and broken				
	0.19						COAL - dull; highly sheared and broken				
	0.41						- dull; highly sheared and pulverized; mixed with drilling mud				
					40.98						
							CORE LOSS 1.78 m				
40.23											
	0.60				42.76		- dull; as above				
							Top of Box 8				
	0.21						- dull; as above				
	0.13						CLAYSTONE - broken; pulverized; mixed with coal				
41.76					43.70		CORE LOSS 0.93				
	0.06				44.63		- as above; broken	5A-2-4B			
	0.17						COAL - dull; sheared and pulverized				
	0.09						- dull; sheared and broken				
	0.04						- stoney; sheared and broken				
43.28											
	0.83						- dull; pulverized; mixed with drilling mud				
44.81											
	0.07				45.82		CLAYSTONE - sheared; broken; fragments rounded; mixed with coal	5A-2-5			
	0.07						COAL - dull; highly sheared				
	0.01						CLAYSTONE - sheared				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 9

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
46.33											
	0.14						COAL - dull and stoney; broken; fragments rounded and mixed				
	0.08						- dull; sheared; broken; pulverized				
	0.08						- dull banded; sheared				
	0.07						- stoney; sheared				
	0.24						- dull; sheared; broken; pulverized				
	0.09						- stoney; sheared; broken; fragments rounded				
	0.06						- dull banded; sheared and pulverized				
	0.10				46.83		- dull; sheared				
47.85							CORE LOSS 0.08 m				
							Top of Box 9				
	0.08				46.91		- dull banded; sheared	5A-2-6			
	0.02						- dull; sheared				
	0.04						- dull banded; sheared				
	0.05						- dull and bright; sheared				
	0.08						- stoney; sheared				
	0.04						- stoney; pulverized				
	0.03						- stoney; sheared				
	0.15						- dull; sheared and pulverized				
	0.04						- dull; sheared				
	0.19						- stoney; sheared				
	0.15						- dull; sheared				
	0.01						CLAYSTONE				
	0.05						COAL - dull				
	0.06				47.90		- stoney				
49.38							CORE LOSS 0.24 m				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 10

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
49.38					48.14						
	0.28						COAL - dull; sheared				
	0.08						- dull; pulverized				
	0.27						- dull; banded				
	0.25				49.02		- dull; sheared; pulverized				
50.90							CORE LOSS 0.06 m				
	0.09				49.08		- stoney; sheared	5A-2-7			
	0.06						- dull; sheared				
	0.28						- stoney; sheared				
	0.17						- dull; sheared; broken				
	0.21						- stoney; sheared				
	0.07						- dull; sheared; broken				
	0.04						- stoney; sheared				
	0.04						- dull; pulverized				
					50.04						
							CORE LOSS 0.17 m				
52.43											
					50.21		Top of Box 10				
	0.04						- dull banded				
	0.05						- stoney				
	0.04						- bright banded; highly sheared				
	0.01						- stoney; sheared				
	0.02						- dull banded; sheared				
	0.02						- bright banded; sheared				
	0.06						- dull; sheared and pulverized				
	0.05						- dull and bright; sheared and pulverized				
	0.03						CLAYSTONE - sheared				
	0.05						COAL - dull and bright; sheared				
	0.02						- bright banded; sheared				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 11

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.03						- dull banded; sheared and pulverized				
	0.03						- stoney; sheared				
	0.05						CLAYSTONE - sheared				
	0.01						COAL - bright				
	0.06				50.76		- dull banded; pulverized				
							CORE LOSS 51 m				
53.95					51.27						
	0.12						- dull; and bright; sheared and pulverized	5A-2-8			
	0.03						CLAYSTONE - sheared and broken				
55.47											
	0.09						- as above				
	0.26						COAL - dull; sheared and broken				
	0.19						- dull; pulverized				
	0.23						- dull; pulverized; mixed with drilling mud and claystone chips				
57.00											
	0.35				52.54		COAL - dull; sheared				
							CORE LOSS 0.11 m				
	0.22				52.65		COAL - stoney	5A-2-9			
					52.87						
							CORE LOSS 0.22				
	0.18				53.08		CLAYSTONE				
	0.02						COAL - bright				
	0.20						CLAYSTONE				
					53.48						
							CORE LOSS 0.64 m				
58.52											

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURE. FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 12

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG

(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 13

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
 DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
 LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.12						- dull; sheared				
	0.19						- dull; pulverized				
					59.52						
							CORE LOSS 1.90 m				
63.09					61.42						
	0.09						CLAYSTONE				
	0.24						COAL - stoney				
	0.09						- dull; sheared and broken				
	0.24						- dull; pulverized				
	0.09				62.08		CLAYSTONE - broken; with calcite	5A-2-13			
64.62											
	0.12						- as above				
							Top of Box 12				
	0.03						COAL - dull and bright; sheared				
	0.06						- dull; sheared				
	0.22						CLAYSTONE - coaly with calcite veinlets				
	0.05						COAL - dull; sheared				
	0.30						CLAYSTONE - coaly with calcite veinlets				
	0.32						COAL - dull; sheared				
	0.16						CLAYSTONE - coaly with calcite veinlets				
					63.34						
							CORE LOSS 2.38 m				
66.14											
	0.05				65.80		- as above	5A-2-14			
	0.69						COAL - dull; sheared				
	0.02						- stoney				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURE FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 14

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.09						- dull banded; sheared				
					66.65						
							CORE LOSS .78 m				
					67.43						
67.67											
	0.09						- dull and bright; sheared				
	0.40						- dull; sheared; broken				
	0.14						- dull banded; sheared and broken				
	0.07						- dull and bright				
	0.03						- dull; sheared and broken				
	0.01						CLAYSTONE - broken				
	0.07						COAL - dull and bright				
	0.03						- dull; pulverized				
	0.04						- dull; unbroken				
	0.01						- bright				
	0.05						- dull				
	0.02						- bright				
	0.06						- dull				
					68.45						
69.19											
	0.07						- dull and bright	5A-2-15			
	0.03						- dull banded				
							Top of Box 13				
	0.03						- dull banded				
	0.24				68.82		- stoney				
							CORE LOSS 1.85 m	5A-2-16			
	0.18				70.67		- dull; sheared and broken				
	0.15						- dull; pulverized				
70.56											

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 15

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
70.56											
	0.12						- dull; sheared and broken				
	0.10						- dull banded; sheared and broken				
	0.25						- dull; sheared and broken				
	0.05						- dull; sheared, broken; and pulverized				
	0.10						- stoney				
	0.09						- dull banded				
	0.08						- dull; pulverized				
	0.13						- stoney				
	0.24						- dull banded				
72.09											
	0.12						- dull bright; sheared				
	0.03			49.9%			- bright banded; broken				
	0.39				72.31		CLAYSTONE - slickensides on bedding				
	0.20						COAL - stoney				
	0.11						- dull; broken and sheared				
	0.07						- stoney				
73.46											
	0.17						CLAYSTONE - slickensides				
							Top of Box 14				
	0.62						CLAYSTONE - with bright coal bands; slickensides on bedding; broken				
	0.12						- as above; heavily sheared				
	0.14						- as above; with calcite veins				
	0.07						- as above; pulverized				
74.83											

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 16

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
74.83											
	0.19						- as above; broken; calcite absent				
	0.26						- as above; less broken				
75.29											
	1.09						- as above				
	0.12						- as above; pulverized				
76.81											
	0.69						- as above; broken				
							Top of Box 15				
	0.28						- as above				
78.33											
	0.04						- as above				
					78.44						
	0.12						COAL - dull; sheared and highly broken	5A-3-1			
	0.04						- stoney; broken				
	0.04						- dull; pulverized				
	0.32				78.96		- dull; broken				
79.86							CORE LOSS .47 m				
	0.05				79.43		- stoney				
	0.25						- dull banded				
	0.12						- dull				
	0.08						- stoney				
	0.09						- dull banded				
	0.06						- dull				
	0.41						- stoney				
	0.03						- dull and bright				
	0.15						- dull				
					80.67						
							CORE LOSS 0.83 m				
81.38					81.50						
	0.19						- dull	5A-3-2			
	0.07						- dull banded; pulverized				

DIAMOND DRILL CORE LOG

(ALL ANGLES MEASURE FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 17

DATE BEGUN: DEPTH: BEARING: U.T.M.

DATE FINISHED: ELEV. COLLAR: TOTAL DEPTH: COAL LICENSE:

LAT.: HOLE ANGLE: LOGGED BY: CORE SIZE:

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.19						- dull; sheared				
	0.14						- stoney; sheared				
	0.19						- dull; pulverized, mixed with claystone chips				
	0.02				82.30		CLAYSTONE				
82.91							CORE LOSS 0.52 m				
					82.82						
	0.18						COAL - dull and bright				
							Top of Box 16				
	0.04						- dull; sheared with calcite veinlets				
	0.15						- dull banded				
	0.27						- stoney				
	0.11						- bright banded				
	0.10						- dull banded; sheared and broken				
	0.05						- dull; sheared and broken				
	0.09						- stoney				
	0.08						- dull banded; pulverized				
					83.89						
84.43							CORE LOSS 0.81				
	0.07				84.70		CLAYSTONE - broken	5A-3-3			
	0.07						COAL - dull and bright				
	0.07						- bright banded				
	0.07						- dull				
	0.02						- bright banded				
	0.10						- stoney				
	0.09						- dull and bright				
	0.18						- dull				
	0.06						- bright banded				
	0.06						- dull				
	0.11						- dull banded				
	0.04				85.64		- dull and bright				
85.95							CORE LOSS 1.56 m				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 18

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
5.95					87.20						
	0.08						- dull banded				
	0.13						- dull				
	0.08						- bright banded				
	0.07						- dull banded				
	0.06						- dull				
87.48											
	0.04						- dull; highly sheared				
	0.76			54.5%	87.66		CLAYSTONE - carbonaceous; slickensides, irregular, sheared at the top				
							Top of Box 17				
	0.29						- as above				
88.70											
	0.81						- as above				
					89.52						
	0.07						COAL - dull; pulverized	5A-4-1			
	0.04						- dull banded; sheared				
	0.05						- stoney				
	0.05						- dull				
90.22											
	0.20						- dull				
	0.06						CLAYSTONE - silty				
	0.03						COAL - dull				
	0.02						- bright banded				
	0.04						- dull banded; pulverized				
	0.10						- dull; sheared				
	0.16						- dull; heavily broken				
	0.02						- bright banded				

HOLE No: CORBIN 5A SHEET No: 19

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.07						- dull				
	0.07						- bright banded; with calcite				
	0.05						- dull and bright				
	0.06						- dull banded				
	0.12						- stoney				
	0.05						- dull banded				
	0.02						- bright banded				
	0.06						- dull				
					90.86						
							CORE LOSS 3.12 m				
92.05					93.98						
	0.03						- dull	5A-4-2			
	0.03						- dull banded				
	0.09						- dull				
	0.03						- bright				
	0.07						- dull and bright				
	0.03						- dull				
	0.02						- stoney				
	0.02						- bright				
	0.08						- dull banded				
	0.06						- dull and bright				
	0.07						- bright banded				
	0.06						- stoney				
	0.02						CLAYSTONE				
	0.08						COAL - dull and bright				
							Top of Box 18				
	0.02						- bright				
	0.02						- dull and bright				
	0.04						- dull				
	0.02						CLAYSTONE - broken				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 20

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.03						COAL - dull and bright				
	0.04						- dull				
	0.02				94.84		- bright				
93.57							CORE LOSS 0.24 m				
	0.04				95.08		- bright banded				
	0.06						- dull banded; highly sheared				
	0.02						- bright banded; highly sheared				
	0.05						- dull banded; sheared				
	0.02						- bright banded; highly sheared				
	0.03						- dull; highly sheared				
	0.03						Clay with sandstone chips, broken; excluded from sample, caved material				
					95.33						
95.10							CORE LOSS 0.99 m				
	0.02				96.32		COAL - dull; highly sheared	5A-4-3			
	0.05						- dull and bright; pulverized				
	0.06						- dull banded; pulverized				
	0.04						- dull banded				
	0.10						- dull; highly sheared; broken				
					96.59						
96.62							CORE LOSS 0.07 m				
	0.06				96.66		CLAYSTONE - pulverized; mixed with drilling mud				
	0.06						COAL - dull				
	0.13						- dull; highly sheared				
	0.03						- stoney				
	0.06						- bright banded; with calcite				
	0.10						- dull and bright				
	0.08						- bright banded				
	0.14						- dull banded; heavily sheared				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 21

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 22

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.14					40°	- as above; unbroken				
104.24											
	0.34						- as above				
							Top of Box 20				
	0.55						- as above				
	0.07						- as above; pulverized				
105.77											
	0.87						- as above; heavily sheared and broken, pulverized at base				
107.29											
	0.97						- as above; unbroken				
	0.12						- as above; sheared and broken				
	0.25					30°	- as above; broken				
108.81											
	0.13						- as above; heavily sheared and broken				
							Top of Box 21				
	1.14					40°	- as above; unbroken				
110.34											
	0.15					55°	- as above				
111.86											
	0.21						SILTSTONE - calcite-filled fractures, dark grey				
	0.03					55°	SILTSTONE - light tan				
	0.08						SILTSTONE - dark grey; with light tan clasts and interbeds at top				
	0.05						CLAYSTONE - dark grey				
	0.01				112.28		CLAYSTONE - light grey	5A-5-1			
							CORE LOSS 0.20 m				
	0.16						COAL - stoney				
	0.09						CLAYSTONE - dark grey				
	0.21						COAL - stoney				
	0.03						- dull; sheared				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 23

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
							Top of Box 22				
	0.07						- dull and bright				
	0.06						CLAYSTONE - coaly				
	0.08						COAL - dull and bright; pulverized				
	0.06						CLAYSTONE - coaly				
	0.07						COAL - dull and bright				
					113.11						
113.39							CORE LOSS 0.49 m				
	0.02				113.60		- dull banded				
	0.03						CLAYSTONE				
	0.06						COAL - dull banded				
	0.07						- bright banded				
	0.04						CLAYSTONE				
	0.05						COAL - bright banded				
	0.06						- stoney				
	0.04						- dull				
	0.02						- bright banded				
	0.04						- dull				
	0.04						- bright banded				
	0.02						CLAYSTONE				
	0.01						COAL - bright				
	0.28			68.0%	114.15		CLAYSTONE - dark grey; slickensides, highly sheared and broken; pulverized at base				
	0.14						- as above, broken				
114.91											

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 24

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
114.91											
	0.88						- as above, unbroken				
	0.63						- as above; highly sheared and broken				
116.43											
	0.31						- as above				
							Top of Box 23				
	0.45						- as above				
	0.44					30°	SILTSTONE - grey; unbroken				
	0.26						- as above; with sandy interbeds				
	0.27						- as above; sand absent				
119.48											
	1.07						- as above				
	0.47					40°	- as above; with thin sandy interbeds				
121.01											
	0.05						COAL - dull and bright				
	0.57					50°	SILTSTONE - as siltstone above				
	0.12						CLAYSTONE - dark grey; heavily sheared and broken				
122.53											
							Top of Box 24				
	0.42						- as above				
124.05											
	0.10						- as above; broken; fragments rounded				
	0.41						COAL - dull; sheared and pulverized, mixed with claystone chips				
	0.08						SILTSTONE - grey				
125.58											
	0.05						COAL - dull; sheared				
	0.04						CLAYSTONE - silty				
	0.04						COAL - dull				
	0.09						CLAYSTONE - silty; heavily sheared				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 24

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 26

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
							Top of Box 26				
	0.42						CLAYSTONE - coaly				
	0.10						- as above; broken with slickensides				
	0.06						- as above; silty				
	0.01						COAL - dull banded				
	0.19						- stoney				
	0.15						- dull				
	0.01						- bright				
	0.11						- dull				
	0.05						- dull banded; pulverized				
	0.03						- dull; pulverized				
	0.08						CLAYSTONE - dark grey; coaly; slickensides on bedding				
	0.05						COAL - dull banded				
	0.06						- dull				
	0.02						- dull bright				
	0.06						CLAYSTONE - silty				
136.25											
	0.07						- as above				
	0.02						COAL - dull				
	0.60						CLAYSTONE - dark grey; highly sheared and broken				
	0.26						- as above; unbroken				
137.77											
	1.24						- as above				
							Top of Box 27				
	0.17						- as above				
139.29											

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORB1N 5A SHEET No: 27

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT. : _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 28

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 29

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 30

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED ON CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 31

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 32

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED ON CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 33

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
174.35											
	0.34				175.00		CLAYSTONE - coaly; sheared and broken				
	0.28						COAL - dull				
	0.03						- dull and bright				
	0.05						- dull				
	0.12						- stoney				
	0.05						- dull banded				
	0.04						- bright				
	0.04						- dull				
	0.01			64.7%			- bright				
	0.26				175.96		CLAYSTONE - dark grey; slickensides on bedding				
175.87											
	0.15						- as above				
	0.05						COAL - dull banded				
	0.04						CLAYSTONE - as claystone above				
	0.07						COAL - dull				
	0.10						CLAYSTONE - as claystone above				
	0.01						COAL - bright				
	0.03						- stoney				
	0.02						- dull and bright				
	0.02						- stoney				
	0.02						- dull and bright				
	0.69					60°	CLAYSTONE - dark grey; slickensides on bedding thin coaly bands				
	0.04						- as above; sheared and broken				
177.39											
	0.14						- as above				
	0.41					60°	- as above; unbroken				
							Top of Box 36				
	0.33						- as above; coaly bands absent				
	0.12						- as above; coaly bands				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED ON CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 34

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 5A SHEET No: 35

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT. : _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DR' CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: C.C.D.H. 6A SHEET No: 1

DATE BEGUN: JULY 4/78 DEPTH: BEARING: N/A U.T.M. 5483485.4N: 669297.2 E

DATE FINISHED: JULY 17/78 ELEV. COLLAR: 2003.2 metres TOTAL DEPTH: 145 metres COAL LICENSE: 414, LOT 6995

LOC: CORBIN, COAL MTN., B.C. HOLE ANGLE: 90^U LOGGED BY: HOFFMAN & WILLIAMS CORE SIZE: HQ

[illegible]

DIAMOND DR' CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: C.C.D.H. 6A SHEET No: 2

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
12.80											
	0.42						SANDSTONE - as above				
	0.75						- as above				
	0.39						- as above				
14.33											
	0.55						- as above, broken, abundant iron oxide staining				
15.24											
	0.21						- as above, unbroken				
15.85											
	0.44						- as above				
							Top of Box 4				
16.76											
	0.28						- as above				
	0.38					60°	SILTSTONE - grey, with sandy interbeds, core broken				
17.68											
	0.19						- as above, broken				
	0.99						- as above, unbroken, sandy towards base				
	0.11						SANDSTONE - medium-grained, light grey, lithic cross-bedded, massive				
18.90											
	0.38						- as above				
	0.35						- as above, broken				
19.51											
	0.27						- broken				
	0.61						- broken				
							Top of Box 5				
	0.20						- unbroken, fine calcite veins present				
	0.30						- core very broken				
21.03											
	0.34						- core broken				

DIAMOND DR' CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: C.C.D.H. 6A SHEET No: 3

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT. : _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

CORE LOG
ROM CORE AXIS)

HOLE No: C.C.D.H. 6A SHEET No: 4

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DR' CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: C.C.D.H. 6A SHEET No: 5

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
40.23	0.50						SILTSTONE - as above				
	0.19						SANDSTONE - medium-grained, light grey, lithic, abundant irregular coaly inclusions, core broken				
							Top of Box 10				
	0.32						- as above				
41.15	0.82						SILTSTONE - grey, core somewhat broken				
41.76	0.94						- as above				
42.98	0.45						- as above				
43.28	0.20						- as above				
	0.93					40°	- as above, unbroken, thin sandy interbeds more common towards base				
	0.17						- as above, unbroken, sandy beds absent.				
							Top of Box 11				
	0.45						- as above, somewhat broken				
44.81	0.48						- as above				
	0.45						- as above, with thin sandy interbeds, thin zone of slickensided clacite at base				
	0.41					40°	MUDSTONE - dark grey, with coaly layers and inclusions, plant fragments, core broken with minor iron staining				
46.33	0.78						- as above				
47.24	0.76						- as above				

<u>DIAMOND DR'</u>	<u>CORE LOG</u>
(ALL ANGLES MEASURED FROM CORE AXIS)	(FROM CORE AXIS)

WOLE No: C.C.D.H. 6A SHEET No: 6

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

<u>DIAMOND DR'</u>	<u>CORE LOG</u>
(ALL ANGLES MEASURED FROM CORE AXIS)	

HOLE No: C.C.D.H. 6A SHEET No: 7

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DR' CORE LOG
(ALL ANGLES MEASUR. FROM CORE AXIS)

HOLE No: C.C.D.H.6A SHEET No: 8

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.25						COAL - bright banded, broken				
62.06											
	0.10						- pulverized, sheared, dull				
62.18											
	0.16						- as above				
	0.61						- stoney, unbroken, slickensides on joints, minor calcite veinlets				
63.09											
	0.81						CLAYSTONE - highly carbonaceous, calcite veinlets slickensides, unbroken				
	0.18						COAL - bright banded				
	0.17				61.30		- sheared & pulverized, dull				
							CORE LOSS 3.30 m				
64.31											
	0.69				64.60		COAL - as above, with calcite veinlets	5A-1-3			
							Top of Box 16				
65.23											
	0.29						- as above				
65.53											
	1.08						- as above				
67.08					66.66		- as above				

DIAMOND DR' CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: C.C.D.H. 6A SHEET No: 9

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
67.08					66.66						
	0.05						CLAYSTONE - very carbonaceous, broken	6A-1-4			
	0.92						COAL - pulverized, dull				
67.97											
	0.55						- pulverized, dull				
68.78											
	0.29						- pulverized, dull				
	0.23						CLAYSTONE & SANDSTONE - broken rounded fragments, mixed				
							Top of Box 17				
	0.39						COAL - bright banded, broken				
	0.26						- pulverized, dull				
70.10											
	0.29						- pulverized, dull				
	0.29						CLAYSTONE - very carbonaceous, very broken				
	0.25						COAL & CLAYSTONE - pulverized, mixed				
					70.18						
71.63											
	0.24						- as above	6A-1-5			

DIAMOND DR' CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: C.C.D.H. 6A SHEET No: 10

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT. : _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DR CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: C.C.D.H. 6A SHEET No: 11

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT. : _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.14						COAL - dull, calcite veinlets, sheared and broken				
	0.12						- pulverized, dull				
	0.35						- bright, broken				
78.94											
	0.06						CLAYSTONE - highly carbonaceous, calcite veinlets				
	0.34						COAL - dull, broken and pulverized Top of Box 19				
	0.16						- as above				
					80.38						
80.16							CORE LOSS 0.72 m				
					81.10						
	0.49						COAL - pulverized, dull	6A-1-8			
81.38											
	0.35						- dull, calcite veinlets, broken				
82.30											
	0.34						- pulverized, dull				
	0.11						CLAYSTONE - carbonaceous, broken				
					82.39						
83.21											
	0.57						COAL - pulverized, dull	6A-1-9			
	0.11						CLAYSTONE - carbonaceous, calcite veinlets, highly broken				

1

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT. : _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: C.C.D.H. 6A SHEET No: 13

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG

HOLE No: C.C.D.H. 6A SHEET No: 14

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED:_____ **ELEV. COLLAR:**_____ **TOTAL DEPTH:**_____ **COAL LICENSE:**_____

LAT. : _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DR' CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: C.C.D.H. 6A SHEET No: 15

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.32						CLAYSTONE - highly carbonaceous, slickensides, calcite veinlets, broken, fragments rounded				
	0.26						- unbroken				
	0.05						COAL - bright, broken				
				65.1%	99.00						
	0.28						CLAYSTONE - carbonaceous, slickensides, calcite veinlets, highly broken				
99.67											
	0.46						- as above				
99.97											
	0.07						- as above				
	0.19						- as above, pulverized, very coaly				
	0.29						- as above, not coaly				
101.01											
	0.10						- as above				
							Top of Box 24				
	1.37						- as above, somewhat broken				
102.61											
	1.29						- as above				
103.94											
	0.14						- as above				

<u>DIAMOND DR'</u>	<u>CORE LOG</u>
(ALL ANGLES MEASURED FROM CORE AXIS)	

HOLE No: C.C.D.H. 6A SHEET No: 16

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DR CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: C.C.D.H. 6A SHEET No: 17

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG

HOLE No: C.C.D.H. 6A SHEET No: 18

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
118.87											
	0.23				119.00		CLAYSTONE - coaly, slickensides CORE LOSS 0.40 m				
	0.15				119.40		COAL - dull, broken	6A-3-1			
	0.12						- pulverized, dull				
	0.05						CLAYSTONE - highly carbonaceous				
	0.60						COAL - dull banded, unbroken				
120.40											
	0.44						- as above, broken				
	0.32						- as above, unbroken				
	0.10						- pulverized, dull				
	0.32						- broken				
				84.0%	121.50						
	0.28						CLAYSTONE - grey, unbroken				
121.92											
	0.19						- as above Top of Box 29				
	0.81						- as above				
	0.09						- as above, pulverized				
123.44											
	0.13						- as above, broken, fragments rounded				
	0.31						- as above, carbonaceous, with thin bright coal bands				

DIAMOND DR' CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: C.C.D.H. 6A SHEET No: 19

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
					124.70						
	0.16						COAL - dull, broken	6A-4-1			
	0.20						CLAYSTONE - carbonaceous, thin bright coal bands				
124.97											
	0.89						COAL - stoney, with bright bands				
	0.40						- dull				
126.49											
	0.67				127.02		CLAYSTONE - highly carbonaceous, thin bright coal bands				
							CORE LOSS 0.48 m Top of Box 30				
	0.19				127.50		COAL - dull banded				
127.71											
	0.95						CLAYSTONE - highly carbonaceous, thin bright coal bands				
128.63											
	0.51						- carbonaceous, bright bands absent				
	0.31						- as above, thin bright coal bands present				
	0.21						- as above, silty				
	0.30						COAL - dull				
					129.97						
130.15							CORE LOSS 0.13 m				
					130.10						
	0.45						CLAYSTONE - carbonaceous, thin coal bands	6A-4-2			

DIAMOND DR' CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: C.C.D.H. 6A SHEET No: 20

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ **ELEV. COLLAR:** _____ **TOTAL DEPTH:** _____ **COAL LICENSE:** _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.10						COAL - dull, broken				
130.5											
	0.77						CLAYSTONE - carbonaceous, thin coal bands				
							Top of Box 31				
131.67											
	1.03						COAL - stoney, with thin bright bands				
132.89											
	0.15						MUDSTONE - grey, silty				
	0.89						COAL - dull banded				
					133.49						
134.29							CORE LOSS 0.51 m				
					134.00						
	0.23						CLAYSTONE - sheared and pulverized				
	0.20						COAL - dull, broken				
	0.41						CLAYSTONE - highly carbonaceous, some coaly bands				
	0.41						COAL - dull banded				
135.33											
	0.75						- as above				
					136.00						
				96.9%			CORE LOSS 0.15 m				

(ALL ANGLES MEASURE

HOLE No: C.C.D.H. 6A SHEET No: 21

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DR CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: C.C.D.H. 6A SHEET No: 22

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: C.C.D.H. 19 SHEET No: 1

DATE BEGUN: AUGUST 16/78 DEPTH: BEARING: N/A U.T.M. 5483807.3N; 669255.4E

DATE FINISHED: AUGUST 22/78 ELEV. COLLAR: 2001.0 metres TOTAL DEPTH: 147 metres COAL LICENSE: 414, LOT 6995

LOC : CORBIN, COAL MTN., B.C. HOLE ANGLE: 90° LOGGED BY: HOFFMAN & AIELLO CORE SIZE: HQ

[illegible]

DIAMOND DRILL CORE LOG

(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CC - 19 SHEET No: 2

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG

(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CC - 19 SHEET No: 3

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
31.09											
	0.24						As above				
							Top of Box 6				
	0.27					55°	As above				
	0.20						As above; highly broken; iron stained; mixed with clay				
32.61											
	0.79						As above; highly iron stained; jointed				
	0.29						Sandstone; fine-grained; dark grey; micaceous				
	0.35						Sandstone; medium-grained; medium grey; massive				
34.14						65°					
	1.15						As above				
	0.05						Clay; mixed with sandstone and siltstone chips				
	0.13						Sandstone; medium-grained; light grey; massive				
35.66											
	0.45					75°	As above; with one thin siltstone interbed at center				
							Top of Box 7				
	0.99						As above				
37.19											
	0.99					70°	As above				
	0.16						As above; fractures filled with iron oxides				
	0.22						Sandstone; with irregular siltstone interbeds				
38.71											
	0.78					75°	Sandstone; grey; medium-grained; massive				
	0.18						As above; highly iron stained; micaceous				
	0.02						Clay; with sandstone chips and mica				
	0.09						Sandstone; medium-grained; medium grey; massive				
40.23											
	0.25						As above				
							Top of Box 8				

DIAMOND DRILL CORE LOG

(ALL ANGLES MEASURE FROM CORE AXIS)

HOLE No: CC - 19 SHEET No: 4

DATE BEGUN: DEPTH: BEARING: U.T.M.

DATE FINISHED: ELEV. COLLAR: TOTAL DEPTH: COAL LICENSE:

LAT.: HOLE ANGLE: LOGGED BY: CORE SIZE:

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
							Top of Box 8				
	0.21					70°	As above				
1.76						70°					
	1.16						As above				
	0.32						As above; with silty interbeds; broken; iron stained mixed with clay; quartz-filled fractures				
3.28						65°					
	0.81						Sandstone; medium-grained; medium grey; massive				
	0.38						As above; highly broken; iron stained; mixed with clay; major fault zone				
							Top of Box 9				
	0.03						As above				
4.81					43.92		CORE LOSS 0.16 m				
	0.09				44.08		Coal; highly sheared; iron stained; dull banded	19-1-1			
	0.16						pulverized; mixed with clay				
	0.06						Claystone; coaly; with thin bright coal bands				
46.33											
	0.02						As above; with pyrite				
	0.05						Coal; dull and bright; pulverized				
	0.04						dull pulverized				
	0.07						dull and bright; pulverized				
	0.05						dull; pulverized				
	0.03						dull and bright; pulverized; sheared				
	0.04						dull banded; pulverized				
	0.02						dull; sheared; pyrite				
	0.03						Stoney; sheared; pyrite				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CC - 19 SHEET No: 5

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS,BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.03						Coal; dull; sheared; pyrite				
	0.05						dull; pulverized				
	0.03						dull banded; pulverized				
	0.03						dull pulverized				
	0.02						dull banded; pulverized				
	0.02						dull; pulverized				
	0.04						dull; pyrite; sheared				
	0.01						dull and bright; sheared; pyrite				
					44.97						
							CORE LOSS 1.38 m				
47.85					46.35						
	0.05						dull and bright; pulverized	19-1-2			
					46.40						
							CORE LOSS 0.30 m				
49.07											
	0.03				46.70		dull and bright; sheared				
	0.10						Claystone; pulverized; mixed with coal				
	0.08						Coal; dull and bright; sheared; pulverized				
	0.06						Claystone; pulverized				
	0.06						Coal; dull; pulverized; mixed with claystone chips				
					47.03						
							CORE LOSS 5.69 m				
50.60											
	0.06				52.72		Coal; as above	19-1-3			
	0.06						bright banded; sheared; pulverized				
	0.09						dull and bright; sheared; pulverized				
	0.02						dull; pulverized				
	0.11						Claystone; sheared; pulverized				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURE OM CORE AXIS)

HOLE No: CC - 19 SHEET No: 6

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.09						Coal; sheared and pulverized; mixed with claystone				
51.82											
	0.28						as above	↓			
					53.43						
							CORE LOSS 1.53 m				
53.34											
	0.03				54.96		dull and bright; sheared; pulverized	19-1-4			
	0.07						dull; sheared; pulverized				
54.25											
	0.04						dull banded; pulverized				
	0.09						Claystone; coaly; with thin bright coal bands; calcite veinlets;				
	0.04						Coal; stoney; with calcite veinlets				
55.17											
	0.14						as above; sheared				
	0.06						Claystone; pulverized				
							Top of Box 10				
	0.14						Claystone; pulverized; carbonaceous	↓			
					55.57						
56.69							CORE LOSS 2.31 m				
	0.06				57.88		As above; unbroken	19-1-5			
	0.04						Coal; stoney				
	0.03						dull; pulverized				
	0.01						dull banded; pulverized				
	0.03						dull; pulverized				
	0.05						stoney; sheared	↓			

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CC - 19 SHEET No: 7

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
					58.10						
							CORE LOSS 0.82 m				
58.22											
	0.06				58.92		Coal; dull and bright; sheared; pulverized				
	0.05						dull banded; sheared; pulverized				
	0.06						dull; sheared; pulverized				
	0.02						dull; sheared				
	0.52						Claystone; carbonaceous; with well-developed bright coal bands; calcite filled fractures; pyrite				
					59.63						
59.74							CORE LOSS 1.41				
	0.14				61.04		As above	19-1-6			
	0.14						Coal; dull; sheared				
60.66											
	0.24						dull; sheared; pyrite				
	0.03						dull banded; broken				
					61.59						
							CORE LOSS 3.24 m				
63.09					64.83						
64.62											
	0.05						dull and bright; sheared	19-1-7			
	0.12						dull; sheared				
					65.00						
							CORE LOSS 0.50 m				
66.75					65.50						
	0.08						bright banded; highly sheared; pyrite				
	0.22						dull and bright; highly sheared				
67.36											

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CC - 19 SHEET No: 8

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURE FROM CORE AXIS)

HOLE No: CC - 19 SHEET No: 9

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
							Top of Box 13				
	0.06						As above; coarse-grained; massive				
76.50											
	0.28					75°	As above; coarse-grained				
	0.03						Coal; sheared and pulverized; mixed with clay;				
							probable small fault				
	1.16						Sandstone; as above				
78.03											
	1.54					75°	Sandstone; medium-grained; light grey; lithic;				
							massive				
79.55						80°					
	0.95					90°	As above				
							Top of Box 14				
	0.59					75°	As above				
81.08											
	1.02					70°	As above; iron staining along fractures at base				
82.30											
	1.55					90°	As above; some iron staining				
83.82											
	0.94					80°	As above; slickensides on joint; some iron staining				
							Top of Box 15				
	0.58						As above; some iron staining				
85.34						90°					
	1.58						As above; iron staining along bedding				
86.87											
	1.37						As above; iron staining				
	0.19						As above; broken				
88.70											
	0.42					90°	As above; unbroken; calcite-filled fractures				
							Top of Box 16				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CC - 19 SHEET No: 10

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
							Top of Box 16				
	0.89						As above; iron staining; calcite-filled fractures				
90.22											
	1.50					70°	As above; iron staining; slickensides on joints; calcite				
91.74											
	0.68						As above; iron staining; calcite				
	0.43						As above; broken; no slickensides				
93.27											
	0.46					85°	As above; unbroken				
							Top of Box 17				
	0.84					75°	As above; massive; no calcite				
94.79											
	1.52					65°	As above; minor calcite-filled fractures				
96.32											
	0.20						As above; broken				
	1.16						As above; small fractures filled with carbonaceous material				
	0.07						As above; broken				
97.89											
	0.14					85°	As above; unbroken				
							Top of Box 18				
	0.74						As above				
98.76											
	1.25					65°	As above				
100.28											
	1.10					85°	As above; minor calcite-filled fractures; massive				
101.19											
	0.77						As above; no calcite; slickensides on bedding and joints				
							Top of Box 19				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CC - 19 SHEET No: 11

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS,BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
							Top of Box 19				
	0.71					70°	As above; no slickensides				
102.72											
	0.25						As above				
	0.02						Siltstone; grey; with pyrite; abrupt contacts with sandstone				
	0.35						Sandstone; light grey; medium-grained; iron staining and carbonaceous material along fractures				
	0.07						Silty sandstone; broken; carbonaceous along fractures; iron stained; abundant slickensides				
	0.01						Sandstone; broken; mixed with clay				
	0.01						Siltstone; dark grey; iron oxide along fractures; calcite fillings; slickensides				
	0.05						Silty sandstone; dark grey; carbonaceous; pyrite crystals along bedding; slickensides				
	0.10						As above; broken; grading into sandstone				
	0.55					75°	Sandstone; medium-grained; medium grey; calcite-filled fractures; iron staining along fractures				
104.24											
	1.54						As above : lighter grey				
105.76											
	0.43						As above				
							Top of Box 20				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CC - 19 SHEET No: 12

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
							Top of Box 20				
	1.03					80°	As above; carbonaceous material along fractures				
107.29											
	0.32						As above				
	0.95					80°	As above; darker grey; slickensides along joints				
108.51											
	0.69						As above; cross-bedded				
	0.08					70°	Sandstone; fine-grained; light grey; broken; iron staining				
	0.79						Sandstone; fine- to medium-grained; iron staining; calcite filled fractures; some carbonaceous material along fractures; massive				
110.03											
	0.26						As above; medium-grained				
							Top of Box 21				
	0.26					75°	As above				
	0.90						As above; abundant calcite-filled fractures				
111.56											
	0.94					90°	As above; calcite-filled fractures less common				
112.47											
	0.77					75°	As above; abundant calcite-filled fractures; cross-bedded; with siltstone interbeds at centre				
113.38											
	1.02						As above; calcite; siltstone absent				
	0.11						As above; interbedded with siltstone				
114.60							Top of Box 22				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CC - 19 SHEET No: 13

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
114.60											
	1.27						As above; siltstone absent; calcite-filled fractures; massive				
	0.11						As above; interbedded with siltstone; cross-bedded; slickensides; iron stained				
	0.22					75°	As above; siltstone absent				
116.13											
	0.30						As above; broken				
	0.56						As above; massive				
	0.18						As above; interbedded with dark grey siltstone; iron stained; highly broken				
	0.15						As above; siltstone absent; slickensides on joints				
117.35											
	0.45					65°	As above; calcite-filled fractures				
	0.13						As above; interbedded with siltstone				
	0.56						As above; thin silty interbeds at top				
	0.27					75°	As above; interbedded with siltstone; slickensides; pyrite; cross-bedding				
							Top of Box 23				
	0.11						As above; with thin silty interbeds; slickensides				
118.87											
	0.91						As above; calcite-filled fractures				
	0.65						As above; silty beds absent				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CC - 19 SHEET No: 14

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURE FROM CORE AXIS)

HOLE No: CC - 19 SHEET No: 15

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
							Top of Box 26				
131.06											
	0.84					75°	As above				
	0.47						As above; silty beds absent; small siltstone clasts becoming common near base; carbonaceous material along fractures				
132.59						70°					
	0.37						As above				
	0.65						As above; with frequent silty interbeds and bioturbation; cross-bedding				
	0.23						As above; highly broken; slickensides; pyrite on fractures				
	0.12						As above; less broken; less silty				
134.11						85°					
	0.21						As above; slickensides on bedding planes				
	0.08						Siltstone; highly broken; mixed with clay				
	0.32						Sandstone; medium-grained; light grey; broken; calcite filled fractures; slickensides along bedding planes				
134.72											
	0.16						As above				
							Top of Box 27				
	0.72					75°	As above				
135.94											
	0.31						As above				
136.55											
	0.26						As above; less broken				
	0.47						Siltstone; highly broken; mixed with sandstone chips and clay; slickensides				
	0.23						Sandstone; grey; broken; slickensides				
137.46											

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CC - 19 SHEET No: 16

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.15						Siltstone and sandstone; broken; mixed with clay; slickensides				
	0.75					60°	Sandstone; grey; few thin silty interbeds; slickensides on bedding and joints				
138.68											
	0.41						As above; highly broken; calcite fillings				
139.29											
							Top of Box 28				
	0.60						Clay; with sandstone and siltstone chips				
	0.05						Sandstone; grey; highly broken; slickensides; mixed with clay				
139.90											
	0.12						As above				
	0.74					45°-0°	Sandstone; medium-grained; with thin silty interbeds; drastic changes in bedding angles; fault zone indicated by change in bedding				
	0.71						Siltstone; with thin sandy interbeds; unbroken; abundant bioturbation				
142.95						40°					
	0.14						As above				
							Top of Box 29				
	0.87					20°	As above				
144.17											
	1.22					20°	Sandstone; with frequent silty interbeds and abundant bioturbation				
	0.10						As above; highly broken; slickensides				
145.69											
	0.23					35°	As above; less broken				
146.9											
							THE END OF				
							C.C.D.H. 19				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 20 SHEET No: 1

DATE BEGUN: AUGUST 3/78 DEPTH: _____ BEARING: N/A U.T.M. UNSURVEYED

DATE FINISHED: AUGUST 11/78 ELEV. COLLAR: 1999 metres TOTAL DEPTH: 44 metres COAL LICENSE: 414, LOT 6995

: CORBIN, COAL MTN., B.C. HOLE ANGLE: 90° LOGGED BY: G. HOFFMAN CORE SIZE: HQ

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 20 SHEET No: 2

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURE. FROM CORE AXIS)

HOLE No: CORBIN 20 SHEET No: 3

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG

(ALL ANGLES MEASURE FROM CORE AXIS)

HOLE No: CORBIN 20 SHEET No: 4

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
 DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
 LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.04						Claystone; as above				
	0.13						Coal; dull and bright; sheared				
	0.02						- dull				
	0.02						Claystone; carbonaceous				
	0.06						Coal and claystone; pulverized; mixed				
	0.33						Claystone; pulverized				
	0.26						- sheared and broken				
97' / 29.57											
	0.37						- as above				
	0.11						- as above; pulverized				
100' / 30.48											
	0.20						- as above; pulverized	20-1-4			
					27.92						
102' / 31.09							CORE LOSS 2.83 m				
					30.75						
	0.02						Coal; dull; pulverized				
	0.04						- bright banded; pulverized				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 20 SHEET No: 5

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 20 SHEET No: 6

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.67				33.20		Sandstone; light grey; medium to coarse-grained; lithic; massive; joints stained with iron oxides; cross-bedded; Moose Mountain Sand- stone				
111'	33.83										
	1.16						- as above				
115'	35.05					40°					
	0.48						- as above				
117'	35.66					60°					
	1.00						- as above				
120'	36.58					60°					
	0.66					50°	Top of Box 4 - as above				
122'	37.18										
	0.85						- as above				
125'	38.10										
	0.66						- as above				
127'	38.71					40°					

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED ON CORE AXIS)

HOLE No: CORBIN 20 SHEET No: 7

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED ON CORE AXIS)

HOLE No: CORBIN 20A SHEET No: 1

DATE BEGUN: AUGUST 11/78 DEPTH: _____ BEARING: N/A U.T.M. 548394.5N; 669282.2E

DATE FINISHED: AUGUST 15/78 ELEV. COLLAR: 1999.3 metres TOTAL DEPTH: 103 metres COAL LICENSE: 414, LOT 6995

LOC: CORBIN, COAL MTN., B.C. HOLE ANGLE: 90° LOGGED BY: G. HOFFMAN CORE SIZE: HQ

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
							Note: Drill hole 20A represents a continuation of Hole 20. Triconed to about 40 meters; no core.		See Golder		
							Top of Box 1		log for		
	1.27					50°	Sandstone; medium to coarse-grained; light grey; cross-bedded; massive; iron oxide stain on joints and fractures; lithic; Moose Mountain Sandstone		geotechnical data		
41.30	1.17						as above				
41.85	1.03						as above				
	0.08						as above; core broken				
	0.11						as above; massive				
43.28	0.22						as above				
							Top of Box 2				
	1.13						as above				
44.81	1.23					55°	as above				
46.33	1.42						as above				
							Top of Box 3				
	0.54						as above				
48.46	0.90						as above				
49.38	0.70						as above				
50.29	0.73						as above				
51.21	0.44					60°	as above				
							Top of Box 4				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 20A SHEET No: 2

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

DATE: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 20A SHEET No: 3

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
61.26											
	0.45					60°	as above; massive				
	0.05						as above; broken				
	0.83						as above; massive				
	0.10						as above; somewhat brecciated; slickensides;				
							core broken				
62.79											
	0.30						as above; brecciated				
	0.55					45°	as above; massive				
	0.24						as above; core broken				
							Top of Box 7				
64.01						55°					
	1.51						as above; massive				
65.53											
	1.43						as above				
67.06											
	1.15						as above				
							Top of Box 8				
	0.11						as above				
68.58						45°					
	1.45						as above				
70.10						50°					
	0.73						as above				
70.71						60°					
	1.03						as above				
71.93											
	0.57						as above				
							Top of Box 9				
	0.34						as above; core broken				
	0.39					60°	as above; unbroken				
73.15											

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 20A SHEET No: 4

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG

(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 20A SHEET No: 5

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
 DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
 LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
31.08											
	1.02					45°	Sandstone; light grey; medium to fine-grained				
32.30											
	0.44						as above; core broken; probable faulting				
32.91											
	0.49						as above				
34.12											
	0.05				84.04		as above				
							CORE LOSS 0.38 m	20A-1-1			
	0.08				84.42		Coal; stoney; sheared; with pyrite				
	0.09				84.60		Claystone; coaly; sheared; pyrite				
36.26							CORE LOSS 0.26 m				
					84.86		Coal:				
	0.03						bright banded; pyrite				
	0.07						dull; sheared; pyrite				
	0.06						dull banded; sheared; pyrite				
	0.12						dull and bright; sheared; pyrite				
	0.03						bright banded; sheared; highly broken; pyrite				
36.87											
	0.10						dull and bright; sheared; pyrite; highly broken;				
							contains some calcite veinlets				
37.78											
	0.02						bright; pyrite				
	0.01						dull; pyrite; sheared				
	0.20						dull banded; pyrite; sheared				
	0.22						bright banded; highly sheared; pyrite				
	0.05						dull and bright; sheared; pyrite				
	0.02						bright banded; sheared; pyrite				
	0.15				85.93		dull and bright; sheared; pyrite				
							CORE LOSS 0.26 m				
	0.03				86.19		Claystone; coaly; pyrite				
							Top of Box 12	↓			

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 20A SHEET No: 6

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 20A SHEET No: 7

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT. : _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED ON CORE AXIS)

HOLE No: CORBIN 20A SHEET No: 8

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
96.01											
	0.13				96.04		Claystone; coaly; pyrite				
							Coal				
	0.02						dull; pulverized; sheared; pyrite				
96.32											
	0.15						Claystone; coaly; broken; pyrite; sheared				
97.54											
	0.05				96.39		Coal; bright; highly sheared; pyrite				
				30.6%			CORE LOSS 2.37 m				
					98.76		Mudstone; broken; sheared; pyrite; redrilled				
97.84											
	0.24						Mudstone; thin bright coal bands; pyrite; unbroken				
98.45											
	0.05						Sandstone; medium to coarse-grained with coaly and				
							and silty inclusions; unbroken				
	0.14					60°	as above; with abundant silty matrix				
	0.22						as above; no silty matrix				
	1.02						as above; no coaly wisps; massive and				
							cross-bedded; light grey; lithic; Moose				
							Mountain Sandstone				
99.97											
	1.0					60°	as above				
101.19											
	0.34						as above; iron staining along joints				
							Top of Box 14				
	0.67					60°	as above				
							END OF HOLE				
							C.C.D.H. 20A				
							CORBIN - COAL MTN.				

DIAMOND DR' CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: C.C.D.H. 21 SHEET No: 1

DATE BEGUN: AUGUST 23, 1978 DEPTH: _____ BEARING: N/A U.T.M. 5483037.9N; 669347.3 E

DATE FINISHED: SEPT. 5, 1978 ELEV. COLLAR: 2040.2 metres TOTAL DEPTH: 159 metres COAL LICENSE: 414, LOT 6995

: CORBIN, COAL MTN., B.C. HOLE ANGLE: 90° LOGGED BY: HOFFMAN & AIELLO CORE SIZE: HQ & NQ

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
							Top of Box 1		See Golder		
	1.08						SILTSTONE - dark grey, iron staining, coaly stringer near base, highly broken		log for geotechnical data		
	0.15						- unbroken				
7.92											
	0.09						- as above, unbroken, abundant iron staining				
	0.25						- highly broken, slightly carbonaceous				
	0.94						- unbroken, less staining				
9.45											
	0.72						- not carbonaceous				
	0.61						SANDSTONE - fine-grained, cross-bedded, dark grey, calcite-filled fractures				
	0.18						- as above				
11.28							Top of Box 2				
	1.22						- as above, with plant fragments				
12.80											
	0.80						SANDSTONE - medium-grained, cross-bedded, iron stained, calcite-filled fractures, light grey, with occasional silty lenses and bioturbation, broken				
14.32											
	0.57						- as above				
	0.22						- unbroken, with frequent silty beds, no calcite-filled fractures				
							Top of Box 3				
	0.30						- as above, bioturbation at base, calcite- filled fractures				

DIAMOND DR' CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: C.C.D.H. 21 SHEET No: 2

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
15.85											
	0.22						SANDSTONE - medium grey, iron stained, silty lenses, broken, medium-grained				
17.07											
	0.10						- highly broken				
	0.09						- unbroken				
	0.46						SANDSTONE - fine-grained, medium to dark grey, some silty lenses, bioturbation at base, iron staining throughout				
18.29											
	0.79						- siltstone lenses less frequent				
18.90											
	0.53						- siltstone absent, bioturbation present				
	0.40						- slightly carbonaceous, broken				
20.42											
	0.20						- as above, broken				
							Top of Box 4				
	0.52						SANDSTONE - light to medium grey with thin silty beds, calcite-filled fractures, iron staining				
21.64											
	0.23					35°	- as above				
	0.24						- broken				
	0.36						SANDSTONE - very fine-grained and silty, dark grey iron staining throughout, calcite-filled fractures, with thin sand beds toward base				
	0.14					40°	SANDSTONE - light grey, medium-grained, siltstone clasts at base, highly broken, abundant iron staining, thin silty interbeds				
23.16											
	0.15						- as above, with siltstone clasts				

DIAMOND DR' CORE LOG
(ALL ANGLES MEASUR. FROM CORE AXIS)

HOLE No: C.C.D.H. 21 SHEET No: 3

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.32					20°	- as above, clasts absent				
24.69											
	0.74					30°	- as above				
	0.02						- broken				
							Top of Box 5				
	0.18						- as above, broken				
	0.34					30°	- no silty beds, clasts present at top, unbroken				
26.21											
	0.32						- as above, with clasts, very silty, badly broken, slickensides at base				
	1.10						- as above, clasts at top, massive				
27.74											
	1.46					20°	- as above, clasts absent, massive				
29.41							Top of Box 6				
	0.92						- as above				
	0.50						- as above, fractured				
31.09											
	1.43					40°	- as above, massive				
32.61											
	0.44					70°	- as above, slightly carbonaceous fracture at base				
	0.20						- as above, highly broken, iron stained		Fault Zone		
							(Major Fault zone, indicated by geophysical log, core loss and condition) Top of Box 7				
	0.38						- as above, minor clasts				
34.14											
	0.15						- as above				
34.59											
	0.46					65°	- as above, massive, clasts absent				
35.20											
	0.54						- as above, highly broken				

<u>DIAMOND DR'</u>	<u>CORE LOG</u>
{ALL ANGLES MEASURED FROM CORE AXIS}	

HOLE No: C.C.D.H. 21 SHEET No: 4

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

(ALL ANGLES MEASUR.

FROM CORE AXIS)

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

55.17

DIAMOND DR' CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN #21 SHEET No: 6

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

FROM CORE AXIS)

HOLE No: CORBIN #21 SHEET No: 7

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DR' CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN #21 SHEET No: 8

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
73.09	1.06					30°	- as above, unbroken				
74.37	0.89					40°	- as above, plant fragments				
							Top of Box 17				
72.59	0.17						SANDSTONE - medium-grained, light grey, redrilled, clay at base				
	1.03					35°	SILTSTONE - as siltstone above, unbroken				
76.81	1.52					40°	- as above				
78.33	0.32					45°	- as above, sandy at base				
	0.18						MUDSTONE - dark grey				
79.25	0.01						- as above, pulverized, carbonaceous				
	0.34						- as above, less carbonaceous, silty at center				
							Top of Box 18				
	1.02					45°	- as above, becoming silty at base				
80.77	0.46						SILTSTONE - grey with plant fragments				
	0.89					40°	SANDSTONE - fine-grained, silty				
	0.18						SILTSTONE - grey with sandy lenses				
82.30	1.22					40°	- as above, with plant fragments				
							Top of Box 19				
	0.31						- as above, no plant fragments				
83.82	0.53						- as above				
	0.11						- as above, sheared, broken				
	0.85						- as above, unbroken				

DIAMOND DR' CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN #21 SHEET No: 9

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
85.34											
	0.67						- as above				
	0.14						- as above, broken				
86.26											
	0.10						SANDSTONE - medium-grained, light grey, broken and rounded, probably caved material				
	0.49						SILTSTONE - as siltstone above, broken				
87.48											
	0.05						SANDSTONE - light grey, medium-grained, broken and rounded, probably caved material				
	0.28						SILTSTONE - as siltstone above, broken				
							Top of Box 20				
	1.23						- as above, interbeds of medium-grained sandstone, unbroken, broken at base				
89.00											
	1.49						- as above, unbroken, medium-grain sand absent				
90.53											
	1.13						- as above				
							Top of Box 21				
	0.36					45°	- as above				
92.05											
	0.67					50°	- as above, broken, interbedded with medium-grained sand at base				
92.66											
	0.61					40°	- as above, broken, medium-grained sand at top				
93.42											
	0.96					40°	- as above, interbedded with fine-grained sand, broken at base				
94.43											
	0.96					50°	- as above, less sandy, unbroken				

FROM CORE AXIS)

HOLE No: CORBIN #21 SHEET No: 10

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT. : _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

FROM CORE AXIS)

HOLE No: CORBIN #21 SHEET No: 11

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG

HOLE No: CORBIN #21 SHEET No: 12

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DR' CORE LOG
(ALL ANGLES MEASUR. FROM CORE AXIS)

HOLE No: CORBIN #21 SHEET No: 13

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.06						COAL - dull and bright, sheared				
	0.02						- bright banded, very highly sheared				
	0.10						- dull banded, sheared				
	0.04						- bright banded, sheared				
	0.04						- dull and bright, sheared				
	0.02						- dull, sheared				
	0.01						- bright, sheared				
	0.04				108.53		- dull, sheared				
							CORE LOSS 0.47 m				
110.34					109.00						
	0.04						COAL - dull, sheared				
	0.01						- bright banded, sheared				
	0.05						- dull, sheared				
	0.09				109.19		- dull banded, pulverized				
							CORE LOSS 0.41 m				
	0.33				109.60		COAL - dull, sheared				
							- stoney, sheared				
					109.95						
							CORE LOSS 0.25 m				
111.10					110.20						
	0.17						COAL - dull, sheared				
					110.37						
							CORE LOSS 0.15 m				
	0.01				110.52		COAL - bright banded, sheared				
	0.01						- dull, sheared				
	0.01						- bright banded, sheared				
	0.04						- dull, sheared				
	0.04						- dull, pulverized				
	0.05						- dull, sheared				
	0.21						- bright banded, sheared				
111.86					110.89						

DIAMOND DR CORE LOG
(ALL ANGLES MEASUR. FROM CORE AXIS)

HOLE No: CORBIN #21 SHEET No: 14

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ **ELEV. COLLAR:** _____ **TOTAL DEPTH:** _____ **COAL LICENSE:** _____

LAT: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN #21 SHEET No: 15

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN #21 SHEET No: 16

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DR' CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN #21 SHEET No: 17

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
125.58					125.46						
	0.11						- dull, sheared				
	0.06						- stoney				
	0.04						- dull, sheared				
	0.08						- stoney				
					125.75						
127.10							CORE LOSS 3.61 m				
	0.11						SANDSTONE - grey, fine-grained, broken, fragments rounded, probably caved, excluded from sample				
	0.11				129.36		COAL - dull banded, sheared	21-1-7			
	0.10						- stoney				
	0.04						- dull banded, sheared				
128.02											
	0.24						CLAYSTONE - grey, thin coaly bands, sheared				
	0.11						COAL - dull, sheared and pulverized				
	0.19						COAL, CLAYSTONE, SANDSTONE, mixed, broken, rounded, redrilled, probably caved, excluded from sample				
129.24											
	0.51				130.47		CLAYSTONE - grey, thin coaly bands				
130.15											
							CORE LOSS 1.79 m				
							Top of Box 28				
130.15					132.26						
	0.14						CLAYSTONE - broken, fragments rounded	21-1-8			
	0.49						- as above, unbroken with thin coaly bands				
	0.08						- as above, sheared broken and pulverized				
	0.28						- as above, unbroken, very coal				

DIAMOND DR' CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN #21 SHEET No: 18

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

(ALL ANGLES MEASUR

(FROM CORE AXIS)

HOLE No: CORBIN #21 SHEET No: 19

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DR' CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN #21 SHEET No: 20

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
145.39											
	0.13						- dull banded, sheared and broken				
145.69											
	0.18						- as above, pulverized mixed with drilling mud				
146.91											
147.53											
	0.34						- dull, pulverized, mixed with drilling mud				
	0.01				146.05		CLAYSTONE - coaly				
148.74							CORE LOSS 2.69 m				
					148.74						
	0.18						COAL - dull, pulverized, drilling mud	21-1-13			
	0.30						CLAYSTONE - grey, unbroken, slickensides				
149.35											
	0.18						COAL - dull banded, pulverized, with drilling mud				
	0.13						- dull, sheared, unbroken, with calcite veins				
					149.53						
150.57							CORE LOSS 2.26 m				
151.79											
	0.60				151.79		- dull, pulverized with drilling mud	21-1-14			
152.70											
							CORE LOSS 3.49 m				
							Top of Box 30				
153.62											
	0.03				153.62		- as above				
	0.22						- stoney, sheared				
	0.03						- dull and bright, pulverized				
	0.11						CLAYSTONE - broken				
	0.05						COAL - dull banded; sheared				

<u>DIAMOND DR'</u>	<u>CORE LOG</u>
(ALL ANGLES MEASURED FROM CORE AXIS)	

HOLE No: CORBIN #21 SHEET No: 21

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DR' CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: C.C.D.H. 22 SHEET No: 1

DATE BEGUN: JULY 18/78 DEPTH: _____ BEARING: 083° U.T.M. 5483859.5N; 669446.2 E
DATE FINISHED: JULY 23/78 ELEV. COLLAR: 2045.0 metres TOTAL DEPTH: 124 metres COAL LICENSE: 414, LOT 6995
COAL MTN., CORBIN, B.C. HOLE ANGLE: 74° LOGGED BY: HOFFMAN CORE SIZE: HQ

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
							Triconed to 32 metres; no core		See Golder		
							Top of Box 1		log for		
	0.30						MUDSTONE - grey, pulverized		geological		
32.31									data		
	1.65						SILTSTONE - grey, with some sandy interbeds, core somewhat broken, iron oxide staining along fractures				
33.83											
	1.70						- as above				
35.36											
	0.41						- as above				
							Top of Box 2				
	1.17						- as above				
36.88											
	1.48					80°	SANDSTONE - medium-grained, light grey, lithic, iron staining along fractures				
38.40											
	1.45						- as above				
							Top of Box 3				
	0.11						- as above				
39.93											
	1.55					70°	- as above, with irregular calcite-filled fractures				
41.45											
	1.56						- as above				
42.98											
	0.94						SANDSTONE - light grey, medium-grained, lithic, with frequent irregular silty interbeds				
							Top of Box 4				
	0.60						- as above				
44.50											
	1.55					75°	- as above				

(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: C.C.D.H. 22 SHEET No: 2

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

FROM CORE AXIS)

HOLE No: C.C.D.H. 22 SHEET No: 3

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DR' CORE LOG
(ALL ANGLES MEASUR. FROM CORE AXIS)

HOLE No: C.C.D.H. 22 SHEET No: 4

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
62.48											
	0.15						- as above				
	0.07						COAL - dull				
	1.39						MUDSTONE - dark grey, with silty interbeds				
64.01											
	1.10						- as above				
	0.49						SILTSTONE - grey, with occasional sandy beds				
65.53											
	0.05						- as above				
							Top of Box 9				
	1.41					45°	- as above, sandy beds more frequent, core broken, with irregular calcite veins and slickensides				
67.08											
	1.55						- as above, less broken, calcite and slickensides absent, bedding irregular				
68.58											
	1.30						- as above				
							Top of Box 10				
	0.23						- as above				
70.10											
	1.53						- as above, much iron oxide staining				
71.63											
	1.00						- as above, less staining				
	0.60						MUDSTONE - dark grey, carbonaceous, plant remains				
73.76											
	0.44						- as above, silty				
							Top of Box 11				

DIAMOND DR' CORE LOG
(ALL ANGLES MEASUR. FROM CORE AXIS)

HOLE No: C.C.D.H. 22 SHEET No: 5

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DR' CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: C.C.D.H. 22 SHEET No: 6

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.04						COAL - dull				
	0.15						CLAYSTONE - carbonaceous, broken				
84.12											
							CORE LOSS 3.41 m				
	0.35				85.86		COAL - dull, pulverized	22-1-3			
84.73							Top of Box 13				
	0.25						- as above, mixed with claystone chips				
85.95											
	0.16						- as above				
86.56											
	0.15						- as above				
87.48							CORE LOSS 0.80 m	22-1-4			
	0.05				87.57		COAL - as above				
87.78											
	0.07						CLAY - mixed with pulverized coal				
88.39											
	0.03						CLAYSTONE - coaly				
							CORE LOSS 1.36 m				
	0.08				89.08		COAL - dull and bright, broken and pulverized				
88.70											
	0.24						COAL - dull, broken, mixed with claystone chips				
89.31											
	0.13						- stoney				
89.92							CORE LOSS 0.84 m				
	0.11				90.37		COAL - dull, sheared, broken	22-1-5			
90.53											
	0.13						- stoney				
	0.10						- dull, pulverized				
91.14											
	0.10						- as above, mixed with claystone chips				
91.44											
	0.35						CLAYSTONE - carbonaceous, broken				

DIAMOND DI CORE LOG
(ALL ANGLES MEASU. FROM CORE AXIS)

HOLE No: C.C.D.H. 22 SHEET No: 7

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
92.05											
	0.04						CLAYSTONE - as above				
	0.12						CLAYSTONE - as above				
	0.18						CLAY - mixed with pulverized coal				
	0.10						CLAYSTONE - carbonaceous, broken				
92.96							CORE LOSS 1.83 m				
							Top of Box 14				
	0.04				93.43		CLAY - mixed with pulverized coal	22-1-6			
	0.35						CLAYSTONE - coaly				
	0.04						COAL - dull banded, broken				
93.57											
	0.22						- dull, pulverized, mixed with calystone chips				
94.49							CORE LOSS 0.89 m				
	0.13				94.95		CLAYSTONE - coaly				
	0.03						COAL - dull banded, broken				
95.10											
	0.29						- dull, pulverized				
	0.20						- dull, broken				
96.32							CORE LOSS 0.54 m				
	0.10				96.18		CLAYSTONE - coaly, broken	22-1-7			
	0.04						COAL - bright, broken				
	0.27						CLAYSTONE - highly carbonaceous, broken				
	0.07						COAL - dull banded, broken				
97.54											
	0.15						COAL - dull and bright, broken				
	0.16						- stoney				
	0.17						CLAYSTONE - carbonaceous, broken, slickensides				
98.15							CORE LOSS 1.34 m				
	0.18				98.49		CLAYSTONE - as above				
	0.08						CLAY - mixed with pulverized coal				
	0.26						COAL - dull, broken, slickensides				

DIAMOND DI CORE LOG
(ALL ANGLES MEAS. FROM CORE AXIS)

HOLE No: C.C.D.H. 22 SHEET No: 8

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.17						CLAYSTONE - highly carbonaceous, with calcite vein- lets				
	0.07						COAL - bright, sheared, broken				
	0.34						CLAYSTONE - carbonaceous, broken				
							CORE LOSS 0.66 m				
							Top of Box 15				
99.67											
	0.59				100.25		CLAYSTONE - as above	22-1-8			
	0.22						COAL - dull, pulverized				
	0.06						- dull banded, broken				
							CORE LOSS 0.61 m				
101.19											
	0.12				101.73		COAL - dull and bright, broken				
	0.30						- dull banded, broken				
	0.06						- dull, pulverized				
	0.15						CLAYSTONE - coaly, highly broken				
							CORE LOSS 0.71 m				
102.72											
	0.15				103.07		CLAYSTONE - as above	22-1-9			
	0.07						COAL - dull, pulverized				
	0.14						- stoney				
104.24											
	0.06						MUDSTONE - grey				
	0.33						COAL - dull banded, broken				
	0.20						CLAYSTONE - coaly				
	0.17						- carbonaceous				
					104.19		Top of Box 16				
							CORE LOSS 1.67 m				
105.77											
	0.30				105.85		COAL - dull and bright, broken	22-1-10			
	0.24						- stoney				
	0.03						- bright, broken				

DIAMOND D1 CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: C.C.D.H. 22 SHEET No: 9

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.15						- stoney, broken				
	0.04						- stoney, sheared, slickensides				
	0.15						- stoney, broken				
	0.31				107.07		- dull banded, broken and pulverized				
							CORE LOSS 0.18 m				
106.98											
	0.23				107.25		CLAYSTONE - coaly, broken				
	0.14						COAL - stoney, with bright coal bands				
	0.13						- dull, pulverized, mixed with clay				
	0.35						CLAYSTONE - carbonaceous, with bright coal bands				
	0.05						- as above, coaly				
	0.30						COAL - stoney, with bright coal bands				
108.51											
	0.12				108.60		- as above	22-1-11			
	0.05						SILTSTONE - grey				
	0.34						COAL - stoney				
	0.04						- dull and bright, broken				
	0.22						- dull banded				
	0.27						- dull, broken				
	0.08						- dull banded, broken				
	0.03						CLAYSTONE - carbonaceous				
	0.06				109.81		COAL - dull banded, broken				
109.88							CORE LOSS 0.39 m				
	0.10				110.20		- as above, broken				
	0.07						- dull, pulverized, mixed with clay				
	0.03						CLAYSTONE - carbonaceous, broken				
	0.05						COAL - stoney, broken				
	0.05						SILTSTONE - grey				
	0.20						COAL - dull, broken				
	0.05						- dull and bright, broken				
	0.20						- stoney, broken, trace pyrite				
	0.03						SILTSTONE - grey				

DIAMOND DI CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: C.C.D.H.22 SHEET No: 10

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.06						COAL - dull banded, broken, trace pyrite				
	0.07						CLAYSTONE - carbonaceous, broken, slickensides				
	0.24						COAL - dull banded, broken, trace pyrite				
	0.05						- stoney, broken, slickensides, trace pyrite				
111.25											
	0.15						- dull and bright, broken, slickensides, trace pyrite				
					111.55						
							CORE LOSS 0.29 m				
				47.6%	111.84						
	0.50						SILTSTONE - grey, with coaly inclusions, minor pyrite				
	0.86						- as above, with interbeds of medium-grained sand				
112.78											
	0.02						- as above				
	0.47						SANDSTONE - light grey, medium-grained, lithic, cross-bedded, with silty and carbonaceous inclusions at top; Moose Mountain Sandstone				
113.39											
	0.43						- as above, massive				
							Top of Box 18				
	1.06						- as above				
114.91											
	1.49					65°	- as above				
116.48											
	1.48						- as above				
117.96						0	Top of Box 19				
	1.38					60	- as above				
119.48											
	1.44						- as above				

[ALL ANGLES MEASURED FROM CORE AXIS]

HOLE No: C.C.D.H.22 SHEET No: 11

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG

(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 23 SHEET No: 1

DATE BEGUN: JULY 24/78 DEPTH: _____ BEARING: 276° U.T.M. 5483350.2N; 669493.5 E
 DATE FINISHED: JULY 28/78 ELEV. COLLAR: 2059.0 metres TOTAL DEPTH: 149 metres COAL LICENSE: 414, LOT 6995
 LOC: CORBIN, COAL MTN., B.C. HOLE ANGLE: 56° LOGGED BY: G. HOFFMAN CORE SIZE: HQ

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
							Top of Box 1		See Golder		
	0.12						CLAY - brown; mixed with siltstone chips		log for		
	0.47						MUDSTONE - grey; core highly broken		geotechnical		
	0.22						SANDSTONE - fine-grained		data		
4.27											
	1.36						MUDSTONE - medium grey; with frequent interbeds of sandstone and siltstone towards base; stained with iron oxides; bedding convolute				
	0.12					50°	SILTSTONE - grey; with some iron oxide staining; core somewhat broken				
5.79											
	0.71						- as above				
6.40											
	0.28						- as above				
	0.07						COAL & CLAY - mixed and pulverized				
							Top of Box 2				
	1.17					30°	SILTSTONE - grey with sandy beds; iron staining; minor muscovite flakes; cross-bedding; core somewhat broken				
7.92											
	0.49						- as above				
	0.05						MUDSTONE - carbonaceous; pulverized				
9.14											
	0.03						- as above				
	0.28					50°	SILTSTONE - grey; minor claystone bands; core iron stained and highly broken				
	1.23						- as above; with thin coaly bands				
10.67							Top of Box 3				
	1.74						- as above				
12.19											
	0.21						- as above				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURE FROM CORE AXIS)

HOLE No: CORBIN 23 SHEET No: 2

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.52					50°	SANDSTONE - medium grey; fine-grained; frequent thin silty interbeds; core iron stained; broken cross-bedded				
	0.06						- as above; mixed with clay; minor slicken- sides; highly broken				
	0.24						- as above; somewhat broken				
	0.56						- as above; unbroken				
13.72											
	0.24						- as above; somewhat broken				
							Top of Box 4				
	1.13					55°	- as above				
15.24											
	0.47						- as above; highly broken				
	0.52					60°	MUDSTONE - grey with minor silty interbeds				
	0.64						- as above; core highly sheared and broken slickensides on fragments				
	0.81						- as above; less broken				
							Top of Box 5				
	0.61						- as above; core somewhat broken; minor carbonaceous horizons				
18.29											
	0.60						- as above; not carbonaceous				
18.90											
	1.29						- as above; less broken				
20.42											
	1.25					60°	SILTSTONE - grey with occasional sandy interbeds Top of Box 6				
	0.24						- as above				
21.94											
	0.31						- as above				
	0.15						- as above; core highly sheared and broken slickensides				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURE FROM CORE AXIS)

HOLE No: CORBIN 23 SHEET No: 3

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	1.17						- as above; unbroken				
23.47											
	1.47					55°	SANDSTONE - grey; fine-grained; with interbeds of Siltstone; medium-grained sandstone; cross- bedded; iron stained				
25.60							Top of Box 7				
	0.93					60°	- as above				
26.52											
	0.32						- as above; core somewhat broken				
	1.33						- as above; core unbroken				
27.74											
	0.74					55°	SILTSTONE - medium grey with frequent sandy interbeds				
28.65											
	0.32						- as above				
	0.10						- as above; core highly sheared and broken slickensides				
	0.13					55°	- as above; unbroken				
							Top of Box 8				
	0.55						- as above; unbroken; iron stained				
	0.07						- as above; core powdered and mixed with clay; carbonaceous; no sandy interbeds				
	0.27						- as above; core somewhat broken				
30.18											
	0.69						- as above; core somewhat broken				
31.09											
	1.14					65°	- as above; core unbroken				
32.61											
	0.23						- as above; core highly broken and iron stained; mixed with clay				
32.92											
	0.49					60°	SANDSTONE - fine grained; with frequent thin silty interbeds; core unbroken				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 23 SHEET No: 4

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 23 SHEET No: 5

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS,BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.78						SANDSTONE - grey; fine-grained; with frequent silty interbeds; cross-bedded; core unbroken				
43.28											
	0.44					60°	- as above				
	0.05						- as above; core highly broken and sheared; slickensides				
	0.94						- as above; core unbroken				
44.80											
	0.69					70°	- as above				
							Top of Box 12				
	0.68						- as above				
46.63											
	0.24					65°	SILTSTONE - grey				
	1.19						SANDSTONE - light grey; medium-grained cross-bedded				
47.85											
	0.37					65°	- as above; fine-grained				
	0.60						SILTSTONE - grey				
	0.37					60°	SANDSTONE - fine-grained; light grey; with very small siltstone clasts				
	0.16						- as above; core highly broken; iron stained				
49.38											
	0.41					65°	SILTSTONE - grey; core unbroken				
							Top of Box 13				
	0.94						- as above				
	0.03						COAL - bright; highly broken and powdered				
50.90											
	1.23					70°	SILTSTONE - grey; with occasional sandy interbeds towards base				
	0.38						- as above; core broken and iron stained				
52.42											
	0.15					60°	- as above				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 23 SHEET No: 6

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS,BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.38					50°	- as above; rich in fine-grained sand; small shale clasts; small siltstone clasts				
	0.87					60°	- as above; less sandy				
	0.15						Top of Box 14 - as above				
53.95	1.26					60°	MUDSTONE - grey; with some silty interbeds; plant fossils				
	0.38					50°	SANDSTONE - light grey; medium-grained; interbeds of fine-grained sandstone				
55.47	1.30						- as above				
57.00	0.44					50°	- as above				
	0.45					50°	SILTSTONE - grey; sandy at top Top of Box 15				
	0.69						MUDSTONE - grey; with occasional silty layers				
58.52	0.23					55°	- as above; with some iron staining				
	0.32						- as above; core highly broken; some carbonaceous inclusions				
60.04	0.07					60°	- as above; core broken; some slickensides and iron staining				
	1.34					65°	SILTSTONE - with frequent thin sandstone interbeds; cross-bedding				
	0.28					60°	SANDSTONE - medium-grained; with thin silty interbeds; core broken and iron stained Top of Box 16				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED ON CORE AXIS)

HOLE No: CORBIN 23 SHEET No: 7

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	1.21						SANDSTONE - as above; with irregular thin calcite veins				
63.09											
	0.84					60°	SILTSTONE - grey				
	0.63					65°	- as above; with some thin carbonaceous layers; trace pyrite				
64.62											
	0.13						- as above; sandy				
	1.11					60°	- as above; carbonaceous layers becoming more frequent towards base				
					65.68						
							CORE LOSS 0.65 m				
	0.02				66.33		COAL - bright	23-3-1			
	0.08						- dull banded; pulverized				
	0.09						- dull and bright				
	0.04						- dull banded				
Blank							Top of Box 17				
	0.04						COAL - bright banded				
	0.03						- dull banded				
	0.07						- bright				
	0.04						- dull and bright				
	0.12						- dull banded				
	0.39						CLAYSTONE - carbonaceous; with occasional thin bright coal bands; pulverized at base				
67.36											
	0.21						- as above; unbroken				
	0.06						COAL - stoney; unbroken				
					67.52						
67.66							CORE LOSS 0.40 m				
					67.92						
	0.05						COAL - dull banded				
	0.04						- dull				

DIAMOND DRILL CORE LOG

(ALL ANGLES MEASURE OM CORE AXIS)

HOLE No: CORBIN 23 SHEET No: 8

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.06						CLAYSTONE - carbonaceous with thin bright coal bands; core broken				
	0.07						COAL - bright banded; broken				
	0.06						- dull banded; broken				
	0.06						CLAYSTONE - coaly, unbroken				
	0.05						COAL - dull; sheared				
	0.09						- dull and bright; sheared				
	0.06						- stoney; unbroken				
	0.03						- dull; sheared				
	0.09						- dull banded; sheared				
	0.09						- dull; broken				
	0.03						CLAYSTONE - carbonaceous				
	0.04						COAL - dull; pulverized				
					68.74						
68.88							CORE LOSS 2.96 m				
					71.70						
	0.02						COAL - dull and bright	23-3-2			
	0.02						- bright banded				
	0.06						- dull; sheared				
	0.07						- dull; pulverized				
	0.10						- dull banded; pulverized				
70.10											
71.32											
	0.03						- dull; broken				
	0.26						- dull banded; sheared				
	0.15						- dull and bright; sheared				
	0.04						- dull banded; sheared				
	0.04						- dull; sheared				
	0.08						- bright banded; sheared				
	0.05						- bright; sheared				
	0.05						- dull and bright; sheared				
	0.06						- dull; pulverized				

DIAMOND C ' CORE LOG
(ALL ANGLES MEASUR. FROM CORE AXIS)

HOLE No: CORBIN 23 SHEET No: 9

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
					72.73			23-3-3			
72.24											
	0.09						COAL - dull banded; pulverized				
	0.05						- dull; sheared				
	0.05						- dull banded; pulverized				
	0.06						- dull; sheared				
	0.08						- dull banded; pulverized				
	0.05						- dull; sheared				
							Top of Box 18				
	0.05						COAL - dull; sheared				
	0.07						- dull and bright; pulverized				
	0.02						- stoney				
	0.03						- bright banded; sheared				
	0.06						- dull and bright; pulverized				
	0.06						- dull; pulverized				
	0.02						- stoney				
73.15											
	0.13						- dull banded; sheared				
	0.25						- dull; pulverized				
	0.09						- dull; sheared				
	0.04						- dull and bright; sheared				
					73.93						
73.76							CORE LOSS 0.55 m				
					74.48						
	0.04						- as above				
	0.04						- as above; pulverized				
	0.05						- dull; sheared				
	0.11						CLAYSTONE - coaly; with thin bright coal bands; unbroken				
	0.04						COAL - dull banded; pulverized				
	0.06						- bright banded; sheared				
72.28											

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 23 SHEET No: 10

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
72.28					74.82		CORE LOSS 0.26 m				
	0.06				75.08		COAL - bright banded; sheared	23-3-4			
	0.06						- dull banded				
	0.01						CLAYSTONE - carbonaceous				
	0.01						COAL - bright				
	0.05						CLAYSTONE - carbonaceous				
	0.06						COAL - dull				
	0.08						- dull; pulverized				
	0.07						- dull and bright				
	0.04						- dull and bright; pulverized				
					75.52						
75.90							CORE LOSS 0.41 m				
					75.93						
	0.03						COAL - dull banded				
	0.06						- dull and bright				
	0.04						- dull; sheared				
	0.07						- dull and bright				
	0.20						- dull				
	0.05						- dull; sheared				
	0.19						- dull				
	0.03						- dull and bright				
	0.02						- dull; sheared				
	0.08						- dull banded; pulverized				
	0.08						- dull banded				
	0.02						- bright banded				
	0.03						- dull				
76.81											
	0.17						- dull banded; sheared				
	0.18						- dull; pulverized				
	0.14						- dull banded; pulverized				
	0.19						- dull; pulverized				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASUR. FROM CORE AXIS)

HOLE No: CORBIN 23 SHEET No: 11

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
							Top of Box 19				
	0.15						COAL - as above				
					76.66						
77.72							CORE LOSS 0.30 m				
					77.96						
	0.10						CLAYSTONE - carbonaceous	23-3-5			
	0.06						- as above; sheared				
	0.29						- unsheared				
	0.16						COAL - dull and bright; sheared				
	0.06						- bright banded				
	0.10				77.96		- dull banded; sheared				
78.94											
	0.20						MUDSTONE - grey				
	0.04						COAL - bright banded				
	0.01						- bright				
	0.11						MUDSTONE - as above				
	0.05			58.9%			COAL - bright				
	0.04				79.14		MUDSTONE - medium grey				
	0.02						- sheared				
	0.22						- unsheared				
79.85											
	1.45					60°	SILTSTONE - grey with some sandy interbeds; thin irregular calcite veins				
81.38											
	0.36						- as above				
							Top of Box 20				
	1.16					60°	- as above				
82.90											
	0.64						- as above; more sandy; calcite veins				
	0.87						- as above; less sandy				
84.43											
	0.80					60°	MUDSTONE - with silty layers				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 23 SHEET No: 12

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.08						MUDSTONE - carbonaceous; sheared and broken				
	0.50						- grey				
							Top of Box 21				
	0.18						- as above				
85.95											
	0.13					60°	- as above				
	1.33						SILTSTONE - with some sandy layers				
87.48											
	0.73						- as above				
	0.63						SANDSTONE - grey; medium-grained; many small calcite veins				
	0.18						- fine-grained				
89.00											
	0.82						SANDSTONE - fine-grained; light grey; with frequent interbeds of medium-grained sandstone and grey siltstone; cross-bedded				
							Top of Box 22				
	0.22					60°	- as above				
	0.07						- as above; highly broken				
90.22											
	0.48						- as above; slickensides at top				
	0.39						SILTSTONE - grey				
	0.19						MUDSTONE - grey				
	0.22						- highly broken with slickensides				
	0.11						- as above; unbroken				
91.74											
	1.40						- as above; with some silty layers				
93.27											
	0.35					50°	- as above				
							Top of Box 23				
	1.05						- as above; with silty layers				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 23 SHEET No: 13

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
94.79											
	1.60						- as above; silty; slickensides at top				
96.32											
	0.24						- as above				
	0.29						- as above; sheared and broken				
	0.23					60°	- as above; unbroken				
	0.29						- as above; highly sheared and broken				
	0.31						SILTSTONE - grey and broken				
							Top of Box 24				
	0.23					50°	- as above; with interbeds of medium-grained sandstone				
7.84											
	0.79						- as above highly sheared and broken; with irregular calcite veins; possible fault zone				
	0.52						- as above; less broken				
9.06											
	0.77						MUDSTONE - grey; silty; highly sheared and broken with many irregular calcite veins				
	0.11						- as above; core pulverized				
100.28											
	0.40						SILTSTONE - grey with thin calcite veinlets				
	0.11						MUDSTONE - carbonaceous; pulverized				
	0.08						SILTSTONE - grey; broken; with many thin irregular calcite veinlets				
101.80											
	0.09						- as above				
	0.33						MUDSTONE - with many irregular calcite veinlets				
	0.05						- as above; highly broken and sheared; with slickensides				
							Top of Box 25				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASUR. FROM CORE AXIS)

HOLE No: CORBIN 23 SHEET No: 14

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.20						MUDSTONE - as above; sheared; with slickensides				
102.11											
	1.38						- as above; core unbroken; with slickensides surfaces on joints; and minor calcite veinlets				
103.63											
	0.07						- as above; core badly broken and sheared				
	0.56						- as above; unbroken with slickensided joints; sheared zone at base				
104.24											
	0.66						- as above; unbroken; calcite absent				
	0.06						- carbonaceous; with bright coal bands				
	0.60						- not carbonaceous; unbroken				
							Top of Box 26				
	0.08						MUDSTONE - dark grey; broken; slickensides; carbon- aceous towards base				
105.76											
	1.52						- as above				
					107.56						
							CORE LOSS 0.28 m				
	0.02				107.84		COAL - stoney	23-1-1			
107.29											
	0.05						- dull banded				
	0.13						- dull				
	0.20						- dull and bright				
	0.06						- bright; pulverized				
	0.06						- dull and bright; pulverized				
	0.05						- dull banded				
	0.07						- dull				
	0.06						- dull and bright				
	0.13						- dull				
	0.08						- dull banded				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 23 SHEET No: 15

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.03						- stoney				
	0.02						- dull banded				
	0.09						- dull and bright				
	0.02						- bright				
	0.04						- dull and bright				
	0.03						- bright banded				
	0.04						- bright				
	0.02						- stoney				
108.51											
	0.02						COAL - stoney				
	0.02						- dull and bright				
	0.05						- stoney				
	0.04						- dull; heavy				
	0.04						- dull				
	0.03						- dull and bright; core pulverized				
	0.11						- dull				
	0.09						- bright banded				
	0.04						- dull				
	0.05						- dull banded				
	0.04						- dull and bright				
	0.07						- dull banded				
	0.07						- dull and bright				
	0.04						CARBONACEOUS CLAYSTONE - with bright coal bands				
	0.07						COAL - bright banded; core pulverized				
	0.06						- dull and bright				
	0.05						CARBONACEOUS CLAYSTONE - with bright coal bands				
	0.12						COAL - dull and bright; core pulverized				
	0.05						- dull banded				
							Top of Box 27				
	0.06						- dull and bright				
	0.03						- bright banded				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 23 SHEET No: 16

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
110.03					110.19						
	0.07						COAL - dull	23-1-2			
	0.04						CARBONACEOUS CLAYSTONE				
	0.03						COAL - bright				
	0.04						- dull and bright				
	0.06						- dull and bright; core pulverized				
110.64											
	0.05						- dull and bright				
	0.06						- dull				
	0.05						- dull banded				
	0.08						- dull				
	0.07						MUDSTONE - light grey; with black coaly inclusions				
	0.07						CARBONACEOUS CLAYSTONE				
	0.06						COAL - dull and bright; sheared				
	0.02						- bright banded				
	0.04						- dull and bright				
	0.04						- bright banded				
	0.12						CLAYSTONE - coaly				
111.56											
	0.01						COAL - dull and bright				
	0.02						- bright				
	0.08						- dull				
	0.04						- dull and bright				
	0.06						- bright banded; sheared				
	0.09						- dull				
	0.09						- dull banded sheared				
	0.04						- bright banded; sheared				
	0.04						- dull and bright; sheared and pulverized				
112.17											
	0.07						COAL - dull and bright				
	0.06						- dull banded				
	0.07						- dull and bright				

DIAMOND DRILL CORE LOG

(ALL ANGLES MEASURE FROM CORE AXIS)

HOLE No: CORBIN 23 SHEET No: 17

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
 DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
 LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.03						- dull				
	0.06						- dull and bright				
	0.08						- dull banded				
	0.15						- dull				
	0.06						- dull banded				
	0.09						- dull and bright				
	0.08						- bright banded				
	0.06						CARBONACEOUS CLAYSTONE				
	0.08				112.45		COAL - dull and bright				
							CORE LOSS 0.19 m				
113.38											
	0.04				112.64		COAL - dull banded	23-1-3			
	0.15						- dull				
	0.06						- dull banded				
	0.02						- bright; pulverized				
	0.04						- dull and bright				
	0.08						- dull				
	0.03						- bright banded; pulverized				
	0.03						- dull and bright; pulverized				
	0.06						- dull banded				
	0.06						- dull and bright; pulverized				
	0.06						- bright banded; pulverized				
	0.04						- bright; pulverized				
	0.04						- bright banded; pulverized				
	0.08				113.43		- bright				
							CORE LOSS 0.88 m				
	0.36				114.31		CARBONACEOUS CLAYSTONE				
							Top of Box 28				
114.60											
	0.01						COAL - stoney				
	0.05						- bright banded; pulverized				
	0.07						- dull and bright; pulverized				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURE OM CORE AXIS)

HOLE No: CORBIN 23 SHEET No: 18

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.04						COAL - bright banded; pulverized				
	0.03						- dull; pulverized				
	0.05						CLAYSTONE - coaly				
	0.06						COAL - dull; highly weathered				
	0.05						- dull and bright				
	0.03						- bright; pulverized				
	0.03				115.09		- dull and bright; pulverized				
							CORE LOSS 0.39 m				
					115.48						
	0.27			78.0%			CLAYSTONE - coaly; highly pulverized				
116.34											
	0.50						CLAYSTONE - dark grey				
117.96											
	1.12						- as above; with sheared coaly phases				
	0.33						SILTSTONE - grey; with lenses and interbeds of light grey sandstone				
	0.38						- as above				
	0.57						SANDSTONE - fine-to medium-grained; light grey; with coaly bands and inclusions toward base				
							Top of Box 29				
	0.47						- as above				
119.50											
	0.07						- as above				
	0.17				119.60		CLAYSTONE - carbonaceous; dark grey	23-2-1			
	0.03						COAL - dull and bright				
	0.02						- bright				
	0.06						- dull and bright				
	0.05						CLAYSTONE - coaly				
	0.03						COAL - dull				
	0.05						- dull banded				
	0.06						- dull and bright				

DIAMOND DRILL CORE LOG

(ALL ANGLES MEASURE FROM CORE AXIS)

HOLE No: CORBIN 23 SHEET No: 19

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	1.21						CLAYSTONE - carbonaceous; dark grey				
121.01											
	1.17				122.45		- as above				
							CORE LOSS 0.26				
	0.05				122.71		COAL - bright banded; pulverized				
	0.10						CLAYSTONE - as claystone above				
	0.05						COAL - bright; pulverized				
	0.04						- dull and bright; pulverized				
	0.36						CLAYSTONE - as claystone above				
							Top of Box 30				
	0.62						- as above				
	0.11				124.04		- as above				
							CORE LOSS 0.39 m				
	0.07				124.43		COAL - dull banded; pulverized				
	0.04						- dull and bright; pulverized				
	0.06						- dull and bright				
	0.07						CLAYSTONE - as claystone above				
	0.04						COAL & CLAYSTONE - pulverized; fragments mixed				
124.97											
	0.06						COAL - dull and bright				
	0.02						CLAYSTONE - carbonaceous; dark grey				
	0.02						COAL - bright				
	0.07						- dull				
	0.06						- dull banded				
	0.09						- dull and bright				
	0.07						- dull				
	0.05						- dull and bright				
	0.06						CLAYSTONE - carbonaceous				
	0.05				125.26		COAL - dull				
							CORE LOSS 0.34 m				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURE FROM CORE AXIS)

HOLE No: CORBIN 23 SHEET No: 20

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
125.58					125.60						
	0.03						COAL - dull				
	0.06						- dull banded				
	0.05						- dull and bright				
	0.02						- bright banded				
	0.03						- dull and bright				
	0.03						- bright				
	0.05				125.87		- dull and bright				
							CORE LOSS 0.32				
	0.07				126.19		COAL & CLAYSTONE - interbedded				
	0.40						CLAYSTONE - carbonaceous; dark grey				
	0.10						COAL - dull; high specific gravity				
	0.06						- dull and bright				
	0.05						- dull banded				
	0.08				126.95		- dull				
							CORE LOSS 0.37 m				
	0.03				127.32		CLAYSTONE - carbonaceous	23-2-2			
	0.03						COAL - bright banded				
	0.05						COAL & CLAYSTONE - interbedded				
	0.23						CLAYSTONE - carbonaceous				
							Top of Box 31				
	0.71						CLAYSTONE - carbonaceous				
128.32											
	0.69						- as above				
	0.08						- as above; heavily pulverized				
	0.13						- as above; unbroken				
	0.16						- as above; pulverized				
	0.09						- unbroken				
129.84											
	0.75						- unbroken				
	0.15						COAL & CLAYSTONE - heavily sheared fragments; mixed				
	0.07										

DIAMOND DRILL CORE LOG

(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 23 SHEET No: 21

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
 DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
 LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.24						CLAYSTONE - carbonaceous; with bright coal bands				
	0.16						- as above; core broken and pulverized				
131.37											
	0.07						MUDSTONE - dark grey; with carbonaceous interbeds				
	0.05				131.05		CLAYSTONE - coaly				
							CORE LOSS 1.55 m				
131.98					132.60						
	0.13						COAL - dull and stoney; broken and pulverized; fragments mixed	23-2-3			
	0.10						- dull; heavy				
132.89											
	0.12						- as above				
	0.34						- as above				
	0.23						COAL & CLAYSTONE - pulverized; mixed				
	0.05						CLAYSTONE - coaly				
	0.03						COAL - dull; heavy				
133.81											
	0.02						COAL - dull and bright; sheared				
	0.02						- dull; mixed with claystone fragments; sheared				
	0.03						- dull and bright; sheared				
	0.07						- bright banded				
	0.04						CLAYSTONE - coaly				
134.72											
	0.01						COAL - dull; sheared				
	0.01						- dull and bright; sheared				
	0.07						CLAYSTONE - carbonaceous; sheared				
	0.12						COAL - dull; heavy; sheared				
	0.09						- as above; unsheared				
	0.13						- as above; sheared				
	0.04				134.25		CLAYSTONE - carbonaceous				
135.33							CORE LOSS 1.40 m				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURE FROM CORE AXIS)

HOLE No: CORBIN 23 SHEET No: 22

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
					135.65						
	0.11						COAL - dull; sheared	23-2-4			
	0.04						- bright banded; sheared				
	0.02						- dull; sheared				
	0.04						COAL & CLAYSTONE - mixed fragments				
	0.02						CLAYSTONE - carbonaceous				
	0.07						COAL - stoney				
	0.05						CLAYSTONE - sheared				
	0.07						COAL - stoney; with bright coal bands and pods				
	0.04						CLAYSTONE - carbonaceous				
135.94											
	0.08						COAL - stoney; with bright coal bands & pods				
	0.12						- stoney				
	0.07						CLAYSTONE - carbonaceous				
	0.47						- grey; with light bentonitic bands at base core deteriorated rapidly				
	0.08						- carbonaceous				
136.86											
	0.07						- carbonaceous; highly broken				
	0.68						- carbonaceous; with thin silty interbeds				
							Top of Box 33				
	0.05						- carbonaceous; highly broken and sheared				
	0.18						- carbonaceous; with some thin bright coal bands				
Blank											
	0.37						- carbonaceous; with a silty band toward base	23-2-5			
	0.04						COAL - dull and bright				
	0.04						- dull; sheared				
	0.04						CLAYSTONE - carbonaceous; sheared				
	0.48						- carbonaceous; with thin bright coal bands				

DIAMOND DRILL CORE LOG

(ALL ANGLES MEASURE FROM CORE AXIS)

HOLE No: CORBIN 23 SHEET No: 23

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
 DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
 LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.02						COAL & CLAYSTONE - pulverized; mixed				
	0.27						CLAYSTONE - carbonaceous; with silty band near top				
	0.09				139.26		COAL - stoney				
							CORE LOSS 0.68 m				
139.29					139.94						
	0.18						CLAYSTONE - carbonaceous; with thin bright coal bands and pods				
	0.03						COAL - dull and bright				
	0.08						- stoney				
	0.68						CLAYSTONE - as claystone above				
	0.07						SILTSTONE - with claystone clasts at base				
	0.10						CLAYSTONE - carbonaceous; with plant fragments				
					141.08						
140.82							CORE LOSS 0.28 m				
					141.36						
	0.14						COAL - dull banded				
	0.05						- stoney				
				76.7%							
	0.11					70°	SILTSTONE - grey; with coaly wisps; calcite-filled veins toward centre				
	0.20						SANDSTONE - medium-grained; with abundant silty matrix and coaly wisps				
	0.14						SANDSTONE - light grey; medium-grained; lithic; with thin coaly wisps				
	0.13						SANDSTONE - as sandstone above; coaly wisps absent; massive; with some cross-bedding Moose Mountain Sandstone				
	0.11						SANDSTONE - as sandstone above; core broken				
142.34							Top of Box 34				
	0.48					70°	- as above; massive				
	0.66						- as above; jointed; broken; and stained by iron oxides				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 23 SHEET No: 24

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 24 SHEET No: 1

DATE BEGUN: JULY 29/78 DEPTH: _____ BEARING: 279° U.T.M. 5483226.1N: 669498.4E
DATE FINISHED: AUGUST 2/78 ELEV. COLLAR: 2071.1 metres TOTAL DEPTH: 147 metres COAL LICENSE: 414, LOT 6995
LOC.: CORBIN, COAL MTN., B.C. HOLE ANGLE: 66° LOGGED BY: HOFFMAN & AIELLO CORE SIZE: HQ

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
							Top of Box 1		See Golder		
	0.46						Sandstone; fine-grained; light grey; broken and iron stained		log for		
3.35									geotechnical		
									data		
	0.27						as above				
	0.08						Coal; dull; pulverized				
	0.67					30°	Sandstone; as sandstone above				
4.88											
	1.74					40°	as above				
6.71											
	0.41						as above				
							Top of Box 2				
	0.88					35°	as above				
8.23											
	0.88					45°	as above				
	0.07						Clay; stained with iron oxides				
	0.27						Sandstone; as sandstone above				
9.75											
	0.48					35°	as above				
	0.08						Siltstone; with thin coaly bands				
10.97											
	1.14					30°	as above				
							Top of Box 3				
12.50											
	0.41						as above; unbroken				
	0.78					30°	Sandstone; fine-grained; light grey; iron stained; unbroken				
14.02											
	1.31					45°	as above				
15.54											

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 24 SHEET No: 2

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT. : _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 24 SHEET No: 3

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
24.99	0.26					40°	as above				
	0.11						as above; broken; fragments rounded				
	0.21						as above; unbroken				
26.21	0.50						Sandstone; fine-grained; light grey				
	1.15					45°	as above; silty				
	0.25						as above; silt absent; pulverized at base				
27.74											
	0.77						as above; unbroken				
	0.49						Siltstone; grey; unbroken				
							Top of Box 7				
29.26	0.30					45°	Sandstone; fine-grained; light grey				
	1.50					50°	as above; interbedded with medium-grained sand at base				
30.78											
	0.46						as above; with medium-grained sand				
31.09											
	0.42						as above; medium-grained				
	1.01					35°	as above; fine-grained				
32.61											
	0.05						as above; pulverized				
	0.22					45°	as above; unbroken				
							Top of Box 8				
	1.11					40°	as above				
34.14											
	0.92					45°	as above; with medium-grained; sandy inter- beds				
	0.53						Siltstone; interbeds of medium-grained sand				

DIAMOND DRILL CORE LOG

(ALL ANGLES MEASURE. FROM CORE AXIS)

HOLE No: CORBIN 24 SHEET No: 4

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
 DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
 LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
35.66											
	1.43					40°	as above				
							Top of Box 9				
	0.05						as above				
37.19											
	0.22					45°	as above				
	0.23						Siltstone; sand absent; sheared; slickensides; pulverized				
	1.09						as above; not sheared; slickensided or pulverized				
38.71											
	1.44					40°	as above; becoming sandy towards base				
40.23											
	0.90					45°	as above; interbeds of medium-grained sand				
							Top of Box 10				
	0.70					25°	as above				
41.76											
	0.69						as above; becoming more sandy towards base broken				
42.37											
	0.20						DRILLING MUD: no core				
	0.89					40°	Sandstone; medium and fine-grained interbeds with thin coaly bands				
43.59											
	0.82						as above				
	0.45					50°	Sandstone; fine-grained; with thin bright coal lenses				
44.81											
	0.11						as above				
							Top of Box 11				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 24 SHEET No: 5

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

AT: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 24 SHEET No: 6

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

DATE: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 24 SHEET No: 7

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
64.31											
	0.11					70°	as above				
							Top of Box 16				
	0.58					70°	as above; broken				
	0.60						Sandstone; medium-grained; with silty interbeds; unbroken				
66.14											
	0.79					55°	as above				
	0.71						Sandstone; fine-grained; light grey; unbroken				
67.67											
	0.21						as above				
67.97											
	0.28					60°	as above				
	0.58						Siltstone; sandy at top; thin coaly wisps; unbroken				
							Top of Box 17				
	0.39					65°	as above				
69.49											
	0.93					45°	as above; minor pyrite; plant fossils				
	0.53						Mudstone; with thin coaly bands; minor pyrite; plant fossils; unbroken				
70.71											
	0.01						as above				
	0.01						Coal; bright				
	0.18						Mudstone; as mudstone above				
	0.23				70.88		as above; broken; many thin coaly bands; pyrite				
71.32							CORE LOSS 0.28 m				
					71.16		Coal	24-1-1			
	0.02						stoney				
	0.02						dull banded				
	0.02						dull and bright				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 24 SHEET No: 8

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.04						Coal; dull banded				
	0.03						dull				
	0.02						dull banded				
	0.02						dull				
	0.03						dull and bright				
	0.05						dull banded				
	0.05				71.46		dull; pyrite				
72.85							CORE LOSS 0.38 m	↓			
	0.03				71.84		dull; pyrite; sheared	24-1-2			
	0.16						dull; pyrite; sheared; pulverized				
	0.08						Claystone; carbonaceous				
	0.07				72.18		as above; heavily sheared	↓			
73.76							CORE LOSS 0.42 m				
					72.60			24-1-2			
	0.24						Coal; dull; heavily sheared and broken				
	0.13				72.97		Claystone; thin coaly bands; broken				
74.98							CORE LOSS 0.13 m				
	0.12				73.10		as above; sheared and pulverized				
							Top of Box 18				
	0.02						as above; broken				
	0.05				73.29		Coal; dull				
75.90							CORE LOSS 1.55 m				
	0.03				74.84		dull and bright				
	0.06						dull				
	0.01						bright				
	0.03						dull banded				
	0.01						bright				
	0.19						dull				
	0.15						dull banded				
	0.11						dull and bright				
	0.07						dull banded; sheared and broken				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 24 SHEET No: 9

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.04				75.54		dull	↓			
76.81							CORE LOSS 0.72 m				
	0.03				76.26		Coal; dull; unbroken	24-1-3			
	0.12						dull banded				
	0.01						stone				
	0.02						dull and bright				
	0.04						dull				
	0.04						bright banded				
	0.13						dull banded				
	0.06						dull and bright				
	0.10						dull banded				
	0.01						bright banded				
	0.06						Claystone; carbonaceous				
77.72											
	0.11						Coal; dull and bright				
	0.06						dull banded				
	0.04						stone				
	0.01						bright banded				
	0.03						dull banded				
	0.02						bright banded				
	0.04						dull banded				
	0.03						dull				
	0.12						dull and bright; highly sheared and broken				
	0.10						dull; unbroken				
	0.05						dull banded				
	0.03						Claystone; broken; carbonaceous				
	0.05						Coal; dull banded				
	0.01						dull				
								✓			

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 24 SHEET No: 10

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 24 SHEET No: 11

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

AT: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

[illegible]

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: COBBIN 24 SHEET No: 12

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.18						as above				
	0.06						as above; with irregular dull coal clasts				
	0.26						as above; with thin coaly bands				
	0.88					65°	as above; coal absent				
93.57											
	1.20					60°	as above				
94.79											
	0.78						as above; more sandy				
95.40											
	0.72					70°	Sandstone; fine-grained; light grey				
							Top of Box 23				
	0.54					60°	as above; clay-filled fracture at base				
96.93											
	0.99					70°	Siltstone; grey; unbroken				
98.15											
	0.02						Coal; bright				
	1.31					60°	Siltstone; grey; unbroken				
99.67											
	0.69					65°	as above				
							Top of Box 24				
	0.84					70°	as above				
101.19											
	1.44					60°	as above				
102.72											
	0.93					60°	as above				
	0.37					10°	as above; bedding bent into an "S" shape; shear zone				
	0.23					50°	as above; bedding normal				
104.24											
	0.18						as above				
							Top of Box 25				
	0.12						as above				

DIAMOND DRI CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 24 SHEET No: 13

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	1.37					60°	Sandstone; fine-grained; with silty interbeds				
05.77											
	0.30						as above				
	0.85						Siltstone; grey				
	0.06						as above; interbedded with bright coal				
	0.26					55°	as above; coal absent				
07.29											
	1.26					60°	as above				
							Top of Box 26				
	0.27						Mudstone; grey				
08.81											
	0.10						as above				
	0.02						Siltstone; grey				
	0.04				109.22		Coal; dull	24-2-1			
	0.04						bright banded				
	0.09						dull banded				
	0.22						dull; sheared				
09.42											
	0.07						dull; sheared				
	0.04						dull; unbroken				
	0.01						bright; unbroken				
	0.02						dull; unbroken				
	0.01						bright; unbroken				
	0.09						dull; unbroken				
	0.04						dull and bright; unbroken				
	0.05						dull; unbroken				
	0.04						dull; unbroken				
	0.10				110.08		dull; unbroken				
							CORE LOSS 0.24 m				
	0.02				110.32		bright; unbroken				
	0.03						stone; unbroken				
	0.03						bright; unbroken				

*Any
- Waiting for the
info etc. Confidential
areas marked need
to be placed in
separate folder
- property file and log*

DIAMOND DRI CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 24 SHEET No: 14

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.08						dull; unbroken				
	0.01						bright; unbroken				
	0.08				110.57		dull; unbroken				
10.34							CORE LOSS 0.37 m				
	0.05				110.94		dull banded; unbroken				
	0.07						dull; unbroken				
	0.04						bright banded; unbroken				
	0.03						stoney; with bright bands; unbroken				
	0.04						bright banded; unbroken				
	0.03						dull banded; unbroken				
	0.01						bright; unbroken				
	0.02						stoney; unbroken				
	0.03						dull banded; unbroken				
	0.08						Claystone; with bright coal bands; unbroken				
	0.06						Coal; bright banded; unbroken				
	0.03						dull; unbroken				
	0.17						dull; heavily sheared				
	0.30						dull; sheared and pulverized				
	0.08				111.98		dull; badly broken				
11.56							CORE LOSS 0.54 m				
	0.07				112.52		dull; badly broken	24-2-2			
	0.12						dull; badly broken; pulverized				
12.17											
	0.04						Claystone; grey; broken				
	0.10						Coal; dull; sheared				
	0.07						bright banded; sheared				
	0.18						dull; unbroken				
	0.02						dull and bright; unbroken				
	0.04						dull banded; unbroken				
	0.08						dull; unbroken				
	0.04				113.24		dull and bright; unbroken				
							CORE LOSS 0.20 m				

DIAMOND DRI' CORE LOG
(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 24 SHEET No: 15

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.05				113.44		dull pulverized and broken				
	0.03						dull; unbroken				
	0.04						dull and bright; unbroken				
	0.07						dull banded; sheared; unbroken				
	0.01						bright; unbroken				
							Top of Box 27				
	0.09						dull and bright; sheared; broken				
113.39											
	0.06						dull and bright; sheared				
	0.05						dull banded; sheared				
	0.16						dull				
	0.08						dull and bright; sheared				
	0.24				114.38		dull; sheared				
114.00							CORE LOSS 0.15 m				
	0.03				114.47		Claystone	24-2-3			
	0.01						Coal; bright				
	0.07						dull				
	0.06						bright banded				
	0.03						dull				
	0.03						bright				
	0.04						dull				
	0.03						bright banded				
	0.07						dull banded				
	0.01						stoney				
	0.02						dull				
	0.04						dull				
	0.18						dull banded				
	0.08						bright banded				
	0.07						bright banded				
	0.03						dull				
	0.03						bright				

DIAMOND DRI' CORE LOG
(ALL ANGLES MEASURED ON CORE AXIS)

HOLE No: CORBIN 24 SHEET No: 16

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.05						dull and bright				
	0.04						dull banded				
115.52	0.25				115.61		Claystone; grey; carbonaceous				
							CORE LOSS 0.57 m				
	0.13				116.20		Coal; dull; pulverized				
	0.17						dull; heavily sheared				
	0.02						dull				
	0.01						bright banded				
	0.01						dull				
	0.07						dull; sheared; broken				
	0.05						Claystone; carbonaceous; sheared and pulverized				
	0.04						Coal; dull				
	0.14						Claystone; carbonaceous				
	0.09				116.93		Coal; dull banded; pulverized				
							CORE LOSS 0.94 m				
116.43	0.06			55.8%	118.88		Mudstone; grey; slickensides				
	0.78					55°	as above				
							Top of Box 28				
	0.52						as above; no slickensides unbroken				
	0.18						as above; highly broken				
117.96											
	1.10					50°	as above; unbroken				
	0.43						as above; broken				
119.48											
	0.55					50°	as above; unbroken; silty at base				
	0.65						Sandstone; fine-grained; broken at base				
120.40											
	0.13						Siltstone; grey; unbroken				
	0.24					50°	Sandstone; medium-grained; light grey; with silty interbeds				
							Top of Box 29				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURE FROM CORE AXIS)

HOLE No: CORBIN 24 SHEET No: 17

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	1.19					50°	as above				
122.22											
	0.92					45°	as above; silty beds absent				
123.44											
	0.31						as above; broken; iron stained; calcite- filled fractures				
	0.95					55°	Siltstone; sandy at top; thin coaly lenses at base				
	0.03						Coal; dull banded				
	0.08						dull				
	0.03						dull and bright				
124.97											
	0.02						dull and bright				
	0.04						dull banded				
	0.04						stoney				
	0.06						dull banded; pulverized				
	0.04						dull banded; broken				
							Top of Box 30				
	0.11						stoney; broken				
	0.82					70°	Claystone; highly broken; slickensides				
126.19											
	1.31					80°	as above; unbroken; slickensides on bedding planes				
127.71											
	1.03					80°	as above				
128.63											
	0.19						as above				
	0.07						as above; broken and pulverized				
	0.21					80°	as above; unbroken; slickensides				
							Top of Box 31				
	2.13					80°	as above; slickensides				
	0.02						Coal; stoney				

DIAMOND DRILL CORE LOG

(ALL ANGLES MEASURED FROM CORE AXIS)

HOLE No: CORBIN 24 SHEET No: 18

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
 DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
 LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
	0.03						Coal; dull and bright				
	0.04						dull				
	0.01						stoney				
	0.17						dull; sheared and pulverized; mixed with claystone chips				
	0.04						Claystone; unbroken				
31.67											
	0.12						Claystone; pulverized mixed with coaly chips				
	0.17						as above; heavily sheared and broken				
	0.11						as above; unbroken; slickensides on bedding				
33.20											
	0.47					70°	as above				
34.11											
	0.36					70°	as above				
	0.30						Coal and Claystone; pulverized; mixed				
	0.02						Coal; dull banded				
							Top of Box 32				
35.03											
	0.13						Claystone; with thin coaly bands; heavily sheared and broken				
	0.03						Coal; stoney; sheared				
	0.05						dull; sheared				
	0.09						dull; pulverized				
	0.06						dull banded; pulverized				
35.16											
	0.31						Claystone; heavily sheared and broken				
36.25											
	0.14						Coal; dull; heavily sheared and broken				
	0.05						stoney; heavily sheared; and broken				
	0.11					50°	Claystone; heavily sheared and broken				
	0.11						Coal; dull; heavily sheared and broken				

DIAMOND DRILL CORE LOG
(ALL ANGLES MEASURE. 5M CORE AXIS)

HOLE No: CORBIN 24 SHEET No: 19

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____
 DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____
 LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

MARKER BLOCKS	UNIT THICK.	RECOVD. THICK.	ACTUAL THICK.	% REC.	FINAL TOPS	BEDDING ANGLE	LITHOLOGY, ROCK TYPE, GRAIN SIZE, COLOUR, WEATHERING, GOUGE & SLICKS, BROKEN CORE.	SAMPLE No.	JOINTING	HARDNESS	FRACT. FREQ.
137.16											
	0.49					60°	Claystone; broken				
	0.02						Coal; dull				
	0.05						Claystone; with slickensides				
137.77											
	0.01						as above				
	0.03						Coal; dull and bright				
	0.75						Claystone; broken; slickensides				
138.99											
	0.16						as above				
	0.03						Coal; stoney; with bright bands				
	0.09						Sandstone; yellow; highly pyritic				
						50°	Claystone; grey; slickensides on bedding				
139.60											
	0.17						as above; broken				
							Top of Box 33				
	0.59					50°	Claystone; broken; slickensides				
	0.02						Coal; stoney				
140.51											
	0.98					50°	Claystone; broken; slickensides				
142.04											
	0.09					45°	as above				
	0.06						as above; silty; sheared and broken				
	0.03						Coal; bright banded				
	0.13					80°	Sandstone; light grey; medium-grained; with irregular coaly inclusions				
	0.42					75°	as above; massive; medium-to coarse-grained inclusions are absent; Moose Mountain Sand- stone				
142.95											
	0.37					60	as above; coarse-grained; massive				
	0.39						as above; coarse-grained; broken				

(ALL ANGLES MEASURED FROM CORE AXIS)

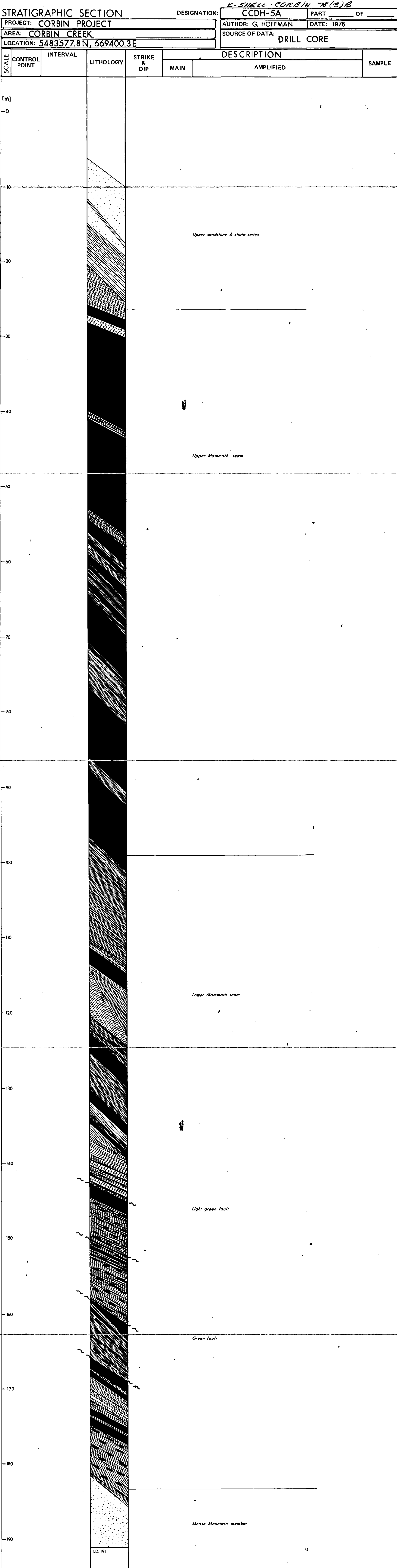
HOLE No: CORBIN 24 SHEET No: 20

DATE BEGUN: _____ DEPTH: _____ BEARING: _____ U.T.M. _____

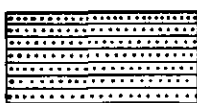

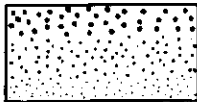


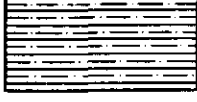
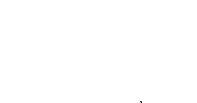


DATE FINISHED: _____ ELEV. COLLAR: _____ TOTAL DEPTH: _____ COAL LICENSE: _____

LAT.: _____ HOLE ANGLE: _____ LOGGED BY: _____ CORE SIZE: _____

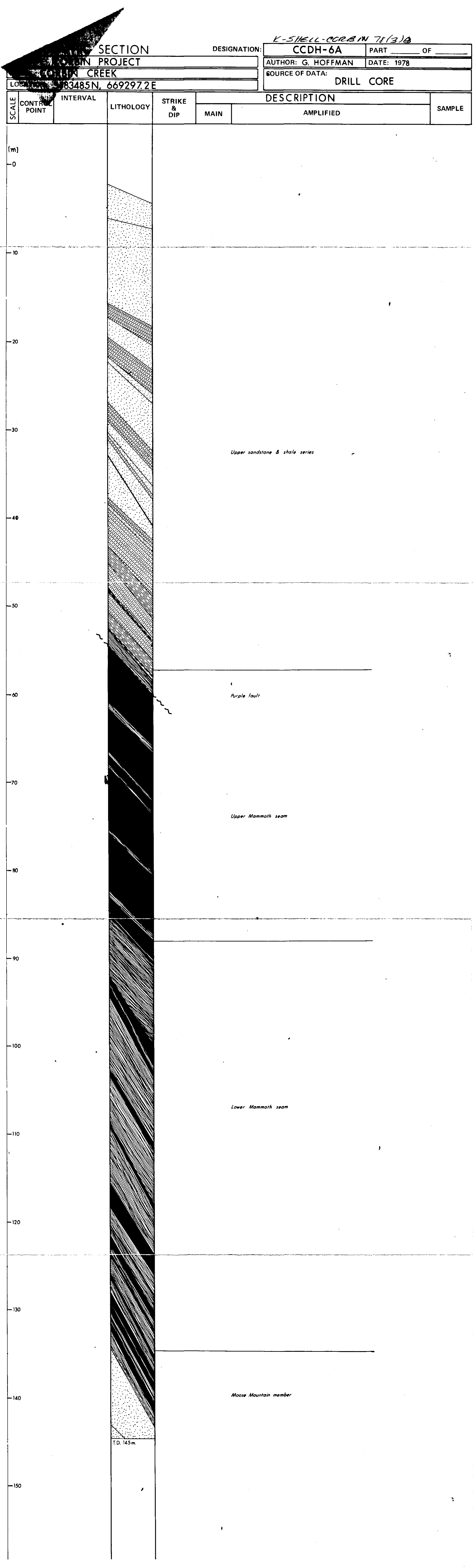
[illegible]



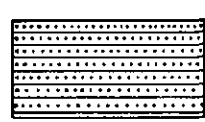
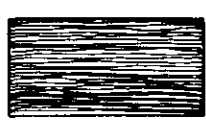
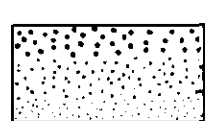


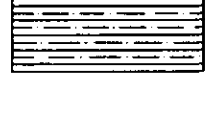



LEGEND

- | | | | |
|---|--------------------------|---|-----------------|
|  | Siltstone |  | Claystone |
|  | Sandstone coarse grained |  | Coaly claystone |
|  | Sandstone medium grained | | |
|  | Sandstone fine grained | | |
|  | Mudstone |  | Coal |
|  Fault | | | |

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LEGEND

- | | | | |
|---|--------------------------|---|-----------------|
|  | Siltstone |  | Claystone |
|  | Sandstone coarse grained |  | Coaly claystone |
|  | Sandstone medium grained | | |
|  | Sandstone fine grained | | |
|  | Mudstone |  | Coal |
|  | | Fault | |

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STRATIGRAPHIC SECTION

DESIGNATION:

K-SHELL-CORBIN 74(3)B.

PROJECT: CORBIN PROJECT

CCDH-19

PART OF

AREA: CORBIN CREEK

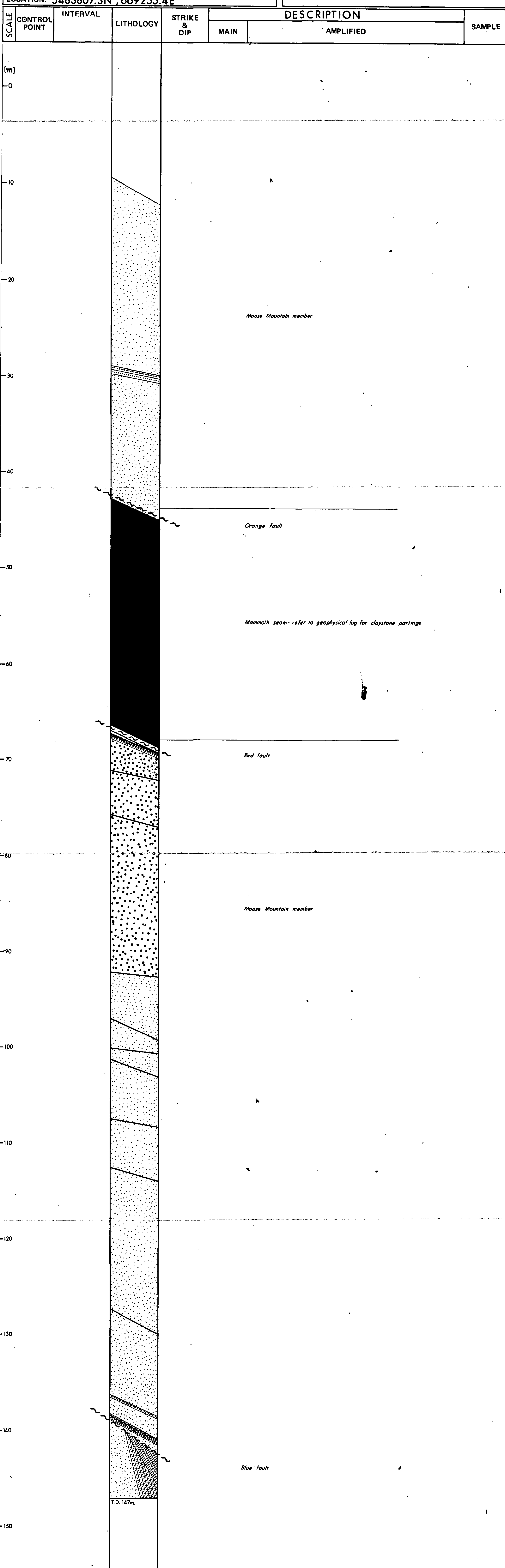
AUTHOR: G. HOFFMAN

DATE: 1978

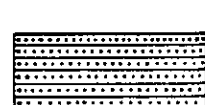
LOCATION: 5483807.3N, 669255.4E

SOURCE OF DATA:

DRILL CORE



LEGEND



Siltstone



Claystone



Sandstone coarse grained



Coaly claystone



Mudstone



Coal

~~~~~ Fault

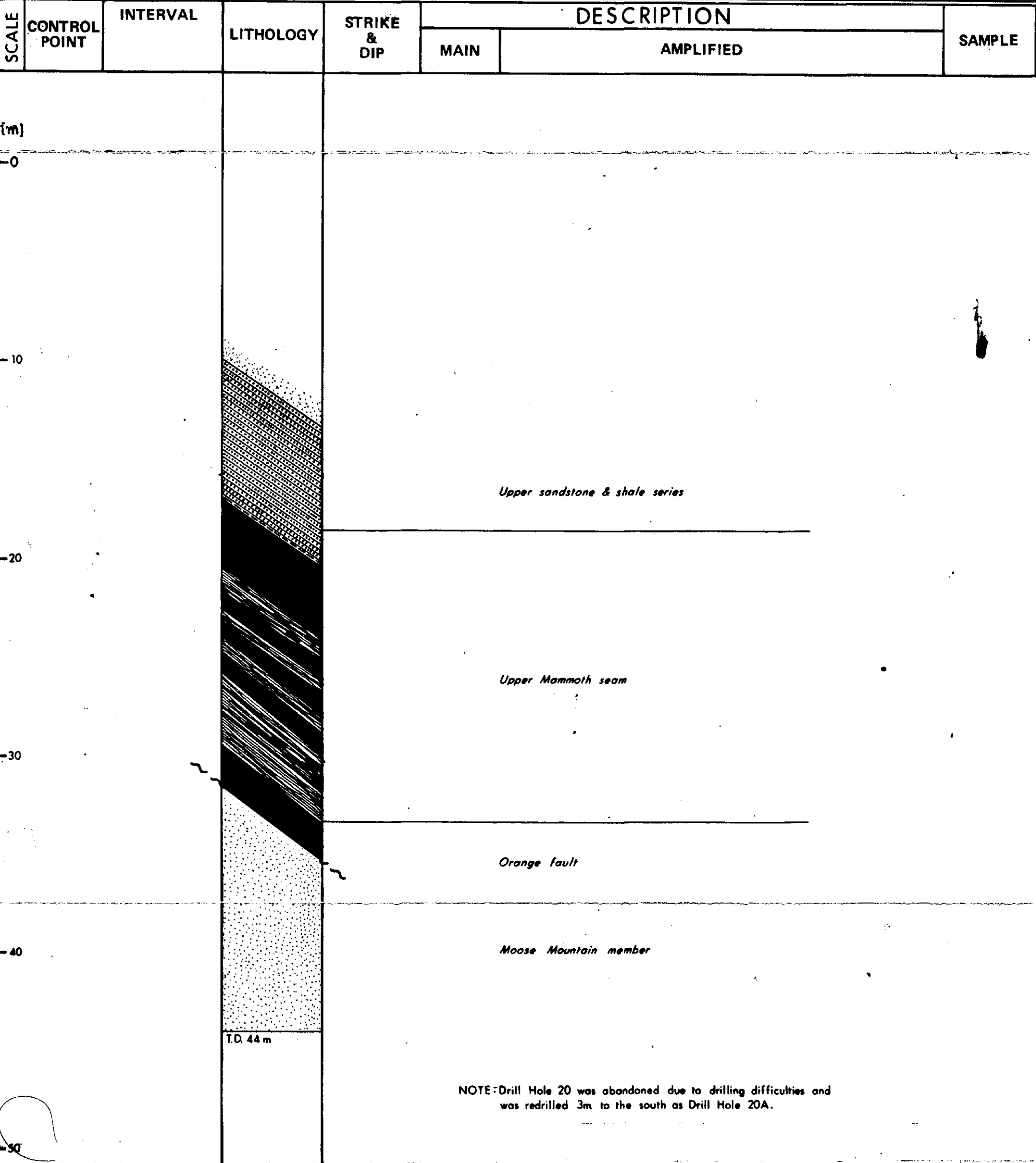


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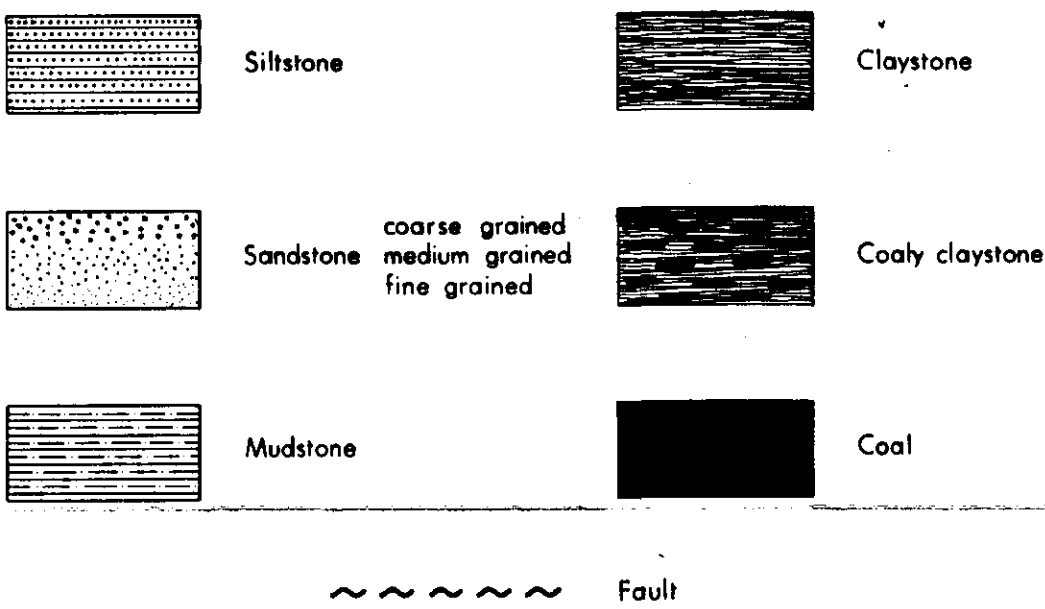
STRATIGRAPHIC SECTION

PROJECT: CORBIN PROJECT  
AREA: CORBIN CREEK  
LOCATION: APPROX. 3m NORTH OF CCDH-20A

DESIGNATION: K-SHELL-CORBIN 78(3)B  
CCDH-20  
PART \_\_\_\_ OF \_\_\_\_  
AUTHOR: G. HOFFMAN  
DATE: 1978  
SOURCE OF DATA: DRILL CORE



LEGEND



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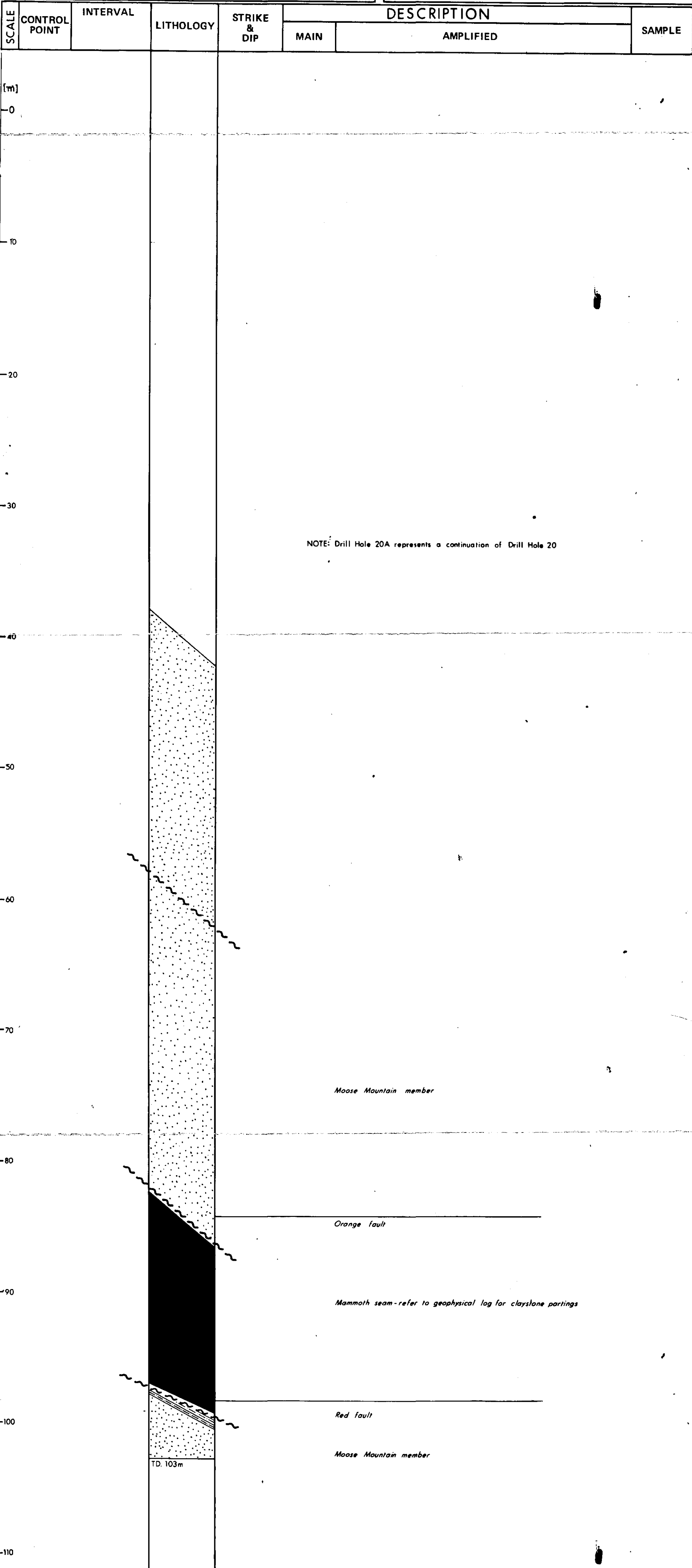
STRATIGRAPHIC SECTION

DESIGNATION:

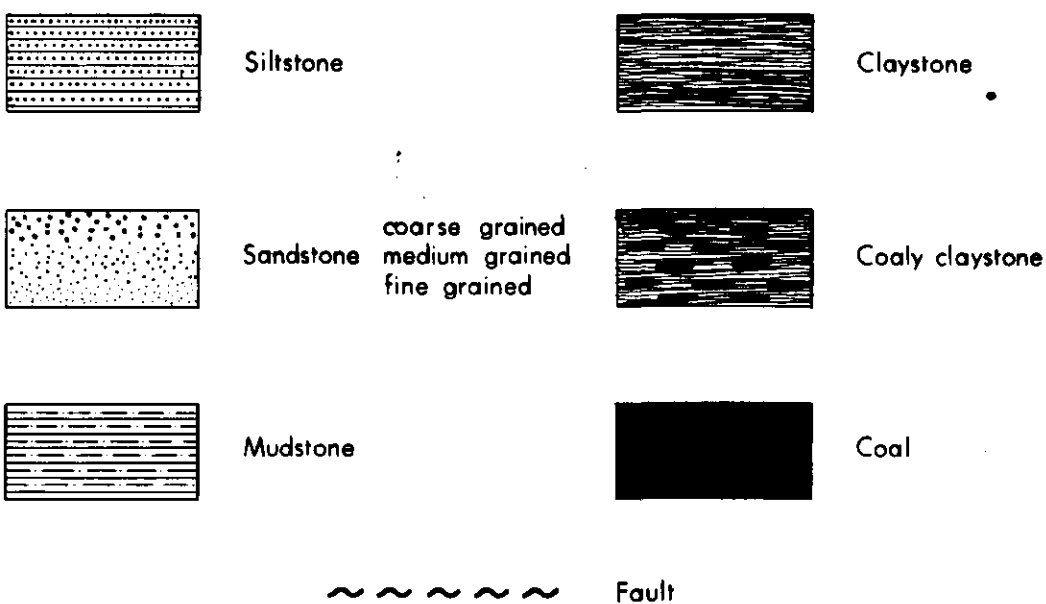
K-SHELL-CORBIN 78(3)B

|                                  |
|----------------------------------|
| PROJECT: CORBIN PROJECT          |
| AREA: CORBIN CREEK               |
| LOCATION: 5483945.5N, 669282.2 E |

|                            |                   |
|----------------------------|-------------------|
| CCDH-20A                   | PART ____ OF ____ |
| AUTHOR: G. HOFFMAN         | DATE: 1978        |
| SOURCE OF DATA: DRILL CORE |                   |



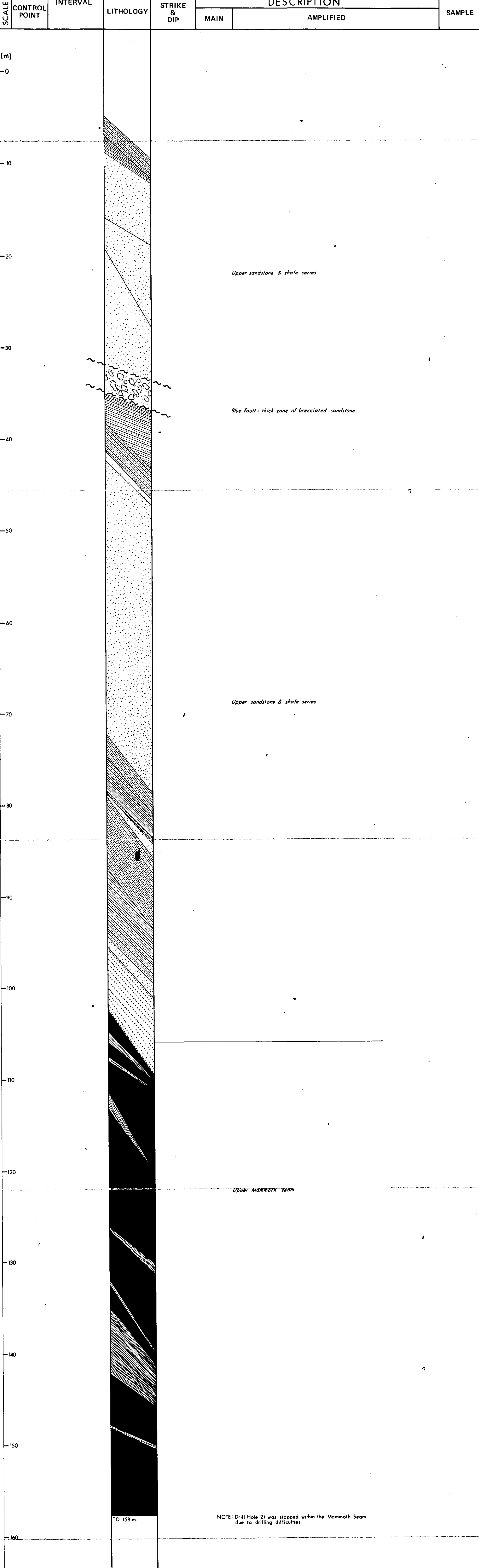
LEGEND



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STRATIGRAPHIC SECTION

|                                    |                            |                     |
|------------------------------------|----------------------------|---------------------|
| PROJECT: CORBIN PROJECT            | DESIGNATION: CCDH-21       | PART _____ OF _____ |
| AREA: COAL MOUNTAIN, B.C.          | AUTHOR: G. HOFFMAN         | DATE: 1978          |
| LOCATION: 5483937.9 N., 669347.3 E | SOURCE OF DATA: DRILL CORE |                     |



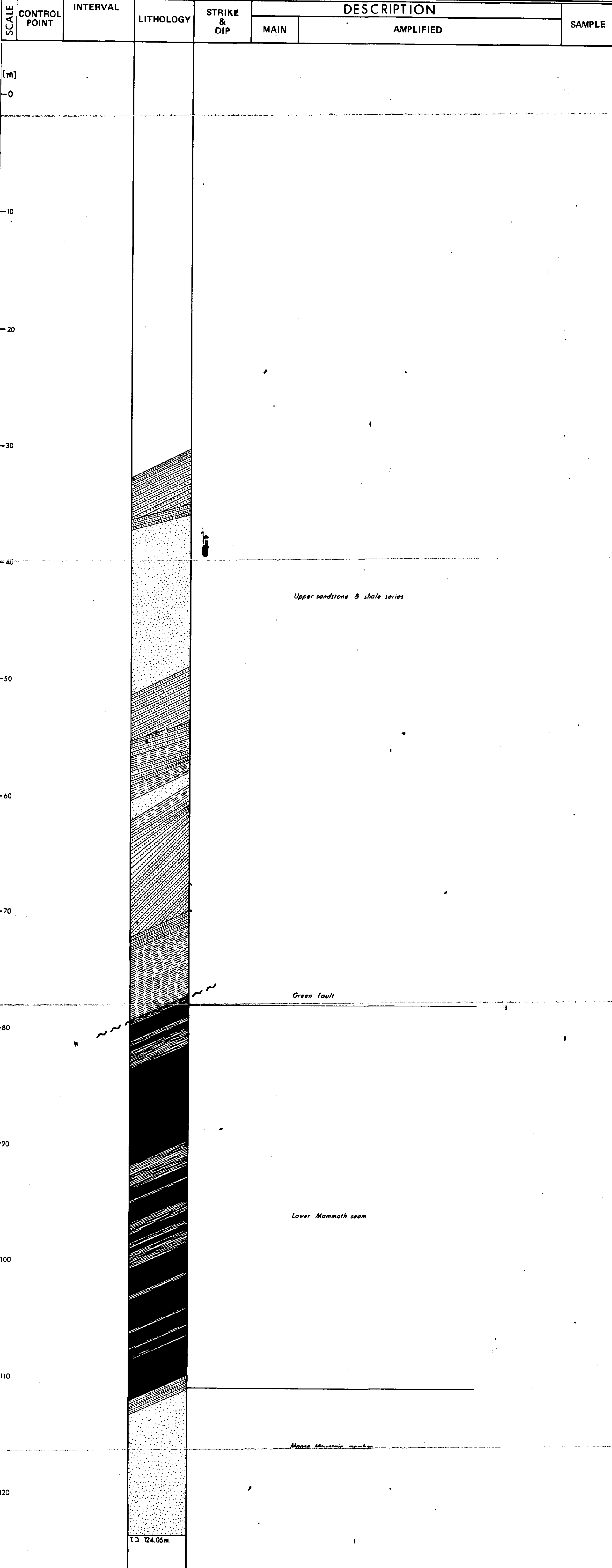
LEGEND

|       |                                                               |       |                 |
|-------|---------------------------------------------------------------|-------|-----------------|
|       | Siltstone                                                     |       | Claystone       |
|       | Sandstone<br>coarse grained<br>medium grained<br>fine grained |       | Coaly claystone |
|       |                                                               |       | Coal            |
| ~~~~~ |                                                               | Fault |                 |

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STRATIGRAPHIC SECTION

|                                 |                            |                     |
|---------------------------------|----------------------------|---------------------|
| PROJECT: CORBIN PROJECT         | DESIGNATION: CCDH-22       | PART _____ OF _____ |
| AREA: CORBIN CREEK              | AUTHOR: G. HOFFMAN         | DATE: 1978          |
| LOCATION: 5483485.4N, 669297.2E | SOURCE OF DATA: DRILL CORE |                     |



LEGEND

- |  |                          |  |                 |
|--|--------------------------|--|-----------------|
|  | Siltstone                |  | Claystone       |
|  | Sandstone coarse grained |  | Coaly claystone |
|  | Sandstone medium grained |  |                 |
|  | Sandstone fine grained   |  |                 |
|  | Mudstone                 |  | Coal            |

~~~~~ Fault

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STRATIGRAPHIC SECTION

DESIGNATION:

K-SHELL - CORBIN 78(3)B.

PROJECT: CORBIN PROJECT

CCDH-23

PART OF

AREA: CORBIN CREEK

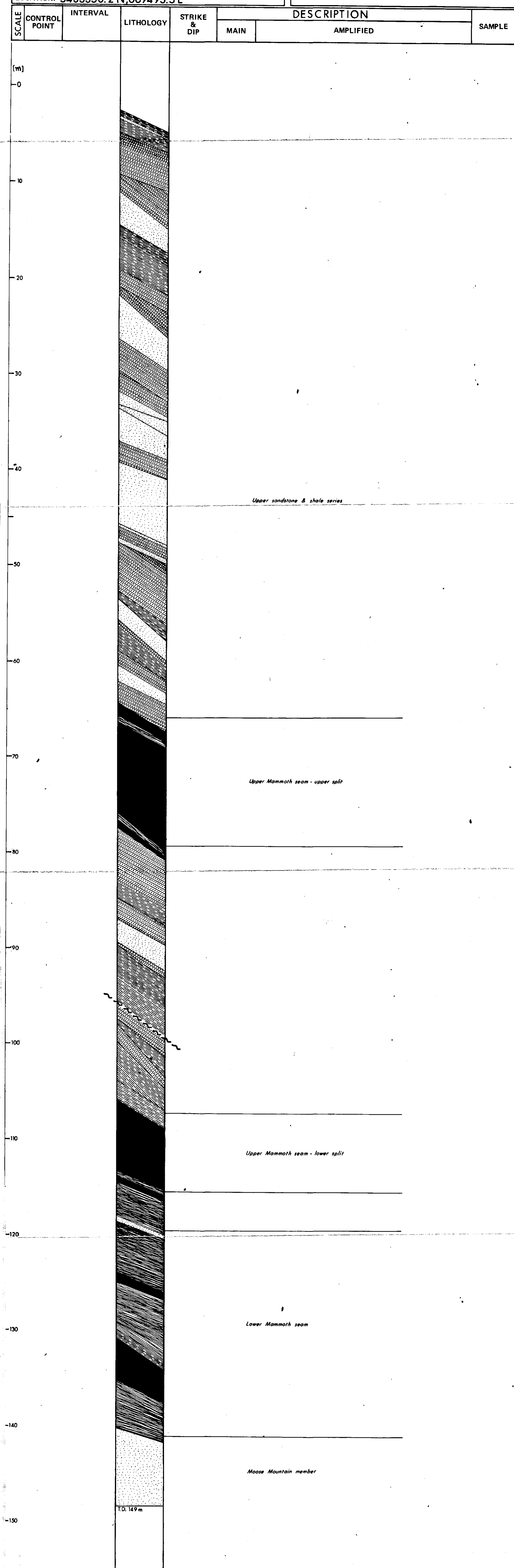
AUTHOR: G. HOFFMAN

DATE: 1978

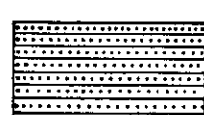
LOCATION: 5483350.2 N, 669493.5 E

SOURCE OF DATA:

DRILL CORE



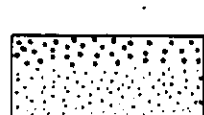
LEGEND



Siltstone



Claystone



Sandstone coarse grained
medium grained
fine grained



Coaly claystone



Mudstone



Coal

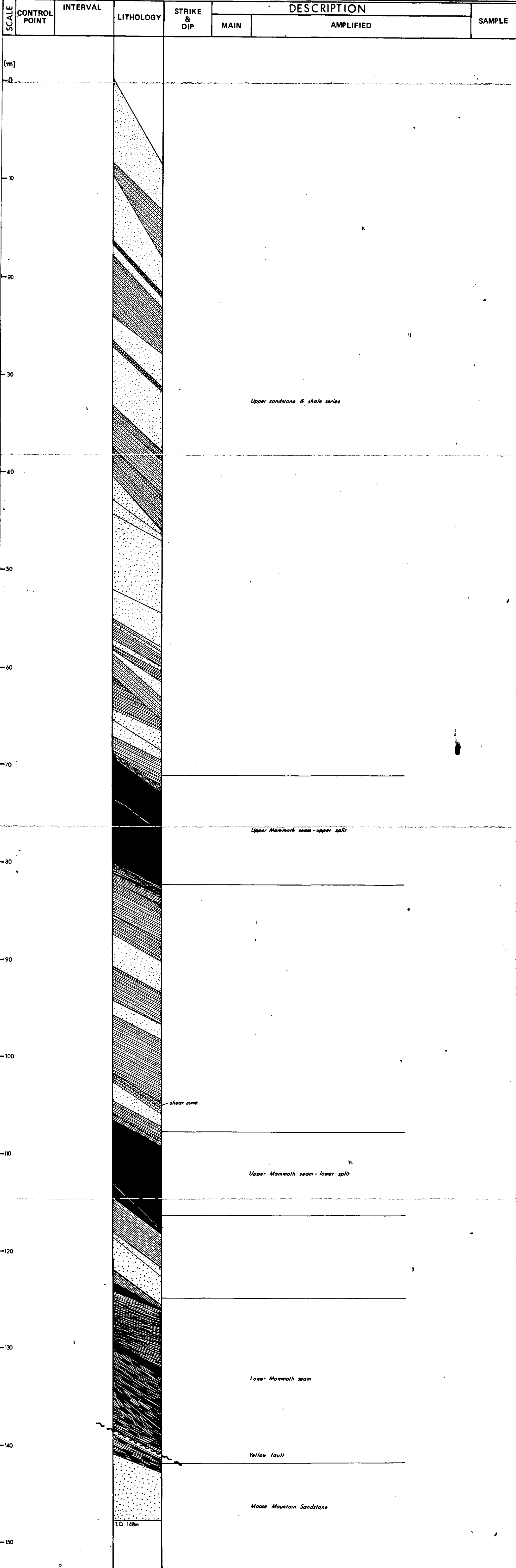
~~~~~ Fault

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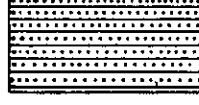

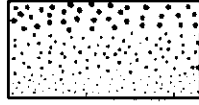


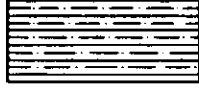



STRATIGRAPHIC SECTION

DESIGNATION: K-SHELL - CORBIN 71(3)B.

|                                 |                            |                     |
|---------------------------------|----------------------------|---------------------|
| PROJECT: CORBIN PROJECT         | CCDH-24                    | PART _____ OF _____ |
| AREA: CORBIN CREEK              | AUTHOR: G. HOFFMAN         | DATE: 1978          |
| LOCATION: 5483226.1N, 669498.4E | SOURCE OF DATA: DRILL CORE |                     |



LEGEND

- |                                                                                           |                          |                                                                                     |                 |
|-------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------|-----------------|
|        | Siltstone                |  | Claystone       |
|        | Sandstone coarse grained |  | Coaly claystone |
|        | Sandstone medium grained |                                                                                     |                 |
|        | Sandstone fine grained   |                                                                                     |                 |
|        | Mudstone                 |  | Coal            |
|  Fault |                          |                                                                                     |                 |

K-SHELL CORBIN 78(6)B



GEOLOGICAL BRANCH  
ASSESSMENT REPORT

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pt. 3 of 6

OPEN FILE

**OPEN FILE**



APPENDIX IV  
RESERVE CALCULATIONS

### METHOD OF RESERVE CALCULATIONS

1. A set of cross-sections with a spacing of 125 feet (38.1 m) was prepared from the structure contour maps (Appendix I)
2. The areas of the Upper and Lower Mammoth Seam on each cross-section were measured by planimeter and converted to square metres.
3. The volumes of coal were calculated by multiplying the areas by the cross-section spacing in metres.
4. The weight of coal in metric tons was calculated by multiplying the volumes by estimated specific gravities of 1.48 for the Upper Mammoth Seam and 1.65 for the Lower Mammoth Seam.

The above calculation of raw coal in place includes all rock bands. The specific gravities used are estimates.

SUMMARY OF RESERVES  
BY CROSS-SECTION

| SECTION | COAL<br>ZONE | CUBIC METRES<br>WEST FLANK | CUBIC METRES<br>EAST SYNCLINE | TOTAL<br>CUBIC<br>METRES | SPECIFIC<br>GRAVITY | TOTAL<br>METRIC TONNES |
|---------|--------------|----------------------------|-------------------------------|--------------------------|---------------------|------------------------|
| 9375N   | Upper        | 196,051.2                  | 78,386.9                      | 274,438.1                | 1.48                | 406,168.1              |
|         | Lower        | 656,817.3                  | 308,037.0                     | 964,854.3                | 1.65                | 1,592,009.5            |
| 9250N   | Upper        | 184,903.1                  | 95,634.8                      | 280,537.9                | 1.48                | 415,196.1              |
|         | Lower        | 685,247.6                  | 154,910.8                     | 840,158.4                | 1.65                | 1,386,261.4            |
| 9125N   | Upper        | 193,967.1                  | 59,180.7                      | 253,147.8                | 1.48                | 374,658.74             |
|         | Lower        | 719,320.4                  | 218,034.87                    | 937,355.2                | 1.65                | 1,546,636.1            |
| 9000N   | Upper        | 233,602.5                  | 84,288.6                      | 317,891.1                | 1.48                | 470,478.83             |
|         | Lower        | 638,788.4                  | 191,067.7                     | 829,856.1                | 1.65                | 1,369,262.57           |
| 8875N   | Upper        | 253,277.4                  | 78,352.6                      | 331,630.0                | 1.48                | 490,812.4              |
|         | Lower        | 609,398.1                  | 214,560.2                     | 823,958.3                | 1.65                | 1,359,531.2            |
| 8750N   | Upper        | 201,373.7                  | 133,201.4                     | 334,575.1                | 1.48                | 495,171.15             |
|         | Lower        | 658,916.6                  | 145,801.1                     | 804,717.7                | 1.65                | 1,327,784.21           |
| 8625N   | Upper        | 179,835.8                  | 77,731.6                      | 257,567.4                | 1.48                | 381,199.75             |
|         | Lower        | 738,477.1                  | 190,747.6                     | 929,224.7                | 1.65                | 1,533,220.76           |
| 8500N   | Upper        | 250,743.7                  | 82,528.4                      | 333,272.1                | 1.48                | 493,242.71             |
|         | Lower        | 723,431.4                  | 177,187.9                     | 900,619.3                | 1.65                | 1,486,021.85           |
| 8375N   | Upper        | 364,957.1                  | 44,458.9                      | 409,434.0                | 1.48                | 605,962.32             |
|         | Lower        | 612,990.9                  | 188,332.1                     | 801,323.0                | 1.65                | 1,322,182.95           |
| 8250N   | Upper        | 433,273.2                  | 56,033.7                      | 489,306.9                | 1.48                | 724,174.21             |
|         | Lower        | 603,477.3                  | 123,135.4                     | 726,612.7                | 1.65                | 1,198,910.96           |
| 8125N   | Upper        | 507,172.0                  | 15,167.6                      | 522,339.6                | 1.48                | 861,860.34             |
|         | Lower        | 588,736.4                  | 56,929.0                      | 645,665.4                | 1.65                | 1,065,347.91           |
| 8000N   | Upper        | 497,429.8                  | 0                             | 497,429.8                | 1.48                | 736,196.10             |
|         | Lower        | 645,421.6                  | 3,505.2                       | 648,926.8                | 1.65                | 1,070,729.2            |
| 7875N   | Upper        | 281,029.4                  |                               |                          | 1.48                | 415,923.5              |
|         | Lower        | 753,263.7                  |                               |                          | 1.65                | 1,242,885.11           |
| 7750N   | Upper        | 360,719.4                  |                               |                          | 1.48                | 533,864.71             |
|         | Lower        | 599,027.2                  |                               |                          | 1.65                | 988,394.88             |
| 7625N   | Upper        | 247,211.8                  |                               |                          | 1.48                | 365,873.46             |
|         | Lower        | 513,843.3                  |                               |                          | 1.65                | 847,841.45             |
| 7500N   | Upper        | 157,383.5                  |                               |                          | 1.48                | 232,927.58             |
|         | Lower        | 407,944.3                  |                               |                          | 1.65                | 673,108.10             |
| 7375N   | Upper        | 115,092.5                  |                               |                          | 1.48                | 170,336.9              |
|         | Lower        | 236,528.6                  |                               |                          | 1.65                | 390,272.2              |

3)

| SECTION | COAL<br>ZONE | CUBIC METRES<br>WEST FLANK | CUBIC METRES<br>EAST SYNCLINE | TOTAL<br>CUBIC<br>METRES | SPECIFIC<br>GRAVITY | TOTAL<br>METRIC TONNES |
|---------|--------------|----------------------------|-------------------------------|--------------------------|---------------------|------------------------|
| 7250N   | Upper        | 98,320.9                   |                               |                          | 1.48                | 145,514.93             |
|         | Lower        | 147,805.1                  |                               |                          | 1.65                | 243,878.42             |
| 7125N   | Upper        | 125,615.7                  |                               |                          | 1.48                | 185,911.24             |
|         | Lower        | 152,110.4                  |                               |                          | 1.65                | 250,982.16             |
| 7000N   | Upper        | 114,620.0                  |                               |                          | 1.48                | 169,637.6              |
|         | Lower        | 140,364.2                  |                               |                          | 1.65                | 231,600.93             |
| 6875N   | Upper        | 99,006.7                   |                               |                          | 1.48                | 146,529.92             |
|         | Lower        | 110,291.9                  |                               |                          | 1.65                | 181,981.64             |
| 6750N   | Upper        | 140,474.7                  |                               |                          | 1.48                | 207,902.56             |
|         | Lower        | 162,576.5                  |                               |                          | 1.65                | 268,251.23             |
| 6625N   | Upper        | 126,297.7                  |                               |                          | 1.48                | 186,920.60             |
|         | Lower        | 118,334.8                  |                               |                          | 1.65                | 195,252.42             |
| 6500N   | Upper        | 112,867.4                  |                               |                          | 1.48                | 167,043.75             |
|         | Lower        | 99,212.4                   |                               |                          | 1.65                | 163,700.5              |
| 6375N   | Upper        | 70,812.7                   |                               |                          | 1.48                | 104,802.80             |
|         | Lower        | 60,220.9                   |                               |                          | 1.65                | 99,364.49              |
| 6250N   | Upper        | 0                          |                               |                          | 1.48                | 0                      |
|         | Lower        | 173,995.1                  |                               |                          | 1.65                | 287,091.92             |
| 6125N   | Upper        | 0                          |                               |                          | 1.48                | 0                      |
|         | Lower        | 151,679.9                  |                               |                          | 1.65                | 250,271.84             |
| 6000N   | Upper        | 0                          |                               |                          | 1.48                | 0                      |
|         | Lower        | 138,756.4                  |                               |                          | 1.65                | 228,948.06             |
| 5875N   | Upper        | 0                          |                               |                          | 1.48                | 0                      |
|         | Lower        | 141,145.3                  |                               |                          | 1.65                | 232,889.75             |
| 5750N   | Upper        | 0                          |                               |                          | 1.48                | 0                      |
|         | Lower        | 64,465.2                   |                               |                          | 1.65                | 106,367.58             |

SUMMARY OF PLANIMETER  
AREAS BY CROSS-SECTION

Cross-Section  
9375 N

| STRUCTURAL BLOCK      | <u>PLANIMETER AREA</u> |                       |
|-----------------------|------------------------|-----------------------|
|                       | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Above Pink Fault      | 1519.2                 | 153.0                 |
| Orange to Red Fault   | 0                      | 2348.1                |
| Red to Blue Fault     | 559.2                  | 1812.0                |
| Blue to Purple Fault  | 2153.9                 | 2338.3                |
| Purple to Green Fault | 913.4                  | 2686.4                |
| Below Green Fault     | 0                      | 7901.5                |
|                       | <hr/>                  | <hr/>                 |
| Total                 | 5145.7                 | 17239.3               |
| East Syncline         | 2057.4                 | 5953.1                |

SUMMARY OF PLANIMETER  
AREAS BY CROSS-SECTION

Cross-Section  
9250 N

| STRUCTURAL BLOCK      | <u>PLANIMETER AREA</u> |                       |
|-----------------------|------------------------|-----------------------|
|                       | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Above Pink Fault      | 889.0                  | 231.7                 |
| Orange to Red Fault   | 0                      | 2837.6                |
| Red to Blue Fault     | 588.0                  | 1739.4                |
| Blue to Purple Fault  | 2365.1                 | 1957.9                |
| Purple to Green Fault | 1011.0                 | 3261.8                |
| Below Green Fault     | 0                      | 7957.1                |
|                       | <hr/>                  | <hr/>                 |
| Total                 | 4853.1                 | 17985.5               |
|                       |                        |                       |
| East Syncline         | 2510.1                 | 4065.9                |

SUMMARY OF PLANIMETER  
AREAS BY CROSS-SECTION

Cross-Section  
9125 N

| STRUCTURAL BLOCK      | <u>PLANIMETER AREA</u> |                       |
|-----------------------|------------------------|-----------------------|
|                       | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Above Pink Fault      | 0                      | 319.8                 |
| Orange to Red Fault   | 183.1                  | 2865.1                |
| Red to Blue Fault     | 742.0                  | 1850.9                |
| Blue to Purple Fault  | 3002.7                 | 1004.3                |
| Purple to Green Fault | 1163.2                 | 3406.5                |
| Below Green Fault     | 0                      | 9433.2                |
|                       | <hr/>                  | <hr/>                 |
| Total                 | 5091.0                 | 18879.8               |
| East Syncline         | 1553.3                 | 5722.7                |

SUMMARY OF PLANIMETER  
AREAS BY CROSS-SECTION

Cross-Section  
9000 N

| STRUCTURAL BLOCK      | <u>PLANIMETER AREA</u> |                       |
|-----------------------|------------------------|-----------------------|
|                       | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Orange to Red Fault   | 1437.1                 | 2064.1                |
| Red to Blue Fault     | 933.7                  | 2057.8                |
| Blue to Purple Fault  | 2577.6                 | 0                     |
| Purple to Green Fault | 1182.9                 | 3446.0                |
| Below Green Fault     | 0                      | 9198.2                |
|                       | <hr/>                  | <hr/>                 |
| Total                 | 6131.3                 | 16765.9               |
|                       |                        |                       |
| East Syncline         | 2212.3                 | 5014.9                |



SUMMARY OF PLANIMETER  
AREAS BY CROSS-SECTION

Cross-Section  
8875 N

| STRUCTURAL BLOCK           | <u>PLANIMETER AREA</u> |                       |
|----------------------------|------------------------|-----------------------|
|                            | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Orange to Red Fault        | 1051.7                 | 2873.9                |
| Red to Blue Fault          | 905.8                  | 2894.9                |
| Blue to Purple Fault       | 2871.8                 | 0                     |
| Purple to (lt) Green Fault | 1908.4                 | 4313.1                |
| Below Green Fault          | 0                      | 5912.8                |
|                            | <hr/>                  | <hr/>                 |
| Total                      | 6737.7                 | 15994.7               |
|                            |                        |                       |
| East Syncline              | 2056.5                 | 5631.5                |

8750 N

| STRUCUTRAL BLOCK      | <u>PLANIMETER AREA</u> |                       |
|-----------------------|------------------------|-----------------------|
|                       | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Orange to Red Fault   | 783.3                  | 3330.8                |
| Red to Blue Fault     | 758.4                  | 2137.4                |
| Blue to Purple Fault  | 2003.6                 | 2420.2                |
| Purple to Green Fault | 1740.1                 | 3179.5                |
| Below Green Fault     | 0                      | 6226.5                |
|                       | <hr/>                  | <hr/>                 |
| Total                 | 5285.4                 | 17294.4               |
|                       |                        |                       |
| East Syncline         | 3496.1                 | 3826.8                |

SUMMARY OF PLANIMETER  
AREAS OF CROSS-SECTION

Cross-Section  
8625 N

| STRUCTURAL BLOCK      | <u>PLANIMETER AREA</u> |                       |
|-----------------------|------------------------|-----------------------|
|                       | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Orange to Red Fault   | 159.7                  | 3997.1                |
| Red to Blue Fault     | 423.2                  | 1785.0                |
| Blue to Purple Fault  | 2197.9                 | 3416.0                |
| Purple to Green Fault | 1939.3                 | 2758.5                |
| Below Green Fault     | 0                      | 7426.0                |
|                       | <hr/>                  | <hr/>                 |
| Total                 | 4730.1                 | 19382.6               |
| East Syncline         | 2040.2                 | 5006.5                |

8500 N

| STRUCTURAL BLOCK      | <u>PLANIMETER AREA</u> |                       |
|-----------------------|------------------------|-----------------------|
|                       | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Orange to Red Fault   | 521.4                  | 2558.0                |
| Red to Blue Fault     | 0                      | 1318.3                |
| Blue to Purple Fault  | 3074.0                 | 2581.2                |
| Purple to Green Fault | 6505.4                 | 5298.5                |
| Below Green Fault     | 0                      | 7619.6                |
|                       | <hr/>                  | <hr/>                 |
| Total                 | 10100.8                | 19375.6               |
| East Syncline         | 2166.1                 | 4650.6                |

SUMMARY OF PLANIMETER  
AREAS BY CROSS-SECTION

Cross-Section  
8375 N

| STRUCTURAL BLOCK            | <u>PLANIMETER AREA</u> |                       |
|-----------------------------|------------------------|-----------------------|
|                             | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Orange to Red Fault         | 0                      | 224.1                 |
| Red to Blue Fault           | 0                      | 1318.3                |
| Blue to Purple Fault        | 3074.0                 | 2581.2                |
| Purple to Light Green Fault | 6505.4                 | 5298.5                |
| Lt. Green to Green Fault    | 0                      | 1974.6                |
| Below Green Fault           | 0                      | 4692.3                |
|                             | <hr/>                  | <hr/>                 |
| Total                       | 9579.4                 | 16089.0               |
| East Syncline               | 1166.9                 | 4943.1                |

8250 N

| STRUCTURAL BLOCK          | <u>PLANIMETER AREA</u> |                       |
|---------------------------|------------------------|-----------------------|
|                           | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Red to Blue Fault         | 444.6                  | 0                     |
| Blue to Purple Fault      | 2909.8                 | 2273.5                |
| Purple to Lt. Green Fault | 8462.2                 | 5626.1                |
| Lt. Green to Green Fault  | 0                      | 1452.0                |
| Below Green Fault         | 0                      | 6043.1                |
|                           | <hr/>                  | <hr/>                 |
| Total                     | 11816.6                | 15394.7               |
| East Syncline             | 1470.7                 | 3231.9                |

SUMMARY OF PLANIMETER  
AREAS BY CROSS-SECTION

Cross-Section  
8125 N

| STRUCTURAL BLOCK          | <u>PLANIMETER AREA</u> |                       |
|---------------------------|------------------------|-----------------------|
|                           | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Blue to Purple Fault      | 3703.0                 | 995.0                 |
| Purple to Lt. Green Fault | 9608.6                 | 6692.2                |
| Lt. Green to Green Fault  | 0                      | 2047.7                |
| Below Green Fault         | 0                      | 5717.5                |
|                           | <hr/>                  | <hr/>                 |
| Total                     | 13311.6                | 15452.4               |
| East Syncline             | 398.1                  | 1494.2                |

8000 N

| STRUCTURAL BLOCK          | <u>PLANIMETER AREA</u> |                       |
|---------------------------|------------------------|-----------------------|
|                           | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Blue to Purple Fault      | 2369.7                 | 699.7                 |
| Purple to Lt. Green Fault | 10686.2                | 8529.3                |
| Lt. Green to Green Fault  | 0                      | 4170.5                |
| Below Green Fault         | 0                      | 3540.7                |
|                           | <hr/>                  | <hr/>                 |
| Total                     | 13055.9                | 16940.2               |
| East Syncline             | 0                      | 92.0                  |

SUMMARY OF PLANIMETER  
AREAS BY CROSS-SECTION

Cross-Section  
7875 N

| STRUCTURAL BLOCK          | <u>PLANIMETER AREA</u> |                       |
|---------------------------|------------------------|-----------------------|
|                           | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Blue to Purple Fault      | 1389.9                 | 79.5                  |
| Purple to Lt. Green Fault | 5159.6                 | 16111.0               |
| Lt. Green to Green Fault  | 826.6                  | 928.8                 |
| Below Green Fault         | 0                      | 2651.4                |
|                           | <hr/>                  | <hr/>                 |
| Total                     | 7376.1                 | 19770.7               |

7750 N

| STRUCTURAL BLOCK          | <u>PLANIMETER AREA</u> |                       |
|---------------------------|------------------------|-----------------------|
|                           | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Blue to Purple Fault      | 479.2                  | 0                     |
| Purple to Lt. Green Fault | 7547.5                 | 12727.4               |
| Lt. Green to Green Fault  | 1441.0                 | 1496.8                |
| Below Green Fault         | 0                      | 1498.3                |
|                           | <hr/>                  | <hr/>                 |
| Total                     | 9467.7                 | 15722.5               |

7625 N

| STRUCTURAL BLOCK          | <u>PLANIMETER AREA</u> |                       |
|---------------------------|------------------------|-----------------------|
|                           | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Blue to Purple Fault      | 199.0                  | 0                     |
| Purple to Lt. Green Fault | 4264.4                 | 11107.7               |
| Lt. Green to Green Fault  | 2025.1                 | 1974.5                |
| Below Green Fault         | 0                      | 404.5                 |
|                           | <hr/>                  | <hr/>                 |
| Total                     | 6488.5                 | 13486.7               |

SUMMARY OF PLANIMETER  
AREAS BY CROSS-SECTION

Cross-Section  
7500 N

| STRUCTURAL BLOCK          | <u>PLANIMETER AREA</u> |                       |
|---------------------------|------------------------|-----------------------|
|                           | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Purple to Lt. Green Fault | 1370.1                 | 8275.5                |
| Lt. Green to Green Fault  | 2760.7                 | 2220.7                |
| Below Green Fault         | 0                      | 211.0                 |
|                           | <hr/>                  | <hr/>                 |
| Total                     | 4130.8                 | 10707.2               |

7375 N

| STRUCTURAL BLOCK          | <u>PLANIMETER AREA</u> |                       |
|---------------------------|------------------------|-----------------------|
|                           | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Purple to Lt. Green Fault | 0                      | 3496.8                |
| Lt. Green to Green Fault  | 3020.8                 | 2646.3                |
| Below Green Fault         | 0                      | 65.0                  |
|                           | <hr/>                  | <hr/>                 |
| Total                     | 3020.8                 | 6208.1                |

7250 N

| STRUCTURAL BLOCK          | <u>PLANIMETER AREA</u> |                       |
|---------------------------|------------------------|-----------------------|
|                           | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Purple to Lt. Green Fault | 0                      | 278.0                 |
| Lt. Green to Green Fault  | 2580.6                 | 3517.4                |
| Below Green Fault         | 0                      | 84.0                  |
|                           | <hr/>                  | <hr/>                 |
| Total                     | 2580.6                 | 3879.4                |

SUMMARY OF PLANIMETER  
AREAS BY CROSS-SECTION

Cross-Section  
7125 N

| STRUCTURAL BLOCK         | <u>PLANIMETER AREA</u> |                       |
|--------------------------|------------------------|-----------------------|
|                          | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Lt. Green to Green Fault | 3297.0                 | 3982.4                |
| Below Green Fault        | 0                      | 10.0                  |
|                          | <hr/>                  | <hr/>                 |
| Total                    | 3297.0                 | 3992.4                |

7000 N

| STRUCTURAL BLOCK         | <u>PLANIMETER AREA</u> |                       |
|--------------------------|------------------------|-----------------------|
|                          | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Lt. Green to Green Fault | 3008.4                 | 3573.3                |
| Below Green Fault        | 0                      | 110.8                 |
|                          | <hr/>                  | <hr/>                 |
| Total                    | 3008.4                 | 3684.1                |

6875 N

| STRUCTURAL BLOCK   | <u>PLANIMETER AREA</u> |                       |
|--------------------|------------------------|-----------------------|
|                    | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Above Yellow Fault | 2598.6                 | 2868.8                |
| Below Yellow Fault | 0                      | 26.0                  |
|                    | <hr/>                  | <hr/>                 |
| Total              | 2598.6                 | 2894.8                |

6750 N

| STRUCTURAL BLOCK   | <u>PLANIMETER AREA</u> |                       |
|--------------------|------------------------|-----------------------|
|                    | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Above Yellow Fault | 3687.0                 | 4213.1                |
| Below Yellow Fault | 0                      | 54.0                  |
|                    | <hr/>                  | <hr/>                 |
| Total              | 3687.0                 | 4267.1                |

SUMMARY OF PLANIMETER  
AREAS BY CROSS-SECTION

Cross-Section  
6625 N

| STRUCTURAL BLOCK   | <u>PLANIMETER AREA</u> |                       |
|--------------------|------------------------|-----------------------|
|                    | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Above Yellow Fault | 3314.9                 | 3044.9                |
| Below Yellow Fault | 0                      | 61.0                  |
|                    | <hr/>                  | <hr/>                 |
| Total              | 3314.9                 | 3105.9                |

6500 N

| STRUCTURAL BLOCK   | <u>PLANIMETER AREA</u> |                       |
|--------------------|------------------------|-----------------------|
|                    | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Above Yellow Fault | 2962.4                 | 2548.0                |
| Below Yellow Fault | 0                      | 56.0                  |
|                    | <hr/>                  | <hr/>                 |
| Total              | 2962.4                 | 2604.0                |

6375 N

| STRUCTURAL BLOCK   | <u>PLANIMETER AREA</u> |                       |
|--------------------|------------------------|-----------------------|
|                    | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Above Yellow Fault | 1858.6                 | 1241.1                |
| Below Yellow Fault | 0                      | 339.5                 |
|                    | <hr/>                  | <hr/>                 |
| Total              | 1858.6                 | 1580.6                |

6250 N

| STRUCTURAL BLOCK   | <u>PLANIMETER AREA</u> |                       |
|--------------------|------------------------|-----------------------|
|                    | UPPER MAMMOTH<br>SEAM  | LOWER MAMMOTH<br>SEAM |
| Above Yellow Fault | 0                      | 636.9                 |
| Below Yellow Fault | 0                      | 3929.9                |
|                    | <hr/>                  | <hr/>                 |
| Total              | 0                      | 4566.8                |



SUMMARY OF PLANIMETER  
AREAS BY CROSS-SECTION

Cross-Section  
6125 N

PLANIMETER AREA

| STRUCTURAL BLOCK | UPPER MAMMOTH<br>SEAM | LOWER MAMMOTH<br>SEAM |
|------------------|-----------------------|-----------------------|
|------------------|-----------------------|-----------------------|

|                    |   |        |
|--------------------|---|--------|
| Below Yellow Fault | 0 | 3981.1 |
|--------------------|---|--------|

~~5~~  
5000 N

|                    |   |        |
|--------------------|---|--------|
| Below Yellow Fault | 0 | 3641.9 |
|--------------------|---|--------|

5875 N

|                    |   |        |
|--------------------|---|--------|
| Below Yellow Fault | 0 | 3704.6 |
|--------------------|---|--------|

5750 N

|                    |   |        |
|--------------------|---|--------|
| Below Yellow Fault | 0 | 1692.0 |
|--------------------|---|--------|