JL Shell-Corbin 80(3)A

82G17

Written and Stratigraphic Logs

R.C. Gilmour
C. Sherman

CL #414

Book 1

389

Part 1 of 4

OPEN FILE

GEOLOGICAL BRANCH
ASSESSMENT REPORT

00 389

APPENDIX D

UTAH COAL MOUNTAIN 1980 DRILLHOLE SUMMARY

CM-80-25

DATE:	80-07-23 to 80-07-26
LOCATION:	South Syncline
RIG TYPE:	Longyear 44D
EASTING:	669512.93
NORTHING:	5483169.59
ELEV. (m):	2060.71
TOTAL DEPTH (m):	121
ANGLE:	65°
AZIMUTH:	082°
REMARKS:	

COAL INTERSECTIONS

THICKNESS (m):	DEPTH (m):
2.6	49.8 - 52.4
1.1	52.6 - 53.7
3.35	75.85- 79.2
1.95	79.65- 81.6
0.45	91.8 - 92.25
2.05	94.75- 96.8
0.6	98.2 - 98.8
0.85	99.2 -100.7
4.35	101.0 -104.9

CM-80-26

DATE:	80-07-27 to 80-08-01
LOCATION:	South Syncline
RIG TYPE:	Longyear 44D
EASTING:	669508.69
NORTHING:	5483256.6
ELEV. (m):	2069.32
TOTAL DEPTH (m):	210
ANGLE:	Vertical
AZIMUTH:	-
REMARKS:	

COAL INTERSECTIONS

THICKNESS (m):	DEPTH (m):
0.5	18.2 - 18.7
0.3	21.7 - 22.0
0.5	24.35- 24.85
2.75	89.9 - 92.65
0.6	93.2 - 93.8
1.95	94.75- 96.7
2.3	97.1 - 99.4
16.8	99.6 -116.4
0.25	117.25-117.50
8.6	158.8 -167.4
1.05	168.75-169.8
1.5	174.0 -175.5
0.5	176.5 -177.0
0.4	181.3 -181.7
0.55	184.7 -185.25
1.35	186.35-187.7
3.5	189.5 -193.0
0.5	193.5 -194.0
1.6	195.2 -196.8
2.7	197.3 -200.0
1.2	200.6 201.8

CM-80-27

DATE:	80-08-02 to 80-08-10
LOCATION:	South Syncline
RIG TYPE:	Longyear 44D
EASTING:	669488.82
NORTHING:	5483397.33
ELEV. (m):	2052.0
TOTAL DEPTH (m):	216
ANGLE:	Vertical
AZIMUTH:	
REMARKS:	

COAL INTERSECTIONS

THICKNESS (m):	DEPTH (m):
0.5	17.8 - 18.3
1.7	59.4 - 61.1
1.8	61.7 - 63.5
19.55	63.8 - 83.35
1.65	84.25- 85.9
0.3	86.6 - 86.9
9.4	108.1 -117.5
0.8	118.4 -119.2
7.15	158.6 -165.75
7.2	166.5 -173.7
0.5	175.0 -175.5
0.45	175.8 -176.25
0.8	187.4 -188.2
4.4	193.3 -197.7
3.0	201.7 -204.7
2.05	205.5 -207.55
0.75	213.25-214.0

CM-80-27A

DATE:	80-08-10 to 80-08-13
LOCATION:	South Syncline
RIG TYPE:	Longyear 44D
EASTING:	669490.04
NORTHING:	5483397.24
ELEV. (m)	2052.0
TOTAL DEPTH (m):	117
ANGLE:	58°
AZIMUTH:	088°
REMARKS:	

COAL INTERSECTIONS

THICKNESS (m)	DEPTH (m)
0.3	12.4 - 12.7
0.4	33.1 - 33.5
0.3	43.1 - 43.4
0.4	45.2 - 45.6
0.3	46.1 - 46.4
4.75	58.45- 63.2
3.5	66.0 - 69.5
0.6	74.5 - 75.1
5.8	75.8 - 81.6
0.9	85.7 - 86.6
2.6	88.8 - 91.4
0.3	92.0 - 92.3

ORIENTED CORE INFORMATION

DEPTH (m)	DIP ANGLE (°)	DIP DIRECTION (°)
94.79	63	265
96.46	72	085

CM-80-28A

DATE:	80-09-09 to 80-09-13
LOCATION:	Central Syncline
RIG TYPE:	Longyear 44D
EASTING:	669403.86
NORTHING:	5483655.49
ELEV. (m):	2026.1
TOTAL DEPTH (m):	169
ANGLE:	62°
AZIMUTH:	090°
REMARKS:	

COAL INTERSECTIONS

THICKNESS (m):	DEPTH (m):
11.8	12.5 - 24.3
0.5	25.7 - 26.2
2.2	29.7 - 31.9
1.6	32.8 - 34.4
1.2	36.7 - 37.9
0.8	43.0 - 43.8
5.4	50.0 - 55.4
5.2	55.7 - 60.9
1.4	63.3 - 64.7
3.2	85.6 - 88.8
2.7	90.0 - 92.7
1.8	94.9 - 96.7
1.0	107.8 -108.8
8.9	109.5 -118.4
9.0	119.2 -128.2
1.1	130.2 -131.3
10.7	135.0 -140.7
0.65	141.25-141.9
0.4	143.2 -143.6
2.45	147.75-150.2
3.8	153.5 -157.3
2.9	158.7 -161.6

ORIENTED CORE INFORMATION

DEPTH (m)	DIP ANGLE (°)	DIP DIRECTION (°)
154.22	08	283
163.07	89	306
164.00	78	109
165.5	85	104
167.94	89	288
179.0	86	289

CM-80-29

DATE:	80-07-17 to 80-07-22
LOCATION:	Central Syncline
RIG TYPE:	Longyear 44D
EASTING:	669312.34
NORTHING:	5483615.93
ELEV. (m):	2000.63
TOTAL DEPTH (m):	268
ANGLE:	Vertical
AZIMUTH:	-
REMARKS:	-

COAL INTERSECTIONS

THICKNESS (m):	DEPTH (m):
11.15	12.5 - 23.65
2.7	26.5 - 29.2
0.8	82.2 - 83.3
1.05	83.7 - 84.75
9.15	85.15- 94.6
0.35	94.9 - 95.25
0.25	96.25- 96.5
48.8	97.8 -146.6
32.0	148.5 -180.5
0.55	181.45-182.0
0.5	182.7 -183.2
3.0	188.75-191.75
4.3	194.9 -199.2
0.7	203.0 -203.7
0.8	204.0 -204.8
6.7	209.2 -215.9
0.6	216.9 -217.5
0.8	220.4 -221.2
4.85	221.5 -226.35
0.5	227.5 -228.0
0.95	228.5 -229.45
3.45	238.0 -241.45
2.2	246.7 -248.9
2.9	249.9 -252.8
1.0	254.7 -255.7

CM-80-30

DATE:	80-07-11 to 80-07-16
LOCATION:	Central Syncline
RIG TYPE:	Longyear 44D
EASTING:	669378.57
NORTHING:	5483614.11
ELEV. (m):	2026.78
TOTAL DEPTH (m):	184
ANGLE:	Vertical
AZIMUTH:	--
REMARKS:	Log suite 55 m to TD

COAL INTERSECTIONS

THICKNESS (m)	DEPTH (m)
1.72	65.65 - 67.37
0.25	73.15 - 73.4
0.15	75.45 - 75.6
0.8	78.5 - 79.3
17.65	80.45 - 98.1
0.5	98.5 - 99.0
14.2	103.65 - 117.85
0.6	118.4 -- 119.0
23.05	122.2 - 145.25
1.85	145.65 - 147.5
0.7	149.15 - 149.85
0.5	151.95 - 152.45
0.35	152.75 - 153.1
4.4	155.05 - 159.45
3.15	159.65 - 162.8
1.92	163.03 - 164.95
0.5	168.5 - 169.0
0.45	169.3 - 169.75
0.35	171.65 - 172.0

CM-80-31

DATE:	80-07-06 to 80-07-10
LOCATION:	Central Syncline
RIG TYPE:	Longyear 44D
EASTING:	669388.24
NORTHING:	348369386
ELEV. (m):	2026.98
TOTAL DEPTH (m):	224
ANGLE:	Vertical
AZIMUTH:	--
REMARKS:	Logged through rods

COAL INTERSECTIONS

THICKNESS (m)	DEPTH (m)
8.75	46.85 - 55.6
0.6	66.7 - 67.3
1.1	67.6 - 68.7
0.45	73.8 - 74.25
0.6	74.6 - 75.2
0.4	76.5 - 76.9
o.5	79.4 - 79.9
0.4	83.7 - 84.1
0.5	84.5 - 85.0
0.3	86.2 - 86.5
0.3	87.0 - 87.3
1.7	116.2 - 117.9
0.3	118.2 - 118.5
2.5	118.9 - 121.4
20.4	122.0 - 142.4
1.55	146.8 - 148.35
2.3	148.9 - 151.2
6.1	151.5 - 157.6
7.2	158.5 - 165.7
0.4	167.1 - 167.5
4.6	185.4 - 190.0
0.65	190.5 - 191.2
0.75	191.65 - 192.4
1.5	193.5 - 195.0
0.9	196.6 - 197.5
7.7	198.8 - 206.5
1.35	207.7 - 209.0
2.8	212.0 - 214.8
0.4	215.6 - 216.0
2.7	216.65 - 219.35

CM-80-32

DATE:	80-08-14 to 80-08-17
LOCATION:	East Syncline
RIG TYPE:	Longyear 44D
EASTING:	669796.09
NORTHING:	5483791.55
ELEV. (m):	1924.6
TOTAL DEPTH (m):	71
ANGLE:	87.5°
AZIMUTH:	108°
REMARKS:	Logged by Roke and Davies

COAL INTERSECTIONS

THICKNESS (m):	DEPTH (m):
0.65	22.15 - 22.8
5.7	25.1 - 30.8
4.55	31.25 - 35.8
3.4	36.9 - 40.3
7.4	41.1 - 48.5
11.9	49.1 - 61.0

CM-80-33

DATE:	80-08-18 to 80-08-21
LOCATION:	East Syncline
RIG TYPE:	Longyear 44D
EASTING:	669798.19
NORTHING:	5483615.73
ELEV. (m):	1933.0
TOTAL DEPTH (m):	106
ANGLE:	67.5°
AZIMUTH:	268°
REMARKS:	

COAL INTERSECTIONS

THICKNESS (m):	DEPTH (m):
15.1	11.3 - 26.4
0.5	60.2 - 60.7
7.1	61.7 - 68.8
8.1	69.3 - 77.4
4.2	79.5 - 83.7
3.5	85.2 - 88.7
10.8	90.7 - 101.5

ORIENTED CORE INFORMATION

DEPTH (m)	DIP ANGLE (°)	DIP DIRECTION (°)
100.89	89	264
102.41	83	093
105.66	58	237

CM-80-34

DATE:	80-09-13 to 80-09-15
LOCATION:	Central Syncline
RIG TYPE:	Longyear 44D
EASTING:	669314.26
NORTHING:	5483615.73
ELEV. (m):	2000.63
TOTAL DEPTH (m):	91
ANGLE:	60°
AZIMUTH:	270°
REMARKS:	

COAL INTERSECTIONS

THICKNESS (m):	DEPTH (m):
11.5	10.4 - 21.9
1.5	22.4 - 23.9
1.3	24.6 - 25.9
2.15	29.6 - 31.75
2.0	33.1 - 35.1
0.6	35.5 - 36.1
7.5	36.6 - 44.1
16.2	44.9 - 61.1
2.6	61.7 - 64.3
9.4	65.7 - 75.1

CM-80-35

DATE:	80-09-18
LOCATION:	Central Syncline
RIG TYPE:	Schram
EASTING:	669345.46
NORTHING:	5483540.37
ELEV. (m):	2025.4
TOTAL DEPTH (m):	52
ANGLE:	Vertical
AZIMUTH:	--
REMARKS:	Abandoned due to caving

COAL INTERSECTIONS

THICKNESS (m):	DEPTH (m):
2.0	48.1 - 50.1
1.15	50.85 - 52.0

DIRECTIONAL SURVEY

CM-80-25

NO.	CABLE DEPTH	SLANT ANGLE *	SLANT ANGLE BEARING (MAGNETIC)
0	0	65.60	-
1	20	67.69	61.6
2	40	67.27	57.4
3	60	66.98	56.5
4	80	65.88	67.1
5	100	66.52	56.8
6	116	65.33	51.3

* Measured from horizontal plane

CROW[illegible]EST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	COR[illegible]
AREA	COAL MOUNTAIN

DATE		
	BEGIN	80.07.24
	END	80.07.26

HOLE No. CM-80-25

HOLE PARTICULARS

LOCATION	5483169.59 N		
	669512.93 E		
ELEVATION	2060.71	HOLE BEARING (AZ°)	
TOTAL DEPTH	Logged: 120.86	HOLE ANGLE (°)*	

TOTAL DEPTH Drilled: 121

LOGGING

LOGS RUN	GRN, SDL, CAL, FBL, DIR
LOGGED BY	Roke
OTHER TESTS	-

COAL CORING PERFORMANCE

CORE DIAMETER		HQ
TOTAL	CORE RECOVERED	8.94
	LENGTH CORED	17.75
	CORE RECOVERY	50.4 %

EXAMINATION

LOG USED	Full Suite
No. OF SEAMS SAMPLED	
EXAMINER (S)	K. Sharman
DATE	80.08.03

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS†
1	9.14					0 - 9.14m - no core											
				.80	SLTST	medium gray, broken to lightly broken, iron-stain on bottom half											
	10.36																
				1.21	SST	medium gray, fine grain, small cross-beds, iron-stain in top two-thirds, broken stick	52										
	11.58																
				1.26	SST	medium gray, fine grain, cross-beds, some iron-stain and calcite-filled fractures, stick to broken stick	52										
	12.80																
				.82	SLTST	medium gray, carbonaceous plant debris, iron-stain at bottom, broken stick to broken	43										
2				.43	Shale	medium gray, silty, very fine sandstone at top, broken stick	47										
				.48	Shale	dark gray, soft, crumbly, highly broken											
	14.33																
				1.23	Shale	medium gray, carbonaceous and coaly partings, crumbly, iron-stain, broken stick to broken	46										
	15.85																
				1.36	Shale	medium gray, silty in top half, carbonaceous plant debris, iron-stain, broken	45										
	17.37																
				.40	SLTST	medium gray, cross-beds, broken											
3				.29	SLTST	as above, broken stick	56										
				.28	Shale	dark gray, crumbly, highly broken											
	18.29																
				.10	Shale	as above, highly broken											
				.44	Shale	medium gray, silty, carbonaceous plant debris, broken stick	53										

ALL LINEAR UNITS IN METRES

* : MEASURED FROM THE HORIZONTAL PLANE

† : • R &/OR S — GOLDER ASSOCIATES HARDNESS CODE

• RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-25

FILE No. BA-211A
REVISED Nov. 1978

DWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-25 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
3	18.29																
				.51	SST	medium gray, fine grain, iron-stain, stick	46										
				.05	SLST/SH	medium gray, iron-stain, broken to highly broken											
	19.81																
				1.32	Shale	medium gray, iron-stain in middle, broken to highly broken	54										
	20.73																
				.29	SLTST	medium gray, iron-stain, broken											
4																	
				1.10	Shale	medium gray, some silty interbeds, crumbly, iron-stain, powdery, iron-stain zone (10 cm) at 21.60, broken stick to highly broken											
				1.56	Shale	silty, medium gray, broken stick	54										
	23.47																
				.62	Shale	medium gray, iron-stain, broken stick	51										
				.35	Shale	dark gray, carbonaceous, highly broken											
				.67	Shale	medium gray, silty, broken											
	24.99																
5																	
				1.64	Shale	medium gray, silty near top, carbonaceous parting in middle, iron-stain near bottom, stick to broken stick	45										
	26.52																
				1.54	SST	medium gray, fine grain, silty near top, cross-beds, iron-stain, calcite-filled fractures, stick	44										
	28.04																
				1.00	SST	medium gray, fine grain, cross-beds, calcite-filled fractures, iron-stained, powdery zone (5 cm) at 28.84, stick	46										
6																	
				.40	SST	medium gray, fine grain, calcite-filled fractures, broken stick	55										
	29.47																
				.94	SST	gray to brown, fine grain, coaly interbeds to 3 cm, broken stick	53										
				.18	SST	medium gray, fine grain, iron-stain, highly broken to powder											

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-25 CONTINUED

FILE No. BA-212 A
REVISED Nov. 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-25 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
6	29.47																
				.41	SST	medium gray, medium grain, light and dark laminae, broken stick	51										
	31.09																
				.48	SST	medium gray, very fine grain, coaly interbed at top, iron-stain, broken stick to highly broken	52										
				.83	SST	medium gray, medium grain, iron-stain in top half, broken stick	52										
	32.31																
				.15	SST	as above, broken stick											
				.62	SLTST	medium gray, some iron-stain, broken stick to broken	50										
7																	
				.50	SST	medium gray, very fine grain, thin coaly partings, broken stick	65										
	33.53																
				.67	SST	medium gray, very fine grain, some iron-stain broken stick to broken	70										
	34.14																
				1.73	SST	medium gray, fine grain, carbonaceous and coaly wisps and partings, rip-up clasts, iron-stain in middle, broken stick to broken	6										
	35.97																
				1.30	SST	as above, coaly partings and wisps more abundant, stick to broken stick	55										
	37.19																
				.07	SST	medium gray, medium grain, carbonaceous and coaly partings, broken stick											
8																	
				1.47	SST	medium gray, very fine grain, stick to broken stick	65										
	38.40																
				.38	SST	medium gray, fine grain, broken to highly											
				.71	SST	medium gray, medium grain, getting finer at bottom, broken	62										

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-25 CONTINUED

FILE No. BA-212.A
REVISED Nov 1978

C. S NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-25 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
8	39.47																
				.68	SLST/SH	medium gray, iron-stain at top, broken	68										
	40.23																
				.79	Shale	gray-brown, carbonaceous plant debris, broken											
9																	
				.42	Shale	as above, broken											
	41.76																
				.62	Shale	as above, broken stick to broken	64										
				.70	SST	medium gray, very fine to fine grain, mottled, calcite-filled fractures, iron-stain											
	43.28																
				1.10	SS/SLST	medium gray, sandstone fine grained, stick to broken stick	68										
				.50	SST	medium gray, medium grain, silty interbeds, broken stick	68										
	44.81																
				.30	SLTST	medium gray, calcite-filled fractures, stick	63										
				.64	Shale	medium gray, mottled, iron-stain, broken stick											
10																	
				.65	Shale	medium gray, iron-stain, highly broken	62										
	46.33																
				.79	Shale	medium gray, carbonaceous plant debris, abundant iron-stain, highly broken to powder											
	47.85																
				.58	Shale	as above, highly broken											
				.41	SLTST	medium gray, carbonaceous partings, calcite-filled fractures, iron-stain	68										
				.20	Shale	dark gray, carbonaceous partings, broken											
	49.38																
				.22	Shale	as above, broken to highly broken											
		49.80		.40	Coal	dull, highly broken to powder											

ALL LINEAR UNITS IN METRES

† :=R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
*RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-25 CONTINUED

FILE No. BA-212 A
REVISED Nov 1978

C. OWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-25 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.c.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
10																	
	50.90																
				.13	Coal	dull, powder			48								
	52.43																
			52.40	.17	Coal	dull, highly broken to powder											
				.30	Shale	dark gray, carbonaceous partings, highly broken											
		52.60		.09	Coal	bright, broken stick	45										
	53.34																
				.16	Coal	bright, broken to highly broken											
				.22	Shale	medium gray, broken	53										
			53.70	.53	Coal	dull, powder											
				.44	Shale	dark gray, carbonaceous and coaly partings, highly broken											
	54.56																
				1.01	Shale	dark gray, silty in bottom half, carbonaceous partings, broken stick to highly broken	46										
	55.47																
				1.80	Shale	dark gray, carbonaceous partings, silty interbeds, iron-stain at bottom, a few calcite-filled fractures, stick to broken	54										
	57.00																
12																	
				1.58	Shale	dark gray, carbonaceous partings, silty interbeds, some iron-stain, crumbly, broken	41										
	58.52																
				1.52	Shale	as above, broken stick	43										
	60.05																
				1.18	Shale	medium gray, carbonaceous partings, crumbly, broken stick to broken	58										
13																	
				.34	Shale	as above, calcite-filled fractures, broken stick to broken	50										
	61.57																
				1.56	Shale	medium gray, carbonaceous partings, siltstone interbeds, iron-stain in middle, broken stick	49										

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF —— FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-25 CONTINUED

FILE No. BA-212A
REVISED Nov. 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-25 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
13	63.09																
				1.65	Shale	as above, broken stick to broken	47										
	64.62																
				.76	Shale	as above, broken stick	54										
14																	
				.86	Shale	dark gray, carbonaceous plant debris, broken stick to broken	46										
	66.14																
				1.54	SH/SLST	medium gray, calcite-filled fractures, 20 cm powdery iron-stained zone at 67.20 m	44										
	67.67																
				1.57	Shale	dark gray, carbonaceous plant debris, iron-stained top, crumbly, broken stick to highly broken	49										
	69.19																
				.33	Shale	dark gray, carbonaceous plant debris, broken	49										
15																	
				1.26	Shale	dark gray, carbonaceous plant debris and partings, silty near top, calcite-filled fractures near top, broken stick to broken	49										
	70.71																
				1.62	Shale	dark gray, carbonaceous plant debris, silty interbeds with calcite-filled fractures in middle, broken stick to broken	50										
	72.24																
				1.52	Shale	carbonaceous plant debris, silty interbeds with calcite-filled interbeds in middle, some iron-strain at top, broken stick to broken	53										
16																	
				1.56	Shale	dark gray, carbonaceous plant debris, carbonaceous and coaly partings in lower half, broken stick to highly broken	51										
	75.29																
				.80	Shale	dark gray, crumbly, carbonaceous plant debris, broken to highly broken			49 ↓								
		75.85		.20	Coal	dull, shaley, broken stick											
				.24	Coal	dull, powdery											

ALL LINEAR UNITS IN METRES

† :-R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-25 CONTINUED

FILE No. 8A-212 A
REVISED Nov. 1978

WS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-25 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
16																	
	76.66								50								
				.29	Coal	dull, highly broken to powder											
				.27	Coal	dull, shaley, broken to highly broken	49										
				.44	Coal	dull, highly broken to powder											
	78.03																
				.18	Coal	dull, shaley, highly broken											
				.14	Coal	dull, sheared, powdery											
				.09	Coal	dull with bright, highly broken											
17				.10	Coal	dull, shaley, highly broken											
				.23	Coal	dull, highly broken to powder											
	78.64																
				.34	Coal	dull, broken to highly broken											
				.03	Shale	dark gray, broken	54										
				.20	Coal	dull, highly broken											
			79.20	.15	Coal	dull, powdery											
				.41	Shale	coaly, sheared, highly broken to powder											
	79.86																
		79.65		.10	Coal	dull, broken											
				.08	Coal	dull, shaley, broken stick											
				.51	Coal	dull, some dull with bright, broken stick to broken	45										
				.20	Coal	bright with dull, broken											
				.64	Coal	dull, broken stick to broken											
	81.38																
				.04	Coal	dull, broken stick											
				.04	Coal	bright, broken stick											
			81.60	.23	Coal	dull, broken											
				1.03	Shale	dark gray, carbonaceous and coaly partings, siltstone interbeds in bottom half, broken stick to highly broken											

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-25 CONTINUED

FILE No. BA-212A
REVISED Nov 1978

C. /S NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-25 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
17																	
	82.75																
18																	
				1.41	Shale	dark gray, carbonaceous and coaly partings, broken stick to broken	45										
	84.22																
				.59	Shale	as above, broken stick to broken	48										
	84.73																
				.86	Shale	dark gray, broken	51										
	85.65																
				1.03	Shale	as above, minor carbonaceous plant debris, broken stick to broken	51										
	86.56																
				.43	Shale	as above, broken stick, silty at bottom	52										
19																	
				1.03	SLTST	medium gray, minor dark gray shale, broken stick to broken	42										
	88.09																
				1.31	SST	medium gray, fine-grained, some siltstone near top, stick to broken	47										
				.24	SST	medium-grained, medium gray, broken stick											
	90.07																
				.87	SST	fine grained, medium gray, grading to siltstone at bottom, carbonaceous partings, broken stick to broken, calcite-filled fractures	42										
	91.14																
				.46	SLTST	medium gray, calcite-filled fractures, broken stick to broken	38										
				.60	Shale	dark gray, fissile, carbonaceous plant debris, broken to highly broken	41										
	92.05																
		91.80	92.25	.12	Coal	dull with bright, broken											
				.98	Shale	dark gray, carbonaceous partings and plant debris, broken stick to broken	49										
	93.57																
				.74	Shale	as above, broken	42										
	95.10																
				.66	Shale	dark gray, fissile, broken to highly broken	44										
		94.75		.14	Coal	dull, shaley, broken											
				.25	Coal	dull, highly broken to powder											

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-25 CONTINUED

FILE No. BA-212 A
REVISED Nov 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-25 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
	96.62																
			96.88	.14	Coal	dull with bright, broken stick	42										
				.41	Shale	dark gray, carbonaceous partings, broken stick	34										
	97.84																
21																	
				.20	Shale	as above, broken											
	99.52																
				.75	Shale	as above, fissile, broken	43										
		98.20	98.80	.22	Coal	dull, powder											
				.11	Shale	coaly, highly broken to powder, sheared											
		99.20	100.05	.26	Coal	dull, powder											
		100.25	100.70	.16	Shale	dark gray, sheared, highly broken to powder											
	101.19																
				.21	Shale	dark gray, coaly, highly broken wash											
		101.00	101.30		Coal												
		101.50															
				.33	Shale	dark gray, carbonaceous partings, highly broken	43										
	101.80																
				.36	Shale	dark gray, carbonaceous and coaly partings, highly broken											
				.17	Coal	dull, highly broken to powder											
				.05	Shale	dark gray, coaly, highly broken											
				.17	Coal	dull, shaley, highly broken											
				.12	SLTST	medium gray, broken											
				.35	Coal	dull, shaley, highly broken	50										
				.09	Shale	dark gray, carbonaceous partings, highly broken											
	103.02																
				.20	Coal	dull, broken											
				.22	Shale	coaly, broken to highly broken											
22																	
			103.85	.22	Coal	dull, highly broken											

ALL LINEAR UNITS IN METRES

† :•RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF —— FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-25 CONTINUED

FILE No. BA-212 A
REVISED Nov 1978

C S NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-25 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
22																	
	104.24																
		104.20		.18	Coal	dull, highly broken											
				.08	SST	fine-grained, highly broken											
				.14	Coal	dull, shaley, highly broken											
			104.90	.19	Coal	dull, powder											
				.78	SST	medium gray, medium-grained, some coaly partings, stick to broken stick (Moose Mtn.)	40										
	105.77																
				1.48	SST	as above, stick to broken stick	46										
	107.29																
				1.03	SST	as above, carbonaceous partings absent, stick	55										
23																	
	108.81																
				1.50	SST	as above, stick	57										
	110.34																
				1.53	SST	as above, stick	39										
	111.86																
				.43	SST	as above, broken stick	49										
24																	
				1.10	SST	as above, calcite-filled fractures in bottom half, stick	40										
	113.39																
				1.53	SST	as above, broken stick	38										
	114.91																
				1.54	SST	as above, stick	35										
	116.43																
25																	
				1.56	SST	as above, broken stick	50										
	117.96																
				1.57	SST	as above, broken stick	48										
	119.48																
				1.04	SST	as above, stick	47										
26																	
				.45	SST	as above, broken stick	43										
	121.01				T.D.												

ALL LINEAR UNITS IN METRES

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•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-25 CONTINUED

FILE No. BA-212 A
REVISED Nov. 1978

DIRECTIONAL SURVEY

CM-80-26

NO.	CABLE DEPTH (M)	SLANT ANGLE *	SLANT ANGLE BEARING
	50	88.2	031
	100	87.0	085
	205	85.0	082

* Measured from Horizontal

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	COR
AREA	COAL MOUNTAIN

DATE	
BEGIN	80.07.27
END	80.08.01

HOLE No. CM-80-26

HOLE PARTICULARS

LOCATION	5483256.6 N		
	669508.69 E		
ELEVATION	2069.32	HOLE BEARING (AZ°)	
TOTAL DEPTH	Logged: 209	HOLE ANGLE (°)*	

TOTAL DEPTH Drilled: 210

LOGGING

LOGS RUN	Gamma, Density, Caliper, Dir.
LOGGED BY	Davies
OTHER TESTS	

COAL CORING PERFORMANCE

CORE DIAMETER		
TOTAL	CORE RECOVERED	31.42
	LENGTH CORED	49.50
	CORE RECOVERY	63.5 %

EXAMINATION

LOG USED	Full Suite
No. OF SEAMS SAMPLED	
EXAMINER (S)	K.S./ P.G.
DATE	80.08.05

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS†
1																	
	7.77																
				1.80	Shale	dark gray, carbonaceous plant debris, iron-stain, slicks, broken to highly broken											
	9.75																
				.43	Shale	as above, broken											
				.08	Shale	coaly, sheared, highly broken											
				.78	SLTST	dark gray, very fine sandstone near top, iron-stain at bottom, broken	40										
	11.27																
				.87	SST	medium gray, fine, siltstone at top, broken stick to broken	33										
				.40	SLTST	dark gray, iron-stain, slicks, highly broken											
2																	
				.30	SLTST	as above, broken to highly broken											
	12.80																
				.94	Shale	dark gray, carbonaceous partings, slicks, broken	58										
				.26	Shale	as above, highly broken, iron-stain											
	14.32																
				.87	Shale	as above, silty near bottom, broken stick to broken	61										
				.51	Shale	dark gray, carbonaceous partings, iron-stain, slicks, highly broken											
	15.84																
				.94	Shale	as above, broken stick to highly broken	40										
	17.37																
				.39	Shale	as above, broken to highly broken	37										
		18.20	18.70	.50	Coal	Indicated on Log											

ALL LINEAR UNITS IN METRES

* : MEASURED FROM THE HORIZONTAL PLANE

† : • R &/OR S — GOLDER ASSOCIATES HARDNESS CODE

• RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-26

FILE No. BA-211A
REVISED Nov. 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CONTINUED CM-80-26

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
3				.36	SST	medium gray, very fine, carbonaceous partings iron-stain, broken											
				.47	SST	as above, more iron-stain, drilling mud cake, highly broken to powder											
	18.89																
				.98	Shale	dark gray, carbonaceous partings, iron-stain, slicks, broken to highly broken	19										
	20.42																
				1.19	Shale	dark gray, carbonaceous partings, some iron-stain, slicks, broken stick to broken	21										
	21.94																
		21.70	22.00	.30	Coal	indicated on log											
				1.10	Shale	dark gray, silty in middle, carbonaceous partings, some calcite-filled fractures, broken stick to broken	18										
	23.16																
4				.37	SST	medium gray, fine grain, iron-stain, broken	33										
				.40	SLTST	dark gray, abundant iron-stain, broken to powder											
		24.35	24.85	.50	Coal	indicated on logs											
	24.99																
				.38	SLTST	dark gray, iron-stain, slicks, broken	43										
				.30	Shale	dark gray, slicks, iron-stain											
				.88	Shale	dark gray, carbonaceous partings, silty interbeds in middle, iron-stain, broken stick to broken											
	26.51																
				.43	Shale	dark gray, carbonaceous partings, slicks, iron-stain, broken stick											
	28.04																
				.73	Shale	as above, broken	24										
				.76	SST	dark gray, fine-grained, carbonaceous partings, iron-stain, slicks, broken											
5				.44	Shale	dark gray, carbonaceous partings, silty at base, iron-stain at base, broken	20										

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CONTINUED CM-80-26

FILE No BA-212A
REVISED Nov 1978

C. .VS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-26 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
5																	
	29.26																
				.17	SLTST	medium gray, some iron-stain, broken	30										
				1.02	Shale	dark gray, carbonaceous and coaly partings, iron-stain in middle, broken stick to highly broken											
				.24	SST	medium gray, fine grain, carbonaceous partings, broken											
	30.78																
				1.12	SLTST	dark gray, very fine sandstone at top, broken stick to broken	36										
	32.00																
				.47	SLTST	dark gray, some iron-stain, broken stick	33										
				.72	Shale	dark gray, carbonaceous partings, iron-stain in bottom half, broken stick to broken											
	33.72																
6				.86	Shale	dark gray, carbonaceous partings, iron-stain, broken to highly broken	34										
	34.13																
				.98	Shale	as above, slicks, highly broken											
	35.53																
				1.59	Shale	dark gray, carbonaceous plant debris, silty, crumbly, some iron-stain											
	37.03																
				.81	Shale	as above, slicks, broken											
7				.86	Shale	as above, broken stick	29										
	38.40																
				1.03	Shale	as above, sheared and iron-stained in middle, broken to highly broken											
				.57	SST	medium gray, fine grained, silty in bottom half, a few calcite-filled fractures, broken stick to broken											
	39.77																
				.64	SLTST	dark gray, carbonaceous partings, minor very fine sandstone, some slicks, iron-stain, broken stick	33										

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF —— FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-26 CONTINUED

NEWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-26 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
7	39.77																
				.81	SST	medium gray, fine-grained, silty near bottom, convolute bedding in top half, calcite-filled fractures, broken stick	40										
	41.30																
				.28	SST	dark gray, very fine grained, carbonaceous partings, calcite-filled fractures, iron-stain, broken stick	47										
8																	
				.18	SLTST	dark gray, carbonaceous partings, broken stick	31										
				1.07	Shale	dark gray, silty, carbonaceous partings, some iron-stain, broken stick											
	42.82																
				1.22	Shale	dark gray, carbonaceous partings, slicks, some iron-stain, broken stick to broken	33										
	44.04																
				1.28	Shale	as above, broken, highly broken in middle	35										
	45.11																
				.47	Shale	as above, broken stick to highly broken											
9																	
				.86	Shale	dark gray, carbonaceous and coaly partings, slicks, broken stick	30										
	46.32																
				1.56	Shale	dark gray, silty, carbonaceous and coaly partings, a few slicks, broken stick to broken	45										
	47.85																
				.44	Shale	as above, broken											
				1.16	SST	medium gray, fine grain, shale interbeds, slick, broken stick to broken	40										
	49.37																
				.27	Shale	dark gray, silty, carbonaceous and coaly partings, crumbly, broken											
10																	
				.43	Shale	dark gray, carbonaceous partings, crumbly broken											

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-26 CONTINUED

FILE No. BA-212 A
REVISED Nov. 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-26 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
10																	
				.82	Shale	medium gray, crumbly, broken stick											
	50.90																
				.18	Shale	medium gray, silty, broken											
				1.40	SST	medium gray, fine grain, carbonaceous partings, calcite-filled fractures, some iron-stain	49										
	52.42																
				.82	SST	as above, broken stick	46										
				.54	SLTST	dark gray, carbonaceous partings, broken stick											
11																	
				.30	Shale	dark gray, carbonaceous partings, broken											
				1.18	SLTST	medium gray, carbonaceous partings, slicks, broken stick to broken	49										
	55.32																
				1.60	Shale	dark gray, silty, siltstone interbeds, iron-stain, broken to highly broken	35										
	56.84																
				1.24	Shale	dark to medium gray, silty, fine sandstone at base, broken stick to broken	45										
12																	
				.36	Shale	dark gray, silty, carbonaceous partings, broken stick	47										
	58.21																
				1.05	SS/SH	interbedded, dark gray, carbonaceous partings stick	33										
				.52	SLTST	dark gray, carbonaceous partings, broken stick											
	60.04																
				1.49	SST	medium gray, very fine grain, slumps, calcite filled fractures, stick	38										
	61.56																
				.65	SST	as above, broken stick	44										
13																	
				.95	SS/SH	medium gray, sandstone fine grain, carbonaceous partings, broken stick	54										

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-26 CONTINUED

FILE No BA-212 A
REVISED Nov 1978

C S NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-26 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % o.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
13	63.09																
				1.32	SS/SH	as above, broken stick	45										
	64.61																
				.38	SS/SH	medium gray, sandstone fine, carbonaceous partings, broken stick	40										
				.98	SST	medium gray, fine-grained, cross-beds, calcite-filled fractures, stick	54										
	66.14																
				.35	Shale	dark gray, silty interbeds, stick											
14																	
				1.26	SLTST	dark gray grading into fine sandstone at base, stick	40										
	67.66																
				1.57	SLTST	dark gray, carbonaceous and coaly partings, fine sandstone interbeds, stick	39										
	69.18																
				.68	SLTST	as above, broken stick	46										
				.13	Shale	dark gray, carbonaceous plant debris, broken stick											
	70.10																
				.39	Shale	as above, carbonaceous partings, broken stick											
15																	
				1.04	SLTST	dark gray, carbonaceous partings, dark gray shale at base, broken stick	58										
	71.93																
				1.54	SST	medium gray, fine grained, cross-bedded, silty in middle, slicks, stick to broken stick	62										
	73.76																
				1.52	SST	as above, calcite-filled fractures, broken stick											
	75.28																
16																	
				.59	SLTST	dark gray, carbonaceous partings, slicks, broken stick	56										
				1.00	SST	medium gray, fine-grained, carbonaceous partings, broken stick	55										
	76.80																
				1.05	Shale	dark gray, carbonaceous plant debris, broken stick to broken	51										

ALL LINEAR UNITS IN METRES

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FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-26 CONTINUED

FILE No. BA-212A
REVISED Nov 1978

C. S NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-26 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
16	77.72																
				1.41	Shale	as above, broken stick to broken	46										
				.23	SLTST	dark gray, broken stick	49										
17																	
	79.24																
				.09	Shale	dark gray, silty, carbonaceous plant debris, slicks, broken											
				.53	SST	medium gray, fine-grained, cross-beds, carbonaceous partings, calcite-filled fracture, minor slicks, broken stick	56										
				.27	Shale	dark gray, silty, broken stick											
	79.85																
				.99	Shale	dark gray, silty interbeds in bottom 1/2, carbonaceous partings, broken stick to broken	45										
				.31	SST	light gray, fine-grained, interbedded siltstone with carbonaceous partings, broken stick	49										
	81.07																
				1.39	Shale	dark gray, silty interbeds, very fine-grained sandstone at top, carbonaceous plant debris, slicks, calcite-filled fractures, broken stick	57										
				.06	SLTST	dark gray, carbonaceous plant debris, broken stick											
				.10	Shale	dark gray, carbonaceous plant debris, highly broken											
	82.06																
				.07	Shale	dark gray, carbonaceous partings, slicks, broken stick	45										
18																	
				.32	Shale	as above, broken stick											
				.91	SH/SLST	dark gray, carbonaceous partings and plant debris, minor fine sandstone, calcite-filled fractures in bottom 1/2, some slicks, broken stick	54										
				.08	SST	medium gray, fine-grained, silty interbeds, cross-beds, broken											

ALL LINEAR UNITS IN METRES

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▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-26 CONTINUED

FILE No. BA-212 A
REVISED Nov 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-26 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
18	84.12																
				.33	SST	medium gray, fine-grained, silty-shale interbeds, cross-beds, carbonaceous partings, calcite-filled fractures, broken stick	51										
				1.16	Shale	dark gray, silty interbeds at top, carbonaceous partings, slicks, some iron-staining, calcite-filled fractures, broken stick	58										
	85.64																
				1.12	SST	medium gray, very fine to fine grained, carbonaceous partings, silty interbeds, slicks, calcite-filled fractures, grades to siltstone at bottom, broken stick	40										
				.16	Shale	dark gray, carbonaceous partings, silty near top, broken stick											
19																	
				.16	SLTST	medium gray, carbonaceous partings, broken stick	44										
	87.17																
				.50	Shale	dark gray, silty interbeds, carbonaceous partings, calcite-filled, broken stick											
				1.07	SLTST	dark gray, carbonaceous partings grading into silty shale, calcite-filled fractures in siltstone, broken stick	56										
	88.69																
				1.24	Shale	dark gray, carbonaceous and coaly partings, broken stick to broken	56										
				.19	Shale	dark gray, abundant slicks, highly broken											
	90.06								52								
		89.90		.25	Coal	dull, highly sheared, tube			↓								
				.67	Coal	dull, broken to highly broken			↓								
	90.98								53								
20									↓								
				.70	Coal	dull with bright, slicks, pyrite, broken	25		↓								
	92.04																
				.35	Coal	powder, tube			↓								
				.15	Coal	dull with bright, broken	20		↓								
	92.65																
				.22	Shale	coaly splits, slicked, broken	35		↓								

ALL LINEAR UNITS IN METRES

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•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-26 CONTINUED

FILE No. BA-212 A
REVISED Nov. 1978

/WS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-26 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
20	92.65																
			92.65	.07	Coal	sheared, broken			54								
				.04	Shale	sheared, broken											
		93.20		.27	Coal	dull with bright, broken to powder, pyrite			55								
	93.57																
				.06	Shale	broken											
			93.80	.85	Coal	highly broken to powder, dull with bright											
	95.09																
		94.75		.05	Coal	as above			56								
				.18	Shale	dark gray, coal partings, broken stick	13										
				.13	Coal	highly broken											
21																	
				.08	Coal	dull, broken											
				.17	Coal	dull, shaley, hard, broken											
	96.47																
			96.70	.18	Coal	highly sheared, broken											
				.40	Shale	carbonaceous and coal partings, broken	30										
		97.10		.15	Coal	dull, hard, broken											
				.11	Coal	powder											
	97.48																
				.75	Coal	highly broken											
				.04	Shale	carbonaceous, coaly											
				.15	Coal		12										
	99.36																
				.40	Coal	dull with bright, highly broken, tube											
	99.82																
				.45	Coal	dull, highly broken, tube											
				.05	Coal	dull, hard											
				.04	Coal/SH	wash											
				.30	Coal	dull, broken	30										
22																	
	101.04																
				.02	Coal	dull, shaley											

ALL LINEAR UNITS IN METRES

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FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-26 CONTINUED

FILE No. BA-212A
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CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-26 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
22				.08	Shale		36		56								
				.20	Coal	dull, hard											
				.15	Shale	hard											
				.28	Coal	powder											
	102.40																
				.27	Coal	dull, small shale splits, broken											
				.22	Coal	dull, hard, broken											
				.02	Shale	broken											
				.07	Coal	dull with bright, highly broken											
				.18	Coal	dull, broken											
				.16	Coal	powder, tube											
	103.93																
				.14	Coal	powder											
				.40	Coal	dull, highly broken											
				.18	Coal	powder											
	105.14																
				.05	Coal	powder											
				.04	Shale	powder											
				.50	Coal	powder, tube											
	106.22																
23				.75	Coal	dull with bright, broken stick to broken	19										
	107.28																
				.11	Coal	dull with bright, broken											
				.15	Coal	powder											
				.18	Coal	dull with bright, .02 shale split	21										
				.14	Coal	powder											
	108.87																
				.70	Coal	dull, some dull with bright, broken											
	110.03			.35	Coal	powdery											
				.26	Coal	dull, hard, broken											

ALL LINEAR UNITS IN METRES

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FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-26 CONTINUED

FILE No BA-212A
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CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-26 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS[1]
23	110.94																
				.40	Coal	dull with bright, broken			56								
24																	
				.35	Coal	dull with bright, broken	33										
				.05	Coal	powder											
	112.16																
				.60	Coal	mainly dull, some bright, broken stick	30										
				.32	Coal	broken											
	113.38																
				.12	Coal	dull, hard, broken											
				.86	Coal	dull with bright, broken stick	24										
	114.90																
				.86	Coal	dull with bright, broken											
	116.12																
			116.40	.15	Coal	dull with bright, powder, tube											
				.16	Shale	dark gray, coaly partings, broken stick	37										
25																	
				.52	Shale	as above, highly fractured, broken stick											
		117.25		.12	Coal	dull, broken											
			117.50	.10	Coal/SH	powder, wash											
	117.65																
				.14	Shale	carbonaceous, coaly, broken											
				1.00	Shale	dark gray, coaly partings, slicks, broken to broken stick	30										
	119.17																
				.70	Shale	as above	32										
				.95	Shale	silty to sandy laminae, stick	33										
	120.85																
				.40	Shale	as above, broken stick	33										
26																	
				1.10	Shale	as above, broken stick	36										
	122.52																
				1.50	Shale	crumbly, broken stick to stick	28										
	124.05																
				1.35	Shale	as above	25										
	125.57																
				.17	Shale	as above											
27																	
				.92	Shale	as above	20										
	127.10																
				1.52	Shale	as above, some coaly partings	38										

ALL LINEAR UNITS IN METRES

1 :-RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
-RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-26 CONTINUED

FILE No. 6A - 212 A
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WESTERN NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-26 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
27	128.62																
				1.23	Shale	as above	26										
28																	
				.03	Shale	broken											
	130.14																
				.82	Shale	dark gray, silty to sandy laminae, crumbly, broken stick to stick	24										
				.35	Shale	as above, calcite-filled fractures											
				.30	Shale	as above, broken											
	131.67																
				1.45	Shale	as above, broken stick to stick	25										
	133.19																
				.79	Shale	as above	24										
29																	
				.80	Shale	as above	31										
	136.77																
				1.11	Shale	as above	20-25										
	135.79																
				1.25	Shale	as above, some carbonaceous and coaly partings, stick	34										
	137.31																
				.68	Shale	as above	30										
30																	
				.92	Shale	as above	24										
	138.84																
				.94	Shale	as above	29										
	139.90																
				.90	Shale	as above											
	140.82																
				1.09	Shale	as above, stick	22										
31																	
				.41	Shale	as above, calcite-filled fractures											
	142.34																
				.55	Shale	as above, calcite-filled fractures, small scale deformation											
				.89	Shale	as above	29										
	143.87																
				1.54	Shale	as above	26										
	145.39																
				.60	Shale	as above	30										
32																	
				.84	Shale	dark gray, slightly silty, carbonaceous partings, slicks, broken stick	30										
	146.91																
				1.45	Shale	as above, stick	29										

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-26 CONTINUED

FILE No BA-212 A
REVISED Nov 1978

CK. .S NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CONTINUED CM-80-26

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
32	148.44																
				1.52	Shale	as above, broken stick											
	149.96																
33				1.42	Shale	dark gray, carbonaceous partings, slicks, stick to broken stick	30										
	151.49																
				.92	Shale	as above	28										
				.18	Shale	as above, calcite fractures											
				.28	Shale	as above											
	153.01																
				.93	Shale	as above	30										
34				.47	Shale	as above, broken	36										
	154.53																
				1.44	Shale	as above, calcite-filled fractures near top											
	156.06																
				1.34	Shale	as above, broken at base	33										
	157.58																
				.40	Shale	as above											
35																	
				.61	Shale	as above, broken	20										
	159.11																
		158.80		.52	Coal	broken to highly broken			57								
				.08	Shale	broken	30										
				.06	Coal	powder											
	160.63																
				.80	Coal	dull with bright, broken, tube			58								
	161.85																
				.12	Coal	dull with bright, broken											
				1.00	Coal	dull with bright, broken stick	20										
	163.37																
				.14	Coal	broken, dull											
36																	
				1.20	Coal	dull with some bright, broken stick	15										
	165.05																
				.55	Coal	dull with bright, broken	15										
				.25	Coal	dull with bright, highly broken											
				.12	Coal	powder											
	166.42																
			167.40	.02	Coal	broken											
				.55	Shale	carbonaceous, slicked, broken											

ALL LINEAR UNITS IN METRES

† = R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
= RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CONTINUED CM-80-26

CH..ZS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-26 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS*
36	167.94																
				.30	Shale	as above											
		168.75	169.80	.20	Coal	powder											
	169.16																
				.13	Shale	dark gray, slicked, broken, massive											
37																	
				.40	Shale	as above, broken											
	170.38																
				.63	Shale	as above, broken											
	171.60																
				.43	Shale	as above, broken											
				.23	Shale	silty, calcite-filled fractures at base	29										
				.48	SST	fine to medium, silty interbeds, slicked along carbonaceous partings, broken stick											
	173.12																
				.90	SST	as above, some slicks	45										
		174.00		.05	Coal	dull with bright, broken											
	174.34																
				.13	Coal	highly broken											
38																	
				.45	Coal	dull with bright, broken, tube											
	175.86																
				.15	Coal	powder											
			175.50														
				.10	Shale	coaly, broken											
	177.09																
				.35	Shale	dark gray, massive, carbonaceous partings, broken											
				.12	Shale	as above, highly broken											
				.10	SH/Coal	powder											
				.82	Shale	dark gray, massive, some carbonaceous, broken stick											
	178.00																
				.75	Shale	as above, crumbly, tube, numerous slicks											
				.36	SST	medium, carbonaceous partings, slicked, broken											
	179.22																
39																	
				1.15	SST	as above, broken stick	26										

ALL LINEAR UNITS IN METRES

* = R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
= RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-26 CONTINUED

FILE No. BA-212 A
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C /5 NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-26 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
39	180.44																
				.43	SS/SLST	laminae, stick	23										
				.42	Shale	dark gray, massive											
		181.30	181.70	.39	Coal	highly broken											
	181.90																
				1.15	Shale	dark gray, massive, broken											
	183.18																
				.15	Shale	as above, broken											
40																	
				.90	Shale	black, broken, plants	41										
				.19	Shale	as above, highly broken, some coal											
	184.55																
				.16	Shale	with coal, highly broken											
		184.70	185.25	.06	Coal	powder											
				.70	Shale	black, coaly in places, broken											
	185.93																
				.35	Shale	dark gray, carbonaceous, slicks											
		186.35		.22	Coal	highly broken											
				.09	Coal	shaley											
				.31	Coal	powder, tube											
	187.30																
			187.70	.20	Coal	hard, shaley, broken	35										
				.01	Shale	dark gray, carbonaceous partings											
41																	
				.49	Shale	dark gray, carbonaceous plant debris, slicks, broken											
	188.37																
				.94	Shale	dark gray, carbonaceous partings, a few sheared coaly interbeds, broken to highly broken											
	189.58																
		189.50		.38	Coal	dull, shaley, broken to highly broken	35		59								
				.18	Shale	dark gray, coaly, thin bright bands, broken stick											
				.58	Coal	dull, shaley, broken											

ALL LINEAR UNITS IN METRES

† •R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-26 CONTINUED

FILE No. BA-212 A
REVISED Nov 1979

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-26 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
41																	
				.21	Coal	dull to dull with bright, broken			59								
	191.11																
				.20	Coal	dull with bright, broken	38										
				.35	Coal	dull with bright, shaley, broken stick											
				.09	Coal	dull, broken											
				.24	Coal	dull, shaley, broken											
				.23	Coal	dull, highly broken											
				.09	Coal	dull with bright, broken											
				.08	Coal	dull, shaley, broken											
	192.63																
				.12	Coal	dull, broken											
42																	
				.08	Coal	dull, shaley, broken											
				.12	Coal	dull, broken to highly broken											
				.18	Coal	dull, shaley, broken											
				.36	Shale	dark gray, carbonaceous and coaly partings, siltstone beds near base, broken											
				.14	Coal	dull, broken											
				.21	Coal	dull, shaley, broken											
			194.00	.26	Coal	dull, sheared, highly broken											
				.16	Shale	coaly, broken to highly broken											
	194.16																
				.29	Shale	dark gray, carbonaceous and coaly partings, broken	36										
				.33	Coal	dull with bright, shaley, broken											
				.12	Shale	dark gray, coaly, broken stick											
				.05	SLTST	dark gray, carbonaceous and coaly partings, broken stick											
		195.20		.38	Coal	dull, shaley, sheared, broken			60								

ALL LINEAR UNITS IN METRES

† :=R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
=RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-26 CONTINUED

FILE No. 8A-212 A
REVISED Nov. 1978

CR..S NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-26 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS*
42		195.20															
				.14	Coal	dull, sheared, highly broken			60								
				.09	Coal	dull, broken											
	195.68																
				.18	Coal	dull, sheared, highly broken			↓								
				.12	Coal	dull, broken			61								
			196.50	.83	Coal	dull, shaley, broken											
	196.90																
				.12	SST	medium gray, fine-grained, slicks, very fine pyrite, broken											
				.30	Shale	dark gray, carbonaceous coaly partings, broken stick to broken	39										
43																	
		197.30		.41	Coal	dull, shaley, broken stick	41										
				.15	Coal	dull, broken											
				.11	Coal	dull, shaley, broken											
				.18	Shale	coaly, broken											
				.36	Coal	dull, sheared, highly broken											
	198.58																
				.27	Coal	dull, sheared, highly broken											
				.44	Coal	dull, broken											
				.20	Shale	coaly, broken											
			200.00	.40	Coal	dull to dull with bright, broken stick to broken											
	199.99																
				.74	Shale	coaly, broken stick	35										
		200.60		.43	Coal	dull, broken to highly broken											
				.21	Coal	dull, shaley, broken to highly broken			↓								
	201.47																
				.22	Coal	dull, sheared, highly broken											
				.14	SST	dark gray, very carbonaceous, broken											

ALL LINEAR UNITS IN METRES

T = R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
= RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-26 CONTINUED

FILE No. 8A-212A
REVISED Nov. 1978

C[illegible] NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-26 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ DIPPING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS*
43			201.80	.10	Coal	dull, sheared, highly broken											
44				1.33	SST	medium gray, medium-grained, some carbonaceous partings, broken stick (Moose Mtn.)	41										
	203.17			1.55	SST	as above, stick	31										
	204.82			1.23	SST	as above, stick	37										
45				.37	SST	as above, broken											
	206.35			1.50	SST	as above, stick	38										
	207.87			1.52	SST	as above, stick	46										
	209.40			.41	SST	as above, medium scale crossbeds, stick	29										
46				1.09	SST	as above, stick											
	210.92					T.D.											

ALL LINEAR UNITS IN METRES

* :-R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
*RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-26 CONTINUED

FILE No BA-212 A
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DIRECTIONAL SURVEY

CM-80-27

NO.	CABLE DEPTH (M)	SLANT ANGLE *	SLANT ANGLE BEARING
	100	88	278
	216	86.2	295

* Measured From Horizontal

CROW NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	Corbin
AREA	Coal Mountain

DATE	
BEGIN	80.08.02
END	80.08.10

HOLE No. CM-80-27

HOLE PARTICULARS

LOCATION	5483397.33 N		
	669488.82 E		
ELEVATION	2052.0	HOLE BEARING (AZ°)	
TOTAL DEPTH	Drilled: 216	HOLE ANGLE (°)*	
	Logged: 216 m		

LOGGING

LOGS RUN	Gamma, Density, Caliper, Dir.
LOGGED BY	Davies
OTHER TESTS	

COAL CORING PERFORMANCE

CORE DIAMETER		HQ
TOTAL	CORE RECOVERED	53.9
	LENGTH CORED	62.0
	CORE RECOVERY	86.9 %

EXAMINATION

LOG USED	Full Suite
No. OF SEAMS SAMPLED	
EXAMINER (S)	Sharman/ Wershler
DATE	80.08.08

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS†
1		0	3.66			No Core											
	3.66			.97	Shale	dark gray, carbonaceous partings, broken to highly broken											
				.39	Shale	dark gray, carbonaceous debris, highly broken											
	5.02																
				.56	Shale	dark gray, carbonaceous partings, slick, iron-stained fractures, broken	37										
				.24	Coal	dark gray, some shaley pieces, powder tube											
				.26	Shale	dark gray, carbonaceous partings, broken to highly broken											
				.15	Shale	brown-gray, carbonaceous, iron-staining (orange), highly broken											
				.09	SLTST	medium gray, broken											
				.13	Shale	medium gray, silty, broken											
	6.55																
				.09	Shale	dark gray, carbonaceous plant fragments, silty, broken											
				.84	Shale	dark gray, highly fractured, a lot of iron-staining on fracture planes, some carbonaceous material, crumbly in places	36										
				.15	SLTST	medium gray, iron-staining on fracture planes, broken											
				.55	Shale	dark gray, very highly fractured and iron-stained, broken											
2																	
				.16	Shale	as above, broken											
	8.08			1.56	Shale	as above, broken to highly broken	46										

ALL LINEAR UNITS IN METRES

* : MEASURED FROM THE HORIZONTAL PLANE

† : • R &/OR S — GOLDER ASSOCIATES HARDNESS CODE

• RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27

FILE No. BA-211A
REVISED Nov. 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS*
2	9.60																
				1.73	Shale	dark gray, silty, with some interbeds, iron-staining, broken to broken stick	48										
	11.20																
				.73	Shale	as above, broken stick	52										
				.21	SLTST	medium gray, iron-stained, weathered, broken	46										
3				.56	SLTST	sandy interbeds, medium gray, iron-staining, broken	43										
	12.65																
				.09	SLTST	as above, broken											
				.61	Shale	medium to dark gray, silty interbeds, carbonaceous partings, some iron-staining, broken to broken stick	42										
				.91	SLTST	medium gray, iron-staining, some fine shale interbeds, fine sand laminae, broken stick	37										
	14.17																
				.41	SLTST	as above, broken stick to broken	34										
				1.07	Shale	silty interbeds, dark gray, iron-staining, broken to broken stick	43										
	15.54																
				.71	SLTST	as above, broken stick to broken											
4																	
				1.09	SLTST	as above, broken stick to broken	42										
	17.06																
				.89	Shale	dark gray, siltstone to fine sandstone, interbeds, some iron-staining, carbonaceous partings towards base, broken stick to broken	39										
		17.80	18.30	.19	Coal	powder, some carbonaceous shale pieces											
				.11	Shale	as above, broken											
	18.59																
				1.63	SH/SLST	medium gray, some iron-staining and carbonaceous plant debris on fracture surfaces, broken stick to broken	48										

ALL LINEAR UNITS IN METRES

1 = R8/OR 5 — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27 CONTINUED

FILE No. BA-212 A
REVISED Nov. 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
4	20.11			.14	SH/SLST	as above, broken											
5				.10	SH/SLST	as above, broken											
				1.46	Shale	dark gray, silty, coaly interbeds and carbonaceous layers near the top, some iron-staining, carbonaceous partings increase towards base, broken stick.	49										
				.13	SLTST	medium gray, shaley interbeds, carbonaceous partings, some iron-staining, some very small coaly splits, broken stick to broken	51										
	21.87			1.61	SLTST	as above, broken stick	46										
	23.46			.88	SLTST	as above, broken stick 43											
				.19	SLTST	as above, very fine interbedded sandstone, broken stick	54										
6				.42	SST	medium gray, fine to medium-grained, some calcite-filled fractures and iron-staining, many silty interbeds, stick to broken stick											
	24.99			1.05	SST	as above, stick	32										
				.52	SLTST	dark gray, carbonaceous plant debris, shaley interbeds, broken stick											
	26.51			1.68	SLTST	as above, a few sandstone interbeds, broken stick to broken	51										
	28.04			.36	SLTST	as above, broken stick											
7				1.12	Shale	silty, dark gray, some carbonaceous plant debris and iron-staining in fracture zones, slicks, broken sticks	43										
	29.56			1.59	Shale	as above, a few small coaly interbeds, broken stick	59										

ALL LINEAR UNITS IN METRES

† *RA/OR S — GOLDER ASSOCIATES HARDNESS CODE
*RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27 CONTINUED

FILE No. 8A-212 A
REVISED Nov 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
7	31.09																
				.67	Shale	as above, friable near base, broken to broken stick											
				.88	SLTST	medium gray, fine sandstone interbeds, slicks iron-staining, broken stick	48										
8																	
				.12	SLTST	as above, abundant iron-stains, broken stick											
	32.61																
				.13	SLTST	as above, broken stick to broken	42										
				1.04	SST	silty interbeds, abundant iron-stain, cross-beds, broken stick											
	33.98																
				1.62	SST	as above, broken stick to broken	44										
	35.50																
				1.16	SST	as above, broken stick	57										
9																	
				.47	Shale	silty, dark gray, carbonaceous plant debris, iron-staining, broken stick	41										
	37.06																
				.84	Shale	as above, broken stick	45										
				.66	SST	medium gray, fine-grained, silty interbeds, broken stick	50										
				.21	Shale	as above, broken											
	38.56																
				.09	Shale	as above, broken stick											
				1.42	SST	as above, broken stick											
	40.08																
				.45	Shale	dark gray, minor silt interbeds, broken stick											
10																	
				1.13	Shale	as above, broken stick	53										
	41.60																
				1.27	Shale	as above, a few small coaly and carbonaceous layers near the bottom, broken stick to highly broken	50										
				.33	SST	medium gray, fine to medium grained, iron-staining, cross-beds, silty interbeds, calcite-filled fractures, broken stick											

ALL LINEAR UNITS IN METRES

† = RA/OR S — GOLDER ASSOCIATES HARDNESS CODE
= RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27 CONTINUED

FILE No. BA-212 A
REVISED Nov. 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
10	43.12			.46	SST	as above											
				.93	Shale	dark gray, silt interbeds, fine sandstone interbed near base, broken stick	43										
	44.50			.07	Shale	as above, highly broken											
11				1.50	Shale	dark gray, silt interbeds, iron-staining, calcite-filled fractures, broken stick to broken	58										
	46.02			1.39	Shale	as above, calcite-filled fractures, broken stick	59										
				.13	Shale	as above, coaly, highly broken											
	47.55			.15	Coal	shaley, highly broken											
				1.07	Shale	dark gray, silt interbeds, calcite-filled fractures, some iron-stain, broken stick	56										
				.16	SLTST	medium gray, broken stick											
12				.13	SLTST	as above, broken stick											
	49.07			.91	Shale	as above, broken stick	54										
	49.98			.75	Shale	as above, broken stick	63										
				.60	SLTST	fine-grained, sandstone interbeds, calcite-filled fractures, broken stick											
	51.20			1.12	SLTST	as above, broken stick	34										
				.18	SST	silty, fine-grained, broken stick											
	52.42			.55	SST	as above, broken stick	45										
13				.88	SST	as above, stick to broken stick	49										

ALL LINEAR UNITS IN METRES

† = R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
= RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27 CONTINUED

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ MOTTING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS *
13	53.94			.61	Shale	silty, carbonaceous partings, calcite-filled fractures, broken stick											
				1.05	SLTST	some shale interbeds, calcite-filled fractures, carbonaceous layers, broken stick	58										
	55.47																
				1.09	Shale	as above, broken stick	55										
				.37	Shale	coaly, fractured, broken stick to broken											
	56.84																
				.11	Shale	as above, broken											
14																	
				1.03	Shale	dark gray, carbonaceous partings, slicks, broken stick	50										
	58.06																
				.15	Shale	as above, highly broken											
	58.52																
				.79	Shale	as above, broken	50										
				.31	SH/Coal	shale as above, highly broken, coal dull, powder											
	60.04																
		59.40	61.10	1.23	Coal	dull, broken	18										
	61.25																
		61.70		.42	Coal	dull, sheared, broken to highly broken	26										
				.14	Shale	dark gray, coaly, broken			63								
15																	
				.17	Shale	dark gray, carbonaceous partings, broken											
				.23	Coal	dull, powder											
	62.17																
				.22	Coal	dull, sheared, highly broken	40										
				.10	Coal	dull, shaley, broken											
				.16	Coal	dull, broken											
				.20	Coal	dull, shaley, broken											

ALL LINEAR UNITS IN METRES

T = RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
* RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27 CONTINUED

FILE No. 8A-212 A
REVISED Nov. 1978

WS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
15				.27	Coal	dull, powder			63								
	63.24																
				.35	Coal	dull, sheared, highly broken											
				.37	Coal	dull, broken	40										
				.33	Coal	dull, powder											
	64.61																
				.15	Coal	dull, broken											
				.87	Coal	dull, powder, tube											
	66.14																
				.82	Coal	as above											
16																	
				.05	Coal	as above											
				.10	Coal	dull, broken											
	67.36																
				.27	Coal	dull, shaley, broken to highly broken	24										
				.25	Coal	dull, sheared, highly broken											
				.20	Coal	dull, shaley, broken											
				.16	Coal	dull, powder, tube											
	68.27																
				.45	Coal	dull, broken											
				.51	Coal	dull, powder, tube											
	69.34																
				.22	Coal	dull, broken											
	70.10																
				.14	Coal	dull, powder											
				.30	Coal	bright, broken	36										
				.14	Coal	dull, broken											
	70.71																
				.19	Coal	dull, broken	27										
				.31	Coal	dull, shaley, broken stick											

ALL LINEAR UNITS IN METRES

† = R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
= RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27 CONTINUED

FILE No. BA-212A
REVISED Nov 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
16	70.71																
				.27	Coal	dull, highly broken			63								
	71.47																
				.43	Coal	dull, broken	29										
17																	
				.18	Coal	dull, broken stick	23										
				.09	Coal	dull with bright, broken stick											
				.71	Coal	dull, broken to highly broken											
	72.54																
				.19	Coal	dull, highly broken to powder											
				.78	Coal	dull, broken	35										
				.25	Coal	dull, broken stick											
	73.36																
				.61	Coal	as above, broken	31										
				.07	Coal	dull with bright, broken											
				.63	Coal	dull, broken											
				.25	Coal	dull, with bright, highly broken											
	75.28																
				.76	Coal	dull, broken	28										
18																	
				.34	Coal	dull, broken stick											
				.40	Coal	dull with bright, broken stick											
	76.80																
				.24	Coal	dull, highly broken											
				.05	Coal	dull, shaley, broken stick	24										
				.12	Coal	dull, highly broken											
				.08	Coal	dull, shaley, broken stick											
				.74	Coal	dull, broken											
				.15	Coal	dull, highly broken to powder											

ALL LINEAR UNITS IN METRES

† :RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27 CONTINUED

FILE No. BA-212 A
REVISED Nov 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
18																	
	78.02																
				.60	Coal	dull, broken	38		63								
				.14	Coal	dull and bright, broken											
				.08	Coal	dull, shaley, broken stick											
				.25	Coal	dull, broken											
				.34	Coal	dull, powder, tube											
	79.55																
				.10	Coal	dull, highly broken											
				.14	Coal	dull with bright, broken	24										
				.12	Coal	dull, powder											
				.42	Coal	dull with bright, broken											
19																	
				.35	Coal	as above, broken stick	25										
				.23	Coal	dull, broken to highly broken											
	80.77																
				.36	Coal	dull, broken	30										
				.29	Coal	dull, highly broken											
				.33	Coal	as above, broken											
				.15	Coal	as above, highly broken to powder											
	82.29																
				.25	Coal	dull, powder, tube											
				.45	Coal	dull, broken											
	83.36																
			83.35	.19	Coal	dull, powder, tube											
				.58	Shale	dark gray, carbonaceous and coaly partings, broken stick	25										
	84.12																
				.30	Shale	as above, broken	22										

ALL LINEAR UNITS IN METRES

† :•RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27 CONTINUED

FILE No. BA-212A
REVISED Nov 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
19	84.12																
		84.25		.22	Coal	dull, shaley, broken			64								
				.48	Coal	dull, broken											
20																	
				.19	Coal	as above, highly broken											
				.11	Coal	as above, powder											
	85.64																
			85.90	.44	Coal	dull, sheared, highly broken											
				.58	Shale	dark gray, carbonaceous and coaly partings, broken stick	18										
	86.71																
		86.60	86.90	.33	Coal	dull and bright, broken to highly broken											
				.76	Shale	dark gray, carbonaceous and coaly partings, slicks, broken stick	18										
	87.78																
				.58	Shale	as above, broken stick	22										
				.14	Coal	dull, powder											
				.49	Shale	dark gray, carbonaceous and coaly partings, broken stick											
	89.00																
				.44	Shale	dark gray, carbonaceous plant debris, slicks, broken stick	24										
21																	
				.97	Shale	dark gray, broken stick	28										
	90.52																
				1.56	Shale	as above, silty interbeds, calcite-filled fractures, slicks, broken stick to broken	20										
	92.05																
				1.48	Shale	as above, silty interbeds, stick	20										
	93.57																
				.25	Shale	as above, stick	22										
22																	
				1.23	Shale	dark gray, carbonaceous partings, broken stick	22										

ALL LINEAR UNITS IN METRES

† : •RA/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27 CONTINUED

FILE No. BA-212 A
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CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
22	95.09																
				1.58	Shale	as above, coaly partings, slicks, broken stick	20										
	96.62																
				1.51	Shale	as above, calcite-filled fractures, stick	15										
23																	
	98.14																
				.75	Shale	dark gray, calcite-filled fractures, carbonaceous and coaly partings, slicks, broken stick	22										
				.41	Shale	dark gray, calcite-filled fractures, carbonaceous partings, broken stick	34										
				.37	SLST/SH	shale - dark gray siltstone - gray, carbonaceous and coaly partings, broken stick	0(F)										
	99.66																
				.31	SLST/SH	as above, broken stick	0										
				1.27	Shale	dark gray, carbonaceous partings, some silty interbeds, slicks, broken stick	13										
	101.19																
				1.04	Shale	as above, calcite-filled fractures, broken stick	13										
24																	
				.62	Shale	dark gray, carbonaceous partings, slicks, calcite-filled fractures, broken stick											
	102.71																
				1.47	Shale	as above, stick	18										
	104.24																
				1.58	Shale	as above, silty near base, broken stick	5										
	105.76																
				.33	Shale	dark gray, carbonaceous partings, calcite-filled fractures, broken stick											
25																	
				1.06	Shale	dark gray, carbonaceous partings, slicks, calcite-filled fractures, broken stick											

ALL LINEAR UNITS IN METRES

† :-RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27 CONTINUED

FILE No BA-212 A
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CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORRIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
25																	
	107.29																
				.93	Shale	as above, broken stick	35										
		108.10		.42	Coal	dull, sheared, highly broken											
	108.81																
				.91	Coal	dull, broken	35		65								
				.11	Coal	dull, shaley, broken, stick			↓								
	109.82																
				.18	Coal	dull with bright, broken	28		66								
				.31	Coal	dull, highly broken											
				.25	Coal	dull with bright, broken											
26																	
				.28	Coal	dull, broken											
	110.80																
				.24	Coal	dull, broken											
				.23	Coal	dull, highly broken											
				.10	Coal	dull, powder											
				.27	Coal	dull, highly broken											
				.19	Coal	dull, powder											
	112.08																
				.53	Coal	dull, sheared, highly broken											
				.19	Coal	dull with bright, broken	30										
				.09	Coal	dull, highly broken to powder											
	113.28																
				.30	Coal	dull, highly broken											
				.63	Coal	dull, broken											
				.33	Coal	dull, sheared, highly broken to powder											
	114.46																
				.31	Coal	dull, shaley, broken to highly broken											
				.25	Coal	dull with bright, shaley, broken to highly broken											

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27 CONTINUED

FILE No BA-212 A
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CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CONTINUED CM-80-27

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	BEDDING ANGLE (°) ▲	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
26																	
	115.06																
				.17	Coal	dull with bright, highly broken	30		66								
				.36	Coal	dull, broken											
27																	
				.19	Coal	dull, broken stick	30										
				.35	Coal	dull and bright, broken stick											
				.24	Coal	dull with bright, broken stick											
	116.43																
				.43	Coal	dull, broken stick											
				.19	Coal	dull, shaley, broken stick											
			117.50	.51	Coal	dull, broken											
				.23	shale	dark gray, carbonaceous partings, some slicks broken											
	117.71																
				.70	Shale	as above, stick to broken stick	22										
		118.40	119.20	.24	Coal	bright with dull, broken											
				.48	Shale	dark gray, broken stick											
	119.18																
				.84	Shale	as above, carbonaceous plant debris, broken stick, slumps											
28																	
				.76	Shale	as above, coaly partings, broken stick to broken	9										
	120.07																
				.45	Shale	as above, broken stick	11										
				.19	Coal	dull, sheared, highly broken											
				.91	Shale	dark gray, carbonaceous partings, broken stick											
	122.22																
				1.57	Shale	as above, some coal partings, stick	26										

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CONTINUED CM-80-27

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CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS[1]
29																	
				1.45	Shale	dark gray, carbonaceous partings, siltstone interbeds, stick	22										
	125.27																
				1.45	Shale	as above, stick	28										
	126.80																
				1.42	Shale	dark gray, carbonaceous and coaly partings, broken stick	30										
30																	
				.10	Shale	as above, broken stick											
	128.32																
				1.52	Shale	dark gray, carbonaceous partings, silty interbeds, broken stick	30										
	129.84																
				1.65	Shale	as above, broken stick	29										
	131.37																
				.77	Shale	dark gray, carbonaceous partings, broken stick to broken	38										
31																	
				.95	Shale	as above, broken stick to broken	34										
	132.89																
				.12	Shale	as above, broken											
				.12	Coal	shaley, dull, sheared, highly broken											
				1.22	Shale	dark gray, carbonaceous and coaly partings, slicks, broken stick	26										
	134.32																
				1.53	Shale	as above, calcite-filled fractures, broken stick	25										
	135.79																
				.14	SLTST	medium gray, calcite-filled fractures, broken stick											
32																	
				1.39	SLTST	as above, broken stick											
	137.31																
				1.53	Shale	dark gray, carbonaceous and coaly partings, slicks, broken stick	29										

ALL LINEAR UNITS IN METRES

1 :•RA/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27 CONTINUED

FILE No. BA-212 A
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CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
32																	
	138.84																
				1.37	Shale	medium gray, carbonaceous and coaly partings, slumps, some calcite-filled fractures, broken stick	17										
33																	
				.22	Shale	dark gray, carbonaceous partings, slicks, highly broken											
	140.36																
				1.49	Shale	as above, slumps, stick to broken stick	25										
	141.88																
				1.56	Shale	as above, stick	22										
	143.41																
				.68	Shale	dark gray, carbonaceous and coaly partings, slicks, broken stick to broken	22										
34																	
				.85	Shale	as above, broken stick to broken	20										
	144.93																
				1.56	Shale	as above, broken stick	30										
	146.55																
				1.60	Shale	as above, broken stick to broken	22										
	148.15																
				.23	Shale	as above, broken stick											
35																	
				1.21	Shale	as above, stick to broken stick	20										
	149.66																
				.29	Shale	as above, broken stick	14										
				.13	Coal	dull, highly broken to powder											
				.90	Shale	dark gray, carbonaceous partings, stick											
	151.18																
				.43	Shale	as above, stick	20										
				.18	Coal	dull, sheared, highly broken											
				.79	Shale	dark gray, carbonaceous partings, broken stick to broken											

ALL LINEAR UNITS IN METRES

† :•RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27 CONTINUED

FILE No. BA-212 A
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CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27 CONTINUED

BOX No	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % o.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
	152.70																
36				1.56	Shale	dark gray, carbonaceous partings, slumps, broken stick to broken											
	154.23																
				1.43	Shale	as above, coaly partings, broken stick	22										
	155.76																
				.46	Shale	as above, broken stick											
				.19	Coal	dull, sheared, highly broken											
				.76	Shale	dark gray, carbonaceous partings, broken stick to broken	25										
37				.28	Shale	as above											
	157.23																
				1.47	Shale	as above, small coaly partings	30										
	158.80																
		158.60		.95	Coal	dull, broken			67								
	160.32																
				1.18	Coal	dull, some dull with bright, broken			68								
38				.22	Coal	dull, broken											
	162.00																
				.65	Coal	dull, slicked, broken, tube											
	163.37																
				.80	Coal	dull with bright, broken stick to broken											
	164.44																
			165.75	1.00	Coal	dull with bright, broken stick											
	165.81																
				.06	Shale	carbonaceous, slicked, broken											
		166.50		.15	Coal/SH	highly broken											
				.35	Shale	dark gray, broken stick											
				.12	Coal	powder with shale											

ALL LINEAR UNITS IN METRES

† :•RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27 CONTINUED

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CH-80-27 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % o.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS ?
	167.03																
39				.71	Coal	dull, some bright, broken			68								
	168.25																
				1.11	Coal	broken stick, dull, some bright											
	169.77																
				.50	Coal	as above, broken											
	170.53																
				1.00	Coal	dull with bright, broken	30										
	172.06																
40				.95	Coal	dull, some bright, broken stick			✓								
	173.13																
			173.70	.13	Coal	dull with bright, hard, broken											
				.32	Shale	black, massive, some coal wisps, broken stick	32										
	174.34																
		175.00	175.50	.75	Shale	as above, slicked, broken	30										
	157.55																
				.50	Shale	as above, slicked, broken											
		175.80		.25	Coal	dull, hard, broken											
			176.25	.28	Coal	dull, shaley, hard, broken											
	176.78																
41				.80	Shale	black, massive, broken stick, slicks	45										
				.06	Shale	as above, highly broken, coaly											
				.25	Shale	black, massive, slicks, broken											
	178.46																
				1.30	Shale	as above, broken stick and broken	38										
	179.89																
				1.38	Shale	as above, stick and broken stick	32										
42				.05	Shale	as above, broken, silty											

ALL LINEAR UNITS IN METRES

? = R&/OIL S — GOLDER ASSOCIATES HARDNESS CODE
= RQD — ROCK QUALITY DESIGNATION (%)
FF —— FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CH-80-27 CONTINUED

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CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % o.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
42																	
	181.36																
				.36	Shale	dark gray, carbonaceous and coaly partings, broken stick	28										
				1.24	SST	medium gray, fine-grained, carbonaceous partings, broken stick	18										
	182.88																
				1.56	SST	as above, broken stick	20										
	184.40																
				.81	SST	as above, broken stick											
43																	
				.69	SST	as above, calcite-filled fractures, broken stick	16										
	185.93																
				.98	SST	as above, abundant calcite-filled fractures, breccia, broken stick	26										
				.36	Shale	dark gray, carbonaceous partings, broken stick											
				.10	SST	medium gray, fine grain, carbonaceous partings, broken stick											
		187.40															
	187.46																
				.30	Shale	dark gray, carbonaceous and coaly partings, broken	34										
				.62	Coal	dull and bright, broken stick											
			188.20	.12	Coal	dull, powder											
	188.52																
				.99	Shale	dark gray, carbonaceous partings, broken stick to broken	30										
44																	
				.17	Shale	dark gray, carbonaceous partings, broken stick	36										
	189.58																
				1.57	Shale	as above, broken stick											

ALL LINEAR UNITS IN METRES

† :-RA/OR S — GOLDER ASSOCIATES HARDNESS CODE
+RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27 CONTINUED

FILE No. BA-212A
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CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
44																	
	191.11																
				.18	Shale	as above, slicks, broken	32										
				.09	Shale	dark gray, coaly, powder											
				.11	Shale	dull, shaley, highly broken											
				.12	Shale	dull, sheared, shaley, highly broken											
				.03	Shale	dark gray, carbonaceous partings, broken stick to broken	36										
	192.68																
				1.07	Shale	as above, broken stick	37										
45																	
		193.30		.66	Coal	dull and bright, broken stick to broken	35		C1								
	194.15																
				.16	Coal	dull, powder											
				.26	Coal	dull with bright, highly broken											
				.23	Coal	dull and bright, shaley, broken stick											
				.19	Coal	dull and bright, broken											
				.17	Coal	dull, powder											
	195.38																
				.11	Coal	bright with dull											
				.61	Coal	dull, sheared, highly broken											
				.16	Coal	dull, powder											
	196.99																
				.72	Coal	dull, highly broken to powder											
			197.70	.36	Coal	dull with bright, highly broken to powder											
	197.97																
				.53	Shale	dark gray, carbonaceous partings, slicks, broken stick											
46																	
				.24	Shale	as above, broken stick	20										

ALL LINEAR UNITS IN METRES

† :RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
*RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27 CONTINUED

FILE No. BA-212 A
REVISED Nov. 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
46																	
	198.73																
				.43	Shale	as above, broken stick											
				.78	Shale	dark gray, coaly, sheared, highly broken to powder											
				.31	Shale	dark gray, carbonaceous and coaly partings, broken stick											
	200.10																
				1.24	Shale	dark gray, carbonaceous partings, highly slicked, broken to highly broken											
				.23	Shale	dark gray, carbonaceous partings, broken stick											
		201.70															
	201.78																
				.15	Shale	as above, broken stick			70								
				.17	Coal	dull, broken stick											
				.41	Coal	dull, sheared, broken											
				.33	Coal	dull, shaley, broken	42										
47																	
				.11	Coal	dull, shaley, powder											
	203.00																
				.21	Coal	dull, broken											
				.38	Coal	dull, shaley, broken	39										
				.14	Coal	dull, broken to highly broken											
				.09	Coal	dull, shaley, broken											
				.10	Coal	dull, powder											
	203.91																
				.44	Coal	dull and bright, broken											
				.13	Coal	dull, broken											
			204.70	.36	Coal	dull, highly broken											
	205.13																
				.72	Shale	coaly, dark gray, highly slicked, broken											

ALL LINEAR UNITS IN METRES

† = R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
*RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27 CONTINUED

FILE No. BA-212 A
REVISED Nov. 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
47																	
		205.50		.35	Coal	dull with bright, shaley, broken stick to broken	41		70								
				.15	Coal	dull and bright, highly broken											
	206.35																
				.31	Coal	dull, broken	44										
				.18	Coal	dull and bright, broken stick											
				.33	Coal	dull with bright, shaley, broken stick											
				.17	Coal/SH	coal, dull, with bright; shale is dark gray, broken stick											
				.23	Coal	dull with bright, broken to highly broken											
48																	
			207.55	.25	Coal	dull with bright, broken stick to broken											
	207.87																
				.24	SH/Coal	coal is bright; shale is dark gray, broken stick											
				.31	Shale	coaly, dark gray, broken stick	45										
				.30	SH/Coal	shale as above; coal is bright, broken stick											
				.05	Coal	dull, powder											
				.33	SH/Coal	shale is dark gray, coal is bright, broken stick											
	209.09																
				.85	Shale	dark gray, carbonaceous and coaly partings, broken stick	45										
				.14	SLTST	medium gray, calcite-filled fractures, broken stick											
				.51	Shale	dark gray, carbonaceous and coaly partings, broken stick											
	210.62																
				(0.20)	Shale	as above, broken stick	51										
				.11	Coal	dull, sheared, highly broken											
				.84	Shale	dark gray, carbonaceous and coaly partings, a few siltstone beds in middle, broken stick											

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27 CONTINUED

FILE No. BA-212 A
REVISED Nov. 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
49																	
				.37	Shale	as above, siltstone beds absent, broken stick to broken	50										
	212.14																
				.36	Shale	coaly, dark gray, broken stick	52										
				.87	Shale	dark gray, carbonaceous partings, minor siltstone, broken stick											
		213.25		.32	Shale	coaly, dark gray, broken stick											
	213.66																
				.18	Coal	dull, shaley, broken											
			214.00	.47	Coal	dull with bright, broken stick											
				.07	Shale	dark gray, carbonaceous partings, broken											
				.20	Shale	coaly, dark gray, broken											
				.35	SST	medium gray, medium grained, coaly wisps, stick (Moose Mtn.)											
				.39	SST	as above, slicks, broken stick to broken											
	215.19																
				.63	SST	medium gray, medium grained, broken stick	37(p)										
50																	
				.92	SST	as above, broken stick	49										
	216.71					T.D.											

ALL LINEAR UNITS IN METRES

†:-R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27 CONTINUED

FILE No BA-212A
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DIRECTIONAL SURVEY

CM-80-27A

DEPTH (m)	SLANT ANGLE *	SLANT ANGLE BEARING
50	57.5	088
115	58.8	086

* Measured From Horizontal

CROW[illegible]EST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORE[illegible]
AREA	COAL MOUNTAIN

DATE		
BEGIN	80.08.11	
END	80.08.13	

HOLE No. CM-80-27A

HOLE PARTICULARS

LOCATION	5483397.24 N		
	669490.04 E		
ELEVATION	2052.0	HOLE BEARING (AZ°)	
TOTAL DEPTH	DRILLED: 117 m	HOLE ANGLE (°)*	
	LOGGED: 116.5 m		

LOGGING

LOGS RUN	GRN, DENS, CAL, DIR
LOGGED BY	Davies
OTHER TESTS	

COAL CORING PERFORMANCE

CORE DIAMETER		HQ
TOTAL	CORE RECOVERED	13.1
	LENGTH CORED	20.1
	CORE RECOVERY	65.2 %

EXAMINATION

LOG USED	Full Suite
No. OF SEAMS SAMPLED	
EXAMINER (S)	K.Sharman
DATE	80.09.02

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS†
						0 - 4.87 - No core											
1	4.87																
				.10	Shale	dark gray, some coaly partings, highly broken											
				.37	Shale	dark gray, iron-stained, broken											
				.36	Shale	dark gray, numerous coaly partings, iron-stain, slicks, broken											
				.09	Coal	shaley, some iron-stain, powder											
	6.09																
				.43	Shale	dark gray, iron-stain, carbonaceous and coaly partings, slicks, fissile, broken to highly broken											
				.19	Shale	dark gray, some fissile, iron-stain, carbonaceous and coaly partings, highly broken to powder											
				.56	Shale	dark gray, carbonaceous and coaly partings, some slicks, iron-stain, broken to highly broken											
	7.46																
				.71	Shale	as above, broken											
				.26	Shale	dark gray, iron-stain, fissile, slicks, highly broken											
				.08	Shale	as above, some silt, broken (not fissile)	28										
	8.53																
				.58	Shale	dark gray, iron-stain, silty, slicks, some coaly splits near bottom, broken											
2																	
				.29	Shale	as above, coaly wisps, carbonaceous partings, broken											
	9.44																
				.51	Shale	medium gray, silty, iron-stain, coaly wisps and carbonaceous partings, broken											

ALL LINEAR UNITS IN METRES

* : MEASURED FROM THE HORIZONTAL PLANE

† : •R &/OR S — GOLDER ASSOCIATES HARDNESS CODE

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27A

FILE No. BA-211A
REVISED Nov. 1978

S NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27A CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (+)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
2	9.44																
				.07	SH/Coal	fissile, broken											
				.16	Shale	silty, dark gray, iron-stain, carbonaceous partings, broken											
				.07	SH/Coal	powder (tube)											
				.51	Shale	dark gray, crumbly, broken stick to highly broken											
	10.82																
				1.47	Shale	dark gray, carbonaceous and coaly partings, slicks, broken stick to broken	48										
	12.19																
				.50	Shale	as above, broken stick to broken	46										
		12.40	12.70	.29	Coal	dull, broken stick											
				.23	Shale	dark gray, carbonaceous and coaly partings, broken stick											
3																	
				.54	Shale	as above, crumbly, broken	50										
	13.56																
				.20	Shale	as above, broken											
				.35	SLTST	medium gray-brown, iron-stain, broken stick											
				1.01	Shale	dark gray, minor iron-stain, broken	50										
	15.16																
				1.44	Shale	medium gray, crumbly, minor iron-stain, broken stick to broken											
	16.76																
				.43	Shale	light gray, silty, broken to highly broken											
4																	
				.36	Shale	as above, broken stick to highly broken											
				.76	SST	brown, fine grain, carbonaceous partings, iron stain, broken to highly broken	56										
	18.28																
				.97	Shale	medium gray, silty in bottom half, broken	58										

ALL LINEAR UNITS IN METRES

† :RS/OR S — GOLDER ASSOCIATES HARDNESS CODE
+RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27A CONTINUED

FILE No. BA-212 A
REVISED Nov. 1978

C ..75 NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27A CONTINUED

BOX No	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
4	18.28																
				.50	SLTST	medium gray, iron-stain, broken to highly broken											Fault?
	19.50																
				1.15	Shale	medium gray, silty, carbonaceous partings, broken stick to broken	70										
	20.57																
				.56	Shale	as above, iron-stain, broken stick											
5																	
				.67	SLTST	medium gray, fine sandstone interbeds, broken stick	15										
	21.64																
				.27	SLTST	dark gray, broken stick	70										
				1.00	Shale	dark gray, carbonaceous and coaly partings, broken stick to highly broken											
	23.16																
				1.57	Shale	dark gray, silty, broken stick	55										
	24.68																
				.74	SST	medium gray, very fine grain, broken stick	55										
6																	
				.78	SLTST	medium gray, slicks, iron-stain, coaly parting near top, broken stick	50										
	26.21																
				.25	SST	light gray, fine-grained, broken											
				.91	Shale	dark gray, carbonaceous and coaly partings, some slicks, broken	50										
	27.43																
				.63	Shale	as above, broken stick to broken	49										
				.17	Shale	as above, highly broken to powder											
	28.49																
				.96	Shale	as above, silty at base, broken stick											
				.50	SST	light gray, fine grain, carbonaceous partings broken stick	54										

ALL LINEAR UNITS IN METRES

† •RB/DR 5 — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27A CONTINUED

FILE No. BA-212 A
REVISED Nov. 1978

C...WS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27A CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS ?
7																	
	30.02																
		33.10	33.50			Coal indicated on log											
				.15	SST	as above, broken stick											
				1.74	Shale	medium gray, silty, iron-stain, broken											
	31.39																
				1.60	Shale	as above, broken											
	32.91																
				.34	Shale	as above, broken	53										
				.37	Coal	dull, highly broken											
				.13	Shale	dark gray, carbonaceous partings, iron-stain, broken											
	33.83																
				.38	Shale	as above, carbonaceous and coaly partings, broken											
8																	
				.33	Shale	dark gray, carbonaceous partings, slicks, broken stick											
				.57	SST	light gray, fine grain, cross-beds, broken stick	46										
	35.05																
				.93	SST	as above, carbonaceous partings, iron-stain, broken stick	43										
	36.12																
				1.10	SST	as above, broken stick	46										
				.17	SST	as above, iron-stain, highly broken											Fault?
	37.49																
				.79	SST	light gray, fine grain, carbonaceous partings, broken stick to broken	35										
				.45	SLTST	medium gray, shaley at base, iron-stain, broken											
9																	
				.28	SLTST	as above, slicks, broken to highly broken											Fault?

ALL LINEAR UNITS IN METRES

? : •B&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27A CONTINUED

FILE No. BA-212 A
REVISED Nov. 1978

JWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27A CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ MEDIAN ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
9	39.01																
				.62	SLTST	as above, carbonaceous partings, broken stick											
				.22	SST	medium gray, fine grain, iron-stain, slicks, broken											Fault?
				.33	Shale	medium gray, highly broken to powder											Fault?
	40.23																
				1.04	Shale	medium gray, silty, iron-stain, highly broken to powder	20										
	44.14																
				.99	Shale	as above, slicks, broken stick to broken											
				.14	Coal	dull, shaley, powder											
	42.67																
				.27	Shale	coaly, highly broken											
				.50	Shale	very coaly, highly broken											
10																	
		43.10	43.40			Coal indicated on log											
				.09	Shale	as above, highly broken to powder											
	43.58																
				.85	SLTST	dark gray, fine sandstone in middle, calcite-filled fractures, broken stick	35										
				.09	Coal	dull, powder											
	44.50																
				.58	Shale	dark gray, coaly, slicks, broken to highly broken											
		45.20	45.60	.17	Coal	dull, powder											
	45.72																
				.16	Shale	dark gray, carbonaceous and coaly partings, broken stick	50										
		46.10	46.40			Coal indicated on log											
	46.02																
				.19	Shale	dark gray, carbonaceous and coaly partings, slicks, broken											
				.07	Coal	dull, highly broken											

ALL LINEAR UNITS IN METRES

†:•RG/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27A CONTINUED

FILE No BA-212A
REVISED Nov 1978

C. /S NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27A CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
10	46.13																
				1.23	Shale	dark gray, carbonaceous and coaly partings, silty at base, broken stick to broken	58										
	47.85																
				.54	SLTST	medium gray, some slicks, calcite-filled fractures, broken stick to broken	60										
11																	
				.71	SLTST	medium gray, broken stick to broken	54										
	49.07																
				.72	SLTST	as above, broken stick	51										
				.91	Shale	dark gray, carbonaceous and coaly partings, slicks, calcite-filled fractures, broken											
	50.59																
				1.44	Shale	as above, silty in middle, broken stick to broken	44										
	52.12																
				.35	Shale	as above, broken stick to broken	52										
12																	
				1.15	Shale	dark gray, carbonaceous and coaly partings, a few 3 cm coaly beds, broken stick to broken	40										
	53.64																
				1.12	Shale	dark gray, carbonaceous and coaly partings, slicks, broken	50										
				.24	SLTST	medium gray, calcite-filled fractures, broken stick											
				.10	Shale	dark gray, carbonaceous partings, broken											
	55.16																
				.66	Shale	as above, coaly partings, broken to highly broken	55										
				.13	SLTST	medium gray, calcite-filled fractures, broken stick											
				.20	Shale	dark gray, carbonaceous and coaly partings, highly broken											
	56.38																
				.38	Shale	as above, broken stick to broken											

ALL LINEAR UNITS IN METRES

† •R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27A CONTINUED

FILE No. BA-212 A
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CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27A CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
13				1.02	Shale	as above, broken stick to broken	58										
	57.91																
				.28	Shale	as above, broken											
				.10	Coal	dull, powder											
				.20	Shale	dark gray, carbonaceous and coaly partings, broken											
		58.45		.49	Coal	dull, broken											
	59.58																
				.82	Coal	dull, highly broken to powder											
	61.11																
				.80	Coal	dull, broken to highly broken											
	62.17																
				.17	Coal	dull, highly broken											
				.30	Coal	dull, powder, tube											
14																	
				.31	Coal	dull, broken											
	63.09																
			63.20	.28	Coal	dull, broken											
				.24	Shale	coaly, highly broken											
				.19	Coal	dull, highly broken											
				.26	Shale	dark gray, carbonaceous and coaly partings, broken stick to broken											
	64.31																
				.98	Shale	dark gray, carbonaceous and coaly partings, slicked, broken stick	48										
				.19	Coal	dull, powder											
	65.8																
				.48	Shale	dark gray, silty, carbonaceous partings, slicks, calcite-filled fractures, broken stick	42										
				.26	Coal	dull, highly broken											
				.27	Coal	dull, powder											

ALL LINEAR UNITS IN METRES

† :*R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
*RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27A CONTINUED

C .S NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27A CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
14																	
	67.20																
				.44	Coal	dull, broken to highly broken			76								
				.26	Coal	dull, highly broken to powder											
15																	
	68.73																
				.47	Coal	dull, broken to highly broken											
				.21	Coal	dull, powder											
				.43	Shale	dark gray, silty, calcite-filled fractures, slicks, broken stick	10										
	70.31																
				.09	Coal	dull, powder											
				.63	Shale	dark gray, carbonaceous and coaly partings, broken											
				.31	Shale	as above, highly broken to powder											
	71.32																
				1.63	Shale	as above, slicks, broken stick to broken											
	72.99																
				.56	Shale	as above, slicks, broken											
16																	
				.20	Shale	as above, slicks, highly broken											
				.12	Coal/SH	dull, shaley, powder, shale is dark gray, powder											
	74.37																
		74.50		.35	Coal	as above, powder			77								
	75.89																
				.45	Coal	dull, powder			78								
	76.80																
				.71	Coal	dull, powder											
	78.02																
				.67	Coal	dull, powder, tube											
	79.55																
						No Core											

ALL LINEAR UNITS IN METRES

† :-RS/OR S — GOLDER ASSOCIATES HARDNESS CODE
-RQD — ROCK QUALITY DESIGNATION (%)
FF —— FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27A CONTINUED

FILE No BA-212 A
REVISED Nov 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27A CONTINUED

BOX No	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ MODING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS*
16	80.77																
			81.60			No Core											
	81.68																
				.48	Shale	dark gray, carbonaceous and coaly partings, slicks, broken											
	82.29																
				.45	Shale	as above, broken											
	82.90																
				.52	Shale	as above, broken											
17																	
				.54	Shale	as above, broken											
	84.12																
				.84	Coal/SH	coal is dull, highly broken; shale is dark gray, carbonaceous partings, broken											
	85.64																
		85.70				Coal indicated on log											
				.26	Coal	dull, shaley, highly broken											
				.65	Coal	dull, powder											
	87.17																
		88.80		1.08	Coal	dull, sheared, highly broken to powder											
	88.69																
				.10	Shale	dark gray, carbonaceous partings, highly broken	38		79								
				.47	Coal	dull, powder											
18																	
				.32	Coal	dull, powder											
	90.22																
			91.40	.63	Coal	dull, powder, tube											
				.05	Shale	black, coaly, broken											
				.23	Coal	dull, powder											
	91.28																
		92.00		.20	Coal	dull, powder											
				.04	Shale	black, coaly, broken											

ALL LINEAR UNITS IN METRES

* : R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
• RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27A CONTINUED

FILE No. BA-212 A
REVISED Nov 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27A CONTINUED

BOX No.	DEPTH at Top of Box	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS [1]
18																	
			92.30	.39	Coal	dull, highly broken to powder			79								
	92.50																
				.14	Shale	dark gray, carbonaceous and coaly partings, broken											
				1.20	SST	medium gray, medium-grained, coaly wisps, slicks, broken stick to broken	46										Mouse Mtn.SS
	93.66																
				.92	SST	medium gray, medium-grained, coaly wisps, broken stick to broken											
19																	
				.28	SST	as above, broken stick											
	94.79																
				1.31	SST	as above, broken stick	38										
	96.16																
				.28	SST	medium gray, medium-grained, a few slicks, broken											
	96.46																
				1.55	SST	as above, broken stick	34										
	97.84																
				.28	SST	as above, broken stick	23										
20																	
				1.26	SST	as above, stick	20										
	99.36																
				1.49	SST	as above, stick	20										
	100.88																
				1.58	SST	as above, stick	22										
	102.41																
21																	
				1.49	SST	as above, stick	25										
	103.93																
				1.45	SST	medium gray, medium-grained, calcite-filled fractures, slicks, broken stick	19										

ALL LINEAR UNITS IN METRES

1 :•RB/DRS — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27A CONTINUED

FILE No BA-212 A
REVISED Nov 1978

CRO..S NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-27A CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
21																	
	105.46																
				1.35	SST	as above, slicks absent, broken stick	20										
22																	
				.22	SST	medium gray, medium-grained, broken stick	22										
	106.98																
				1.50	SST	as above, a few calcite-filled fractures, stick	15										
	108.50																
				1.55	SST	as above, stick, cross-beds	40										
	110.03																
				1.15	SST	as above, stick	55										
23																	
				.40	SST	as above, stick											
	111.55																
				1.46	SST	as above, greenish at base, calcite-filled fractures at base, stick											Fault
	113.08																
				1.54	SST	as above, greenish alteration at top, slicks, calcite-filled fractures, broken stick to highly broken											Fault
	114.60																
				.44	SST	medium gray, medium-grained, slicks, calcite-filled fractures, breccia at top, broken stick to broken											Fault
				.38	SST	medium gray, medium-grained, broken stick	70										
24																	
				.70	SST	as above, calcite-filled fractures, broken stick	76										
	116.12																
				1.15	SST	as above, highly slicked, calcite-filled fractures, broken stick to broken	20										
	117.04																
				1.50	SST	as above, broken stick to highly broken	64										
	118.56					T.D.											

ALL LINEAR UNITS IN METRES

†:HR&/OR S — GOLDER ASSOCIATES HARDNESS CODE
*RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-27A CONTINUED

FILE No. BA-212 A
REVISED Nov 1978

DIRECTIONAL SURVEY

CM-80-28A

DEPTH (M)	SLANT ANGLE *	SLANT ANGLE BEARING (MAGNETIC)
0	61.74	43.7 (Casing)
15	66.12	71.4 (Casing)
30	61.54	71.4
45	62.76	69.2
60	59.50	68.6
75	60.57	70.5
90	61.62	68.2
105	62.36	65.9
120	62.76	67.3
135	63.12	66.7
150	64.02	66.2
165	64.19	67.4
169	63.87	71.0

* Measured From Horizontal

CROWS ST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBI:
AREA	COAL MOUNTAIN

DATE	
BEGIN	80.09.09
END	80.09.13

HOLE No. CM-80-28A

SH. 1 OF 14

HOLE PARTICULARS

LOCATION	5483665.49 N		
	669403.86 E		
ELEVATION	2025.1	HOLE BEARING (AZ°)	
TOTAL DEPTH	DRILLED: 169.3	HOLE ANGLE (°)*	
	LOGGED: 168.5		

LOGGING

LOGS RUN	GRN,FE,SDL,DIR,CAL
LOGGED BY	Roke
OTHER TESTS	

COAL CORING PERFORMANCE

CORE DIAMETER		HQ
TOTAL	CORE RECOVERED	34.2
	LENGTH CORED	65.2
	CORE RECOVERY	52.4 %

EXAMINATION

LOG USED	Full Suite
No. OF SEAMS SAMPLED	
EXAMINER (S)	K. Sharman
DATE	80.09.17

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ DIPPING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS †
1	12.19																
		12.50		.12	Coal	dull, shaley, and broken			88								
				.59	Coal	dull with bright, broken stick to broken	53										
	13.10																
				.08	Coal	dull with bright, broken stick											
				.07	Coal	dull with bright, powder											
				.08	Coal	as above											
				.12	Shale	coaly, highly broken			✓								
				.20	Coal	dull, broken to highly broken			89								
	14.02																
				.26	Coal	dull, broken to highly broken											
				.11	Coal	dull, shaley, broken											
				.24	Shale	black, coaly, broken stick	43										
				.07	Coal	dull, powder											
				.20	Coal	dull, sheared, highly broken											
	15.55																
						No core (coal indicated on log)											
	18.59																
				.45	Coal	dull, sheared, broken to highly broken	54										
				.16	Coal	dull with bright, sheared, broken											
	20.11																
						No core											
	21.54																
				.42	Coal	dull, sheared, broken to highly broken											
				.60	Coal	dull with bright, highly broken to powder											

ALL LINEAR UNITS IN METRES

* : MEASURED FROM THE HORIZONTAL PLANE

† : • R &/OR S — GOLDER ASSOCIATES HARDNESS CODE

• RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-28A

FILE No. BA-211A
REVISED Nov. 1978

L ...S NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-28A CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	BEDDING ANGLE (°) ▲	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
2																	
	23.16																
			24.30	.32	Coal	dull, powder			89								
	24.59																
				.61	Coal	dull, powder											
	25.45																
		25.70	26.20	.65	Coal	dull, sheared, highly broken to powder, few small pieces shale wash											
	26.36																
				.78	SH/Coal	shale is dark gray, carbonaceous; coal is dull, highly broken to powder											
	27.73																
				1.10	Shale	dark gray, slicks, carbonaceous and coaly partings											
	29.26																
				.15	Shale	as above, broken											
				.23	SH/Coal	shale is dark gray; coal is dull; highly broken to powder											
				.19	Shale	coaly, broken	50										
3																	
				.16	Shale	as above, broken											
				.46	Shale	as above, highly broken to powder											
	30.78																
		29.70	31.90	.70	Coal	dull, sheared, highly broken			90								
	32.31																
				.21	Shale	dark gray, carbonaceous, broken to highly broken											
		32.80		.30	Coal	dull, sheared, highly broken to powder			91								
	33.83																
			34.40	.69	Coal	as above											
	34.74																
				.19	Shale	coaly, dark gray, highly broken to powder											
				.19	Shale	dark gray, carbonaceous, broken											
				.24	Shale	coaly, dark gray, slicks, highly broken											

ALL LINEAR UNITS IN METRES

† :+R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
+RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-28A CONTINUED

FILE No. 8A-212 A
REVISED Nov. 1978

C. ..S NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-28A CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % o.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
3	35.81																
				.34	Shale	carbonaceous, some wash, broken to highly broken											
				.18	Shale	coaly, dark gray, highly broken to powder											
4																	
	36.88																
		36.70		.56	Coal	dull, sheared, highly broken			92								
			37.90	.16	Coal	dull, powder			93								
	38.40																
				.17	Shale	dark gray, carbonaceous, slicks, broken											
	39.01																
				.45	Shale	as above, broken											
				.39	Shale	as above, highly broken to powder											
	39.93																
				.78	Shale	as above, broken stick to broken											
	41.45																
				.31	Shale	dark gray, carbonaceous, slicks, broken stick	38										
				.21	Shale	as above, powder											
	42.98			.72	Shale	as above, broken to highly broken, some pieces of shale wash											
5																	
	44.50																
				.59	Shale	as above, powder											
	46.02																
				.78	Shale	as above, powder											
	47.85																
				.71	Shale	as above, wash, highly broken											
				.48	Shale	as above, powder											
	49.07																
				.70	Shale	as above, highly broken to powder											
	50.90																
		50.00		.34	Coal	dull, powder			93								

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF —— FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-28A CONTINUED

FILE No. BA-212 A
REVISED Nov 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-28A CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % o.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
5																	
				.31	Shale	dark gray, coaly, highly broken to powder			93								
				.24	Coal	dull, broken to highly broken			↓								
	52.12																
				.47	Coal	dull, sheared, highly broken to powder			94								
6																	
				.40	Coal	dull, powder											
	53.64																
				.61	Coal	dull, sheared, highly broken											
				.23	Coal	dull, sheared, powder											
	55.16																
			55.40	.23	Coal	as above, broken stick to broken											
				.36	Shale	dark gray, carbonaceous, coaly partings, broken stick	66										
		55.70		.32	Coal	dull, sheared, highly broken to powder											
	56.69																
				.32	Coal	as above, broken											
				.02	Shale	dark gray, carbonaceous											
				.36	Coal	dull, sheared, highly broken	49										
				.08	Shale	coaly, broken											
				.07	Coal	dull, shaley, broken											
	58.21																
				.55	Coal	dull, sheared, broken to highly broken											
				.15	Coal	as above, powder											
7																	
	59.34																
			60.90	.12	Coal	dull, powder, dark gray shale wash			↓								
	61.26																
				.62	Coal/SH	highly broken to powder											
	62.78																
				.28	Shale	dark gray, highly broken, wash											

ALL LINEAR UNITS IN METRES

† = RA/OR S — GOLDER ASSOCIATES HARDNESS CODE
• RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-28A CONTINUED

FILE No. BA-212 A
REVISED Nov. 1978

C. .S NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-28A CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
7																	
		63.30		.22	Coal	dull, sheared, highly broken											
				.13	Coal	dull, powder											
	64.31																
			64.70	.29	Coal	dull, sheared, highly broken to powder											
				.47	Shale	dark gray, coaly, carbonaceous and coaly partings, broken	29										
	65.83																
				.65	Shale	dark gray, carbonaceous, slicks, broken											
	66.75																
				.36	Shale	as above, broken stick to broken											
				.05	Shale	coaly, powder											
	67.66																
				.15	Shale	dark gray, carbonaceous, wash at top, broken stick to broken											
8																	
				1.08	Shale	dark gray, carbonaceous, slicks, broken stick to broken											
	68.88																
				1.41	Shale	broken stick to broken, dark gray, as above											
	70.10																
				.25	Shale	as above, broken											
				.09	Shale	dark gray, coaly, highly broken											
				.38	Shale	dark gray, carbonaceous, slicks, broken											
				.25	Shale	as above, highly broken to powder											
	71.48																
				.42	Shale	as above, broken stick to broken, wash at top											
				.20	Shale	coaly, sheared, highly broken											
9																	
				.32	Shale	as above, highly broken to powder											
	72.69																
				.65	Shale	dark gray, carbonaceous, slicks, broken	74										

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-28A CONTINUED

FILE No. BA-212 A
REVISED Nov. 1978

NEWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-28A CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
9																	
	73.46																
				.68	Shale	dark gray, carbonaceous, slicks, broken stick											
				.58	Shale	dark gray, coaly, slicks, broken to highly broken											
	74.98																
				.07	Coal	dull, sheared, highly broken											
				.25	Shale	dark gray, carbonaceous, slicks, slightly silty, broken	51										
				.48	Shale	as above, highly broken to powder											
	76.50																
				.80	Shale	as above, broken stick to broken											
				.12	Shale	as above, powder											
10																	
	77.72																
				.25	Shale	as above, highly broken, wash											
				.53	Shale	as above, broken	67										
				.18	Shale	as above, powder											
	78.64																
				.83	Shale	as above, wash, broken to powder											
	79.55																
				.65	Shale	as above, wash, broken to powder											
	80.77					No core (Triconed)											
	85.65	85.60	88.80			No core (Coal indicated on log)											
	88.39																
				1.17	SLTST	medium gray, very fine sandstone interbeds, broken stick, calcite-filled fractures	30										
	89.92																
				.07	Shale	dark gray, carbonaceous, slicks, broken			95								
		90.00		.18	Coal	dull, shaley, broken											
11																	
				.16	Coal	dull with bright, shaley, broken	30										

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-28A CONTINUED

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-28A CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % (residual)	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
11																	
				.26	Shale	dark gray, carbonaceous, slicks, broken			95								
				.24	Coal	dull, highly broken to powder											
	91.74																
				.38	Coal	dull, sheared, broken											
			92.70	.18	Coal	as above, powder											
				.28	Shale	medium gray, broken to highly broken											
				.16	Coal/SH	coal is dull with bright, broken; shale is dark gray, carbonaceous, broken											
	93.27																
				.53	Shale	dark gray, silty interbeds, broken stick to broken	20										
				.77	Shale	silty, medium gray, very fine sandstone interbeds, slicks, broken stick	15										
				.33	Shale	medium gray, slicks, slightly silty, broken											
	94.79																
				.14	Shale	as above, broken											
		94.90		.31	Coal	dull, sheared, highly broken to powder											
				.08	Shale	coaly, highly broken to powder											
				.23	Coal	dull, highly broken to powder											
	96.32																
				.10	Shale	coaly, slicks, highly broken											
				.14	Coal	dull, sheared, highly broken to powder											
12																	
				.08	Coal	as above, highly broken to powder											
			96.70	.12	Coal	dull, shaley, broken to highly broken											
				.51	Shale	medium gray, silty interbeds, carbonaceous partings, broken stick	75										
				.09	Shale	coaly, broken											
				.14	Shale	dark gray, carbonaceous, broken											

ALL LINEAR UNITS IN METRES

† :RR/OR S — GOLDER ASSOCIATES HARDNESS CODE
*RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-28A CONTINUED

FILE No 8A-212A
REVISED Nov. 1978

NS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-28A CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
12				.09	Coal	shaley, dull with some bright, highly broken											
				.17	Shale	dark gray, carbonaceous, slicks, coaly interbed, broken stick											
	97.84			1.54	Shale	as above, slightly silty, calcite-filled fractures, broken stick to broken	74										
	99.36			1.24	Shale	dark gray, carbonaceous, slicks, coaly interbeds, broken stick to broken	65										
	100.88			.06	Shale	as above, abundant slicks, highly broken											
				.17	Shale	dark gray, carbonaceous slicks, broken stick											
13				.86	Shale	as above, broken stick to broken, coaly, shaley interbeds											
	102.41			1.03	Shale	as above, broken stick to broken	55										
	103.93			.85	Shale	dark gray, carbonaceous, abundant slicks, broken	47										
	105.15			.39	Shale	medium gray, few coaly interbeds, broken stick	26										
				.64	Shale	dark gray, carbonaceous, slicks, broken to highly broken											
				.20	Shale	medium gray, thin coaly partings, broken											
14	106.37			.08	Shale	dark gray, carbonaceous slicks, broken											
				.20	Shale	as above, abundant slicks, highly broken											
				.42	Shale	as above, abundant slicks in middle, broken to highly broken											
	106.98			.94	Shale	as above, abundant slicks, broken	30										

ALL LINEAR UNITS IN METRES

† :-R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-28A CONTINUED

FILE No. 8A-212A
REVISED Nov. 1978

C...WS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-28A CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
14	106.98																
		107.80	108.80			Coal indicated on log											
	108.50																
				.17	Shale	as above, broken stick											
		109.50		.13	Coal	dull, sheared, highly broken											
				.16	Shale	dark gray, carbonaceous, slicks, broken stick											
				.12	Coal	dull, powder											
				.16	Shale	coaly, broken											
				.06	Coal	dull, highly broken to powder											
				.03	Shale	dark gray, carbonaceous, broken											
				.22	Coal	dull, highly broken											
				.13	Shale	coaly, broken											
	110.03																
				1.30	Coal	dull with minor bright, abundant slicks, broken stick to broken			96								
15																	
				.34	Coal	as above, highly broken to powder											
	111.55																
				.89	Coal	dull, highly sheared, highly broken to powder			97								
	113.08																
				.82	Coal	as above, highly broken to powder											
				.08	Shale	medium gray, coaly parting, broken stick											
	115.82																
				.10	Coal	shaley, slicks, broken stick											
				.45	Coal	dull, a little shaley, sheared, broken to broken stick											
	116.59																
				.19	Coal	dull, sheared, powder											
				.12	Coal	as above, broken stick, slicks											
				.04	Coal	as above, powder											

ALL LINEAR UNITS IN METRES

† :•RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-28A CONTINUED

FILE No. BA-212 A
REVISED Nov 1978

WS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-28A CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	♣ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
16																	
				.37	Coal	as above, powder			97								
	117.80																
			118.40	.40	Coal	as above, highly broken to powder											
				.98	Shale	coaly partings, dark grey, broken stick	37										
	119.17																
		119.20		.23	Coal	shaley, dull, sheared, broken to highly broken											
				.40	Coal	dull, sheared, highly broken to powder											
	120.70																
				.33	Coal	dull, sheared, highly broken											
				.19	Coal	dull, shaley, sheared, broken stick	37										
				.36	Coal	dull, sheared, highly broken to powder											
	122.22																
				.69	Coal	dull, sheared, highly broken to powder											
	123.74																
17																	
				.64	Coal	as above, highly broken											
	125.27																
				.37	Coal	as above, broken											
				.29	Coal	dull with bright, broken											
				.08	Coal	as above, powder											
	126.64																
				.11	Coal	shaley, sheared, dull, slicks, broken											
				.27	Coal	dull with a little bright, shaley, broken											
			128.20	.31	Coal	dull, sheared, highly broken to powder			↓								
	128.16																
				.98	Shale	dark gray, carbonaceous, abundant slicks, highly broken to powder											
	129.69																
		130.20	131.30	.65	Coal	dull, sheared, highly broken to powder											

ALL LINEAR UNITS IN METRES

† :•RB/OB S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

♣ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-28A CONTINUED

FILE No. BA-212 A
REVISED Nov 1978

WS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-28A CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
18	131.21																
				.77	Shale	dark gray, carbonaceous, some coaly partings, slicks, broken stick to broken	36										
	131.97																
				1.25	Shale	as above, broken stick to broken	40										
	133.19																
				1.04	Shale	dark gray, carbonaceous, some coaly partings, slicks, broken stick, a few calcite-filled fractures	53										
	134.41																
				.58	Shale	dark gray, carbonaceous, some coaly partings, slicks, broken											
				.31	Coal	dull, broken to highly broken			98								
19																	
				.08	Shale	coaly, broken											
	135.63																
		135.00		.54	Coal	dull, sheared, broken to highly broken											
				.23	Coal	dull, powder											
	137.16																
				.13	Coal	dull, sheared, broken to highly broken											
				.09	Shale	dark gray, carbonaceous, broken											
				.22	Coal	dull, sheared, broken to highly broken											
				.34	Coal	dull, highly broken to powder											
	138.68																
				.61	Coal	dull, sheared, highly broken											
			140.70	.25	Coal	dull, sheared, powder											
	140.20																
				.30	Shale	coaly, broken											
		141.25	141.90	.30	Coal	dull, powder											
				.05	Shale	coaly, broken											
	141.73																
				.24	Shale	as above, broken, wash											
				.40	Coal	shaley, sheared, dull, broken to highly broken											

ALL LINEAR UNITS IN METRES

† :*RB/OR $ — GOLDER ASSOCIATES HARDNESS CODE
*RQD — ROCK QUALITY DESIGNATION (%)
ff — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-28A CONTINUED

FILE No. BA-212A
REVISED Nov. 1978

C .S NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-28A CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
19																	
				.03	Shale	dark gray, carbonaceous, slicks, broken											
		143.20	143.60	.11	Coal	dull, powder											
20																	
	143.25																
				1.53	Shale	dark gray, carbonaceous, slicks, broken stick to broken	32										
	144.78																
				.88	Shale	as above, broken stick to broken											
	145.99																
				.95	Shale	as above, broken stick to broken	45										
	147.32																
				.21	Shale	as above, some coaly partings, broken	48										
				.59	Shale	coaly, broken stick to broken											
21																	
				.20	Shale	as above, broken											
		147.75		.06	Coal	dull with bright, highly broken											
	148.43																
				.51	Coal	dull with bright, broken stick to broken	40		99								
				.27	Coal	dull, shaley, broken stick to broken											
				.14	Shale	coaly, broken stick to broken											
				.42	Coal	dull with bright, broken to highly broken											
	149.65																
				.32	Coal	dull with bright, broken											
				.07	Shale	coaly, broken											
			150.20	.11	Coal	dull, sheared, highly broken			✓								
				.07	Shale	coaly, broken											
				.73	Shale	dark gray, carbonaceous, broken stick to broken	52										
	151.18																
				.49	Shale	as above, broken to powder											

ALL LINEAR UNITS IN METRES

† :•RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-28A CONTINUED

FILE No. BA-212 A
REVISED Nov 1978

CRAIGMONT NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CH-80-28A CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
21	151.18																
				.73	Shale	dark gray, silty, carbonaceous, very fine sandstone interbeds at top, broken stick to stick	42										
22																	
	152.70																
				.61	Shale	as above, calcite-filled fractures, broken stick	40										
		153.50		.68	Coal	dull, shaley, broken stick to highly broken			100								
	154.22																
				.06	Coal	dull, shaley, broken											
				.23	Shale	coaly, broken											
				.25	Coal	dull with bright, sheared, broken stick to broken											
				.29	Coal	dull, shaley, broken stick to broken											
				.38	Coal	dull, broken											
				.08	Coal	dull, powder											
				.26	Coal	dull, shaley, highly broken to powder											
	155.75																
				.67	Coal	dull, sheared, broken stick to broken											
				.05	Shale	coaly, broken											
				.13	Coal	dull, sheared, highly broken to powder											
				.16	Shale	coaly, broken											
				.12	Coal	dull with bright, sheared, highly broken to powder											
				.04	Shale	coaly, broken											
	156.97																
			157.30	.21	Coal	dull, broken											
23																	
				1.05	Shale	dark gray, slicks, broken stick to broken											
				.33	SST	light gray, fine grain, numerous carbonaceous inclusions, calcite-filled fractures, broken stick	56										

ALL LINEAR UNITS IN METRES

† :RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
*RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

A ANGLE MEASURED FROM CORE AXIS

HOLE No. CH-80-28A CONTINUED

FILE No. BA-212 A
REVISED Nov. 1978

CRL NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CONTINUED CM-80-28A

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ MOD/HO ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.e.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
23																	
	158.49																
		158.70		.13	Coal	dull, sheared, broken											
				.83	Shale	dark gray, carbonaceous, slicks, broken to highly broken	52										
				.91	Shale	coaly, broken stick to broken	34										
			161.60	.37	Coal	dull, sheared, broken to highly broken											
	161.54																
				.17	Shale	dark gray, carbonaceous, slicks, pyrite along slicks, broken to highly broken											
				.38	SST	medium gray, medium grain, carbonaceous, slicks, broken stick	44										
24																	
				.88	SST	as above, broken stick	39										
				.16	SST	as above, broken	34										
	163.06																
				1.57	SST	as above, stick	38										
	164.59																
				.92	SST	as above, stick	36										
	165.50																
				.14	SST	as above, broken	36										
				.11	SST	medium gray, medium-grained, broken to highly broken											
				.21	SST	as above, broken stick											
25																	
				.84	SST	as above, broken stick to broken	32										
	166.72																
				1.33	SST	as above, slicks at top, few calcite-filled fractures, broken stick	32										
	167.94																
				1.56	SST	medium gray, medium-grained, stick	34										
	169.46					T.D.											

ALL LINEAR UNITS IN METRES

† •RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CONTINUED CM-80-28A

FILE No. BA-212 A
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DIRECTIONAL SURVEY

CM-80-29

DEPTH (M)	SLANT ANGLE (°) *	SLANT ANGLE BEARING (AZ°)
100	88.8	200
265	87.8	070

* Measured From Horizontal

CROW NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORE
AREA	COAL MOUNTAIN

DATE		
BEGIN	July 17/80
END	July 22/80

HOLE No. CM-80-29

HOLE PARTICULARS

LOCATION	5483615.93 N		
	669312.34 E		
ELEVATION	2000.63	HOLE BEARING (AZ°)	
TOTAL DEPTH	DRILLED: 268	HOLE ANGLE (°)*	
	LOGGED: 267		

LOGGING

LOGS RUN	GRN,DENS,CAL,DIR
LOGGED BY	Davies
OTHER TESTS	

COAL CORING PERFORMANCE

CORE DIAMETER		HQ
TOTAL	CORE RECOVERED	96.85
	LENGTH CORED	141.30
	CORE RECOVERY	68.5 %

EXAMINATION

LOG USED	Full Suite
No. OF SEAMS SAMPLED	
EXAMINER (S)	P. Gilmar
DATE	80.07.24

BOX No	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS†
1																	
	12.50																
		12.50		.70	Coal	dull with bright, highly broken to wash			25								
	14.02																
				.55	Coal	dull with bright, highly broken to wash			2								
	15.55																
				.14	Coal	dull, broken											
				.60	Coal	dull with bright, highly broken											
				.07	Coal	wash											
	17.07																
				.11	Coal	dull, broken											
				.30	Coal	powder											
	18.59																
				.12	Coal	powder with broken											
	19.51																
				.20	Coal	powder with broken											
2																	
				.25	Coal	dull, hard, highly broken											
				.05	Shale	wash, dark gray											
	20.17																
				.08	Shale	dark gray, highly broken											
				.15	Coal/SH	slicked											
				.30	Coal	powder											
	21.95																
				.10	Coal	dull, broken											
				.55	Coal	powder			✓								

ALL LINEAR UNITS IN METRES

* : MEASURED FROM THE HORIZONTAL PLANE

† : • R &/OR S — GOLDER ASSOCIATES HARDNESS CODE

• RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-29

FILE No. BA-211A
REVISED Nov. 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-29 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
2																	
	23.48																
			23.65	.05	Coal	wash											
				.80	Shale	dark gray, highly broken, coal powder											
				.70	Shale	dark gray, carbonaceous partings, slicked, highly broken											
	26.22																
				.15	Shale	dark gray, slicked, some coal, highly broken											
3																	
				.25	Shale	as above											
	27.74																
		26.50		.65	Coal	dull with bright, highly broken			27								
			29.20	.15	Coal	powder			✓								
	29.27					No Core											
	30.79																
				1.24	Shale	dark gray, highly broken, slicks along carbonaceous and coal partings	50(f)										
	32.32																
				.42	Shale	dark gray, broken stick	17(f)										
				.40	SH/Coal	interbeds, coal bright with dull											
				.42	Shale	as above, broken stick	25										
	33.84																
4																	
				.48	Shale	as above, broken stick	35										
				.05	Coal	wash											
				.84	Shale	as above, plants and coal partings	20										
	35.37																
				.97	Shale	as above, broken											
	36.89																
				1.52	Shale	as above, broken stick	18										
	38.41																
5																	
				1.52	Shale	dark gray, stick and broken stick	25										

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-29 CONTINUED

FILE No. BA - 212 A
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CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-29 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
5																	
	39.94			1.52	Shale	as above											
	41.46			.98	Shale	as above, broken stick											
6				.35	Shale	dark gray, numerous carbonaceous partings, slicked											
	42.99			1.53	Shale	dark gray, calcite-filled fractures, slicked, stick to broken stick	25										
	44.51			1.40	Shale	as above, broken stick											
	46.04			.22	Shale	as above, broken stick											
				.30	Shale	as above, broken to highly broken											
7				.10	Shale	as above, broken stick											
	46.65			.86	Shale	dark gray, coal and carbonaceous partings, slicked, calcite fractures, silty	60										
				.20	Shale	iron-stain, highly broken											Fault
	47.87			.86	SLTST	gray, iron-stain, broken stick, calcite-filled fractures	50										
				.27	SLTST	as above, highly broken											
				.17	SLTST	as above, broken stick											
	49.24			.12	SLTST	as above, stick and broken stick											
				.10	SLTST	as above, highly broken											
				.15	Shale	dark gray, highly broken											
8				.26	SH/SLST	broken stick											

ALL LINEAR UNITS IN METRES

† :+R&/OR $ — GOLDER ASSOCIATES HARDNESS CODE
+RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-29 CONTINUED

FILE No. BA-212 A
REVISED Nov. 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-29 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % n.a.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
8																	
	50.76																
				.92	Shale	dark gray, silty in places, broken stick											
				.33	Shale	dark gray, carbonaceous and coaly partings, slicked, broken											
	52.29																
				.07	Coal	sheared, broken											
				.90	Shale	as above, highly broken	55										
	53.50																
				1.40	Shale	dark gray, some carbonaceous and coaly particles with slicks, calcite-filled fractures, broken stick											
9																	
				.13	Shale	medium gray, some silt, calcite fractures, broken stick	22										
	55.03																
				.80	Shale	as above, highly fractured, broken stick											
				.50	Shale	as above, broken											
	56.40																
				1.25	Shale	as above, broken stick											
	57.93																
				.08	Shale	as above, broken											
				.76	Shale	as above, broken stick											
				.10	Coal	highly broken to powder											
				.20	Shale	as above, highly broken											
10																	
				.22	Shale	as above, broken stick	20										
	59.45																
				.57	Shale	as above, broken stick											
				.40	Shale	medium gray, carbonaceous and coaly partings, slicked, broken											
	60.67																
				1.00	Shale	medium gray, some plants, broken stick	24										

ALL LINEAR UNITS IN METRES

† =RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
=RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-29 CONTINUED

FILE No. BA-212A
REVISED Nov. 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-29 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
10																	
				.28	Shale	as above, broken											
	62.19																
				.40	Shale	as above, broken stick											
				.35	Shale	medium gray, carbonaceous and coaly partings, broken											
	63.11																
				.43	Shale	medium gray, broken											
11																	
				.19	Shale	medium gray, some plants, broken stick, silty in places											
	63.62																
				.80	Shale	as above, broken stick											
	64.63																
				1.45	Shale	as above, stick	24										
	66.16																
				.35	Shale	as above, calcite fractures, broken stick											
				1.13	Shale	as above, stick											
12																	
	67.68																
				1.10	Shale	as above, stick to broken stick											
	69.21																
				.40	Shale	as above, broken											
				.70	Shale	as above, broken stick											
	70.73																
				1.40	Shale	as above, broken stick											
	72.26																
13																	
				.75	Shale	as above, broken stick, some slicks along carbonaceous partings	28										
				.20	Shale	as above, broken											
				.18	Shale	as above, broken stick											
	73.78																
				1.30	Shale	as above, broken stick	27										

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-29 CONTINUED

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CONTINUED CM-80-29

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
13																	
				.27	Shale	as above, broken											
	75.30																
				1.17	Shale	as above, broken stick											
14																	
				.35	Shale	as above, stick											
	76.83																
				1.43	Shale	as above, stick	35										
	78.35																
				1.48	Shale	as above, broken stick and stick	36										
	79.88																
				.70	Shale	medium gray, carbonaceous partings, calcite fractures, broken and broken stick	37										
15																	
				.38	Shale	medium gray, silty, broken stick											
	81.40																
				1.36	Shale	as above, slicked at base	30										
	82.93																
				.12	Shale	dark gray, carbonaceous partings, slicked, broken											
		82.20	83.00	.80	Coal	dull with bright			28								
		83.70	84.75	.05	Coal	powder											
				.07	Shale	wash											
	84.15																
				.20	Shale	dark gray, carbonaceous partings, slicked	40										
				.55	Coal	dull, highly broken											
				.02	Shale	wash											
	85.67																
		85.15		.34	Coal	dull with bright, powder			29								
16																	
				.43	Coal	dull with bright, broken stick											
				.12	Coal	powder											

ALL LINEAR UNITS IN METRES

† :*R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
*RQD — ROCK QUALITY DESIGNATION (%)
ff — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CONTINUED CM-80-29

FILE No BA-212 A
REVISED Nov 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-29 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
16																	
	87.19																
				.15	Coal	shale split, broken, dull with bright			30								
				.25	Coal	dull with bright, broken stick											
				.15	Coal	powder											
	88.39																
				.40	Coal	dull with bright, broken stick											
				.70	Coal	dull with bright, very hard, broken stick	45										
				.20	Coal	powder											
	90.24																
				.55	Coal	dull with bright, broken stick	45										
17																	
				.35	Coal	dull with bright, broken to powder											
	92.07																
				.50	Coal	dull with bright, broken to powder											
	92.68																
				.10	Coal	slightly shaley, hard, highly broken											
				.40	Coal	dull with bright, hard in places, broken to powder											
				.43	Coal	dull with bright, hard in places, broken stick											
	93.90																
				.10	Coal	dull, broken, hard											
				.34	Coal	broken to powder											
			94.60	.60	Coal	dull with bright, calcite-filled rootlets, broken stick	47		↓								
	95.12																
		94.90		.10	Coal	dull with bright, broken			31								
				.27	Shale	dark gray, coal partings, broken stick	45										
				.18	Coal	dull with bright, hard, broken											
			95.25	.03	Coal	wash											

ALL LINEAR UNITS IN METRES

† = R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
• RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-29 CONTINUED

FILE No BA-212A
REVISED Nov. 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-29 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
17																	
				.05	Shale	dark gray, slicked, broken			31								
18																	
				.50	Shale	dark gray, numerous coal partings, broken											
	96.64																
				.70	Shale	dark gray, highly slicked, highly broken, coal partings											
	98.17																
				.50	Shale	as above											
		97.80		.25	Coal	powder			↓								
	99.69																
				.17	Coal	powder			32a								
				.14	Coal	shaley, hard, broken stick											
				.85	Coal	dull with bright, broken stick	30										
	101.22																
				.05	Coal	powder											
				.20	Coal	hard, dull, broken											
				.10	Coal	dull with bright, highly broken											
19																	
				.50	Coal	as above											
				.10	Coal	as above, hard											
	102.74																
				.65	Coal	highly broken to powder											
				.05	Coal	dull, hard											
	103.96																
				.30	Coal	dull, shaley, calcite-filled, rootlets, broken stick	30										
				.75	Coal	dull with bright, tube											
	105.49																
				.45	Coal	highly broken, dull with bright											
				.08	Shale	coaly, hard	45										

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-29 CONTINUED

FILE No. BA-212A
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CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORRIN
AREA	COAL MOUNTAIN

HOLE No. CONTINUED CM-80-29

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
19																	
				.35	Coal	dull with bright, powder			32a								
	107.01																
				.15	Coal	dull with bright, highly broken											
				.05	Coal	hard, dull, broken											
20																	
				.50	Coal	dull with bright, tube											
	108.23																
				.60	Coal	dull with bright, highly broken											
	109.15																
				.07	Coal	powder											
				.62	Coal	dull with bright, tube											
	110.36																
				.47	Coal	dull with bright, shaley, calcite-filled rootlets, broken stick											
				.07	Shale	coaly											
				.85	Coal	dull with bright, broken stick, hard	25										
	111.89																
				.15	Coal	hard, dull, broken stick			32b								
				.20	Coal	dull with bright, broken											
21																	
				.05	Coal	hard, shaley, broken											
				.30	Coal	dull with bright, broken											
				.67	Coal	broken stick	25										
				.13	Coal	dull, hard, shaley											
	113.41																
				.80	Coal	dull with bright, broken											
				.20	Coal	powder											
	114.63																
				.20	Coal	powder											

ALL LINEAR UNITS IN METRES

† :•RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CONTINUED CM-80-29

FILE No. BA-212 A
REVISED Nov 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CH-80-29 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (-)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
21																	
	116.16																
				.17	Shale	dark gray, broken, wash			32b								
				.20	Coal	dull with bright, broken	5										
				.80	Coal	dull, hard	~5										
				.15	Coal	dull with bright, broken											
22																	
				.45	Coal	dull with bright, broken	5										
				.55	Coal	as above, broken stick											
	118.75																
				.35	Coal	dull with bright, hard, broken stick											
				.47	Coal	dull with bright, broken stick	5										
				.48	Coal	as above, hard, broken stick											
	120.12																
				.40	Coal	as above											
				.60	Coal	bright with dull, highly broken											
	121.34																
				.65	Coal	dull, highly broken											
23																	
				.15	Coal	as above											
	122.41																
				.70	Coal	dull, broken											
	123.48																
				.25	Coal	dull, hard, highly broken											
				.65	Coal	dull, hard, broken											
				.35	Coal	dull, hard, highly broken											
	125.00																
				.15	Coal	as above, broken											
				.25	Coal	dull with bright, broken, sheared											
				1.10	Coal	dull with bright, calcite rootlets, slightly shaley, broken stick	10										

ALL LINEAR UNITS IN METRES

† :*B&/OR 5 — GOLDER ASSOCIATES HARDNESS CODE
*RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CH-80-29 CONTINUED

FILE No. BA-212 A
REVISED Nov. 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-29 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
24																	
	126.49																
				1.25	Coal	as above			32c								
				.35	Coal	as above, broken											
	128.35																
				.90	Coal	dull with bright, broken stick	12										
				.25	Coal	dull with bright, some rootlets, broken											
				.25	Coal	dull with bright, broken stick											
	130.03																
				.80	Coal	as above											
25																	
				.40	Coal	dull with bright, broken											
	131.71																
				.70	Coal	dull with bright, broken stick	7										
				.50	Coal	dull with bright, broken											
	133.23																
				1.29	Coal	dull with bright, broken stick	7										
				.25	Coal	as above, broken											
	134.76																
				.25	Coal	dull with bright, slightly shaley, broken											
26																	
				.40	Coal	dull with bright, broken stick											
	136.28																
				1.25	Coal	dull with bright, broken stick											
				.10	Coal	powder											
	137.80																
				.05	Coal	broken											
				1.25	Coal	dull with bright, broken stick	15										
	139.33																
				.05	Coal	dull, broken											
				.50	Coal	dull with bright, broken stick	11										

ALL LINEAR UNITS IN METRES

† = R6/OR S — GOLDER ASSOCIATES HARDNESS CODE
= R Q D — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-29 CONTINUED

FILE No. BA-212 A
REVISED Nov. 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-29 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
27																	
				.88	Coal	dull with bright, broken stick	12		32c								
	140.85																
				1.25	Coal	as above			32d								
				.12	Coal	dull with bright, broken											
	142.38																
				1.15	Coal	dull with bright, broken stick											
				.10	Coal	dull with bright, broken											
	143.90																
				.15	Coal	as above											
28																	
				.42	Coal	dull with bright, broken stick											
	145.43																
			146.60	.60	Coal	dull with bright, hard, slightly shaley, broken											
	146.95																
				.20	Coal	as above, broken	10										
		148.50		.15	Coal	dull with bright, highly broken											
	148.17																
				.60	Coal	dull with bright, tube, powdery											
	149.69																
				.35	Shale	coaly, sheared, hard, highly broken											
				.08	Coal	powder											
	151.22																
				.65	Coal	highly broken to powder, dull with bright											
	152.44																
29																	
				1.25	Coal	dull with bright, broken stick, slicks											
	153.96																
				.65	Coal	as above											
				.60	Coal	dull with bright, tube, powdery											
	155.64																
				.25	Coal	dull with bright, broken											

ALL LINEAR UNITS IN METRES

† •RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF —— FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-29 CONTINUED

FILE No BA-212 A
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CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CONTINUED CM-80-29

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
29				1.00	Coal	dull with bright, broken stick and dull	4		32d								
30				.25	Coal	as above, broken			↓								
	157.32			.95	Coal	as above, broken stick	3		32e								
	158.84			.55	Coal	dull with bright, highly broken, tube											
				.08	Coal	powdery											
	160.37			.40	Coal	powdery											
				.15	Coal	dull, hard, broken											
				.25	Coal	powdery with broken											
	161.58			.50	Coal	dull, some dull with bright, hard, broken											
	162.50			.25	Coal	as above, some powder											
31				.25	Coal	dull with bright, hard, broken											
	163.68			.85	Coal	dull with bright, broken stick	4										
				.30	Coal	as above, broken											
	165.20			.80	Coal	as above, broken stick											
				.10	Coal	as above, highly broken											
	166.42			1.05	Coal	as above, broken											
32				.30	Coal	dull with bright, broken stick											
	167.84			1.00	Coal	dull with bright, broken stick	5										

ALL LINEAR UNITS IN METRES

† :-HB/OR S — GOLDEN ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CONTINUED CM-80-29

FILE No 8A-212 A
REVISED Nov 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-29 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % o.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
32																	
	169.16																
				.55	Coal	as above			32e								
				.15	Coal	as above with calcite-filled rootlets											
				.46	Coal	dull with bright, broken stick											
	170.38																
				.95	Coal	as above	6										
	171.65																
				.20	Coal	as above, broken											
33																	
				.80	Coal	dull with bright, broken, some calcite rootlets	14		32f								
	172.82																
				.75	Coal	dull with bright, broken, some powder											
	174.19																
				.30	Coal	powder											
				.30	Coal	broken											
				.45	Coal	broken with powder											
	175.56																
				.75	Coal	dull with bright, broken											
	176.78																
34																	
				1.20	Coal	dull with bright, tube, broken											
	178.40																
				.15	Coal	powder											
				.50	Coal	dull with bright, broken stick	50										
				.18	Coal	highly broken											
	179.52																
				.95	Coal	dull with bright, broken, slicks, some hard sections											
	180.90																
			180.50	.40	Coal	powder											

ALL LINEAR UNITS IN METRES

† :-RE/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-29 CONTINUED

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-29 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
35																	
		181.45		.10	Coal/SH	powder, tube											
	181.97																
				.25	Shale	coaly, highly sheared, broken											
				.05	Shale	hard, dark gray, coaly											
				.35	Coal	dull, broken											
			182.00	.15	Coal	hard, shaley, broken											
				.40	Shale	dark gray, coal partings	20										
	183.49																
		182.70		.28	Coal	dull with bright, hard, shaley	20										
			183.20	.20	Coal	dull with bright, highly broken											
				.10	Shale	powder											
				.10	Mudst.	dark gray, broken stick											
	184.40																
				.60	Mudst.	dark gray, slicked, broken											
				.10	Mudst.	as above, powder											
				.10	Mudst.	as above, broken											
	185.62																
				.25	Mudst.	dark gray, some slicks, broken											
36																	
				.85	Mudst.	black, slicks, broken											
	187.15																
				.20	Mudst.	as above, broken											
				.55	Mudst.	slicked, highly broken, with some coal											
				.15	Mudst.	broken											
	188.37																
				.10	Mudst.	as above											
		188.75		.20	Coal	highly broken, highly sheared, some shale			33								
				.12	Mudst.	coaly, hard, broken											

ALL LINEAR UNITS IN METRES

† :-RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-29 CONTINUED

FILE No. BA-212 A
REVISED Nov 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CONTINUED CM-80-29

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
36																	
				.20	Coal	powder			33								
				.15	Mudst.	broken			↓								
	190.04																
				.50	Coal	dull with bright, broken stick	10		34								
37																	
				.55	Coal	as above	30		↓								
	191.72																
			191.75	.50	Coal	as above, broken			↓								
	193.24																
				.50	Mudst.	slicked, broken											
	194.46																
				.20	Mudst.	as above											
		194.90		.45	Coal	highly broken to powder, dull with bright											
	195.68																
				.25	SH/Coal	powder, highly sheared			35								
				.25	Coal	powder			↓								
	197.21																
				.12	Coal	powder			36								
				.06	Coal	dull, hard, broken			↓								
	198.12																
38																	
				.75	Coal	dull with bright, broken			↓								
				.24	Coal	as above, broken stick with small shale stringers	35		↓								
			199.20														
	199.80																
				.80	Mudst.	highly slicked, broken											
	201.47																
				.22	Mudst.	as above, highly broken, slicks											
				.54	Mudst.	broken, slicks											

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CONTINUED CM-80-29

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-29 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS[1]
38																	
	202.69																
				.70	Mudst.	broken, slicks											
	204.22																
				.04	Mudst.	as above			37								
		203.00		.07	Coal	hard, shaley, broken											
39																	
			203.70	.05	Coal	dull with bright	50										
				.31	Shale	coaly, hard, broken stick											
		204.00		.26	Coal	dull, slicked, highly broken											
			204.80	.14	Coal	powder											
	205.74																
				.32	Mudst.	hard, coaly, broken stick	44										
				.19	Mudst.	as above, slicked, broken											
				.30	Mudst.	highly sheared, powder, coaly											
	206.65																
				.15	Mudst.	as above											
				.75	Mudst.	as above, highly broken											
	207.00																
				.75	Mudst.	broken											
	208.64																
				.14	Mudst.	broken											
40																	
				.60	Mudst.	broken											
	209.40																
				.45	Mudst.	as above											
		209.20		.44	Coal	dull, hard, broken			38								
	210.92																
				.90	Coal	mainly dull, broken			39								
				.17	Coal	powder											

ALL LINEAR UNITS IN METRES

1 :-R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-29 CONTINUED

FILE No. BA-212 A
REVISED Nov. 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-29 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
40																	
	212.45			.56	Coal	dull with bright, broken			39								
	213.97																
				.25	Coal	as above	25										
41																	
				.45	Coal	tube, powder											
				.18	Coal	dull with bright, broken											
	215.19																
				.20	Coal	as above											
				.13	Coal	as above, broken stick	40										
				.15	Coal	dull, shaley											
				.50	Coal	dull with bright, broken											
	216.48																
			217.50	.12	Coal	as above	38		40								
				.32	Coal	shaley partings											
				.11	Mudst.	coaly											
	217.32																
				.75	Mudst.	broken											
	218.24																
				.50	Mudst.	as above, highly sheared, broken											
42																	
				.43	Mudst.	highly sheared, coaly											
	219.61																
				.10	Coal	highly sheared, highly broken											
				.28	Mudst.	coaly, highly sheared											
				.47	Mudst.	broken stick	25										
	220.46																
				.62	Mudst.	dark gray, plants											
		220.40	221.20	.05	Coal	dull, broken											
				.36	Mudst.	as above, slicks with calcite, coaly at base											

ALL LINEAR UNITS IN METRES

† :-R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-29 CONTINUED

FILE No BA-212A
REVISED Nov 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-29 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS[1]
42	221.74																
		221.50		.60	Coal	shaley in places, highly broken to powder			41								
	222.81																
				.60	Coal	mainly dull, broken			42								
43																	
				.15	Coal	as above											
	224.03																
				.65	Coal	dull with bright, broken, slicks	15										
				.30	Coal	highly broken to powder											
				.07	Coal	shaley, hard, dull											
	225.55																
				.35	Coal	dull, slicked, broken											
				.40	Coal	hard, dull, shaley											
	226.77																
				.20	Coal	dull with bright, broken											
			226.35	.40	Coal	dull, shaley, slicked											
				.30	Shale	coaly, hard, broken, slicked			43								
44																	
				.09	Shale	coaly partings, highly broken, dominant slicks											
	227.99																
				.95	Mudst.	coaly partings, broken stick	40										
	229.27																
				.55	Mudst.	as above											
				.20	Mud/Coal	highly broken to powder											
	230.43																
				.40	Coal	highly sheared, broken, tube	45										
				.20	Coal	powder											
				.05	Mudst	broken											
				.07	Coal	powder											
				.18	Mudst.	coal partings, sheared, broken											

ALL LINEAR UNITS IN METRES

1 :-RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-29 CONTINUED

FILE No. BA-212A
REVISED Nov. 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-29 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
44																	
	231.34																
				.56	Mudst.	broken stick, slicks											
45																	
				.45	Mudst.	as above											
	232.56																
				.98	Mudst.	broken											
				.05	Mudst.	wash, with coal											
	233.48																
				1.28	Mudst.	coal partings, broken stick with broken, slicks	30										
	235.00																
				.80	Mudst.	coaly wisps, some slicks, broken stick											
46																	
				.55	Mudst.	as above											
				.11	Mudst.	as above, broken											
	236.52																
				.80	Mudst.	coaly, broken stick											
				.04	Mudst.	slicked, coaly, highly broken											
	237.74																
				.98	Mudst.	dark gray, broken stick	24										
				.16	Mudst.	as above, broken											
				.12	Mudst.	coaly, broken											
		238.00		.18	Coal	shaley, broken			44								
	239.27																
				.14	Coal	dull, hard, shaley, broken	24										
				.43	Coal	dull with bright, broken											
				.12	Coal	dull, hard, broken											
47																	
				1.10	Coal	dull with bright, broken	25										
	240.79																
			241.45	1.20	Coal	dull with bright, broken, some hard sections											

ALL LINEAR UNITS IN METRES

† :•R&/OH S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-29 CONTINUED

FILE No. SA-212 A
REVISED Nov. 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-29 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % o.a.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
47	242.32																
				.40	Mudst.	dark gray, coaly wisps, broken											
				.12	Coal	dull with bright, broken											
				.75	Mudst.	dark gray, broken, slicks	42										
	243.72																
				.32	Mudst.	as above											
48																	
				.49	Mudst.	as above, broken	40										
	244.75																
				.83	Mudst.	dark gray, carbonaceous partings, some silt, stick											
				.62	Shale	with silt laminae, stick, some slicks	30										
	246.28																
				.12	Shale	as above, broken											
		246.70		.90	Coal	dull with bright, broken stick	35		45								
				.20	Coal	dull with bright, shale laminae, broken stick	36		↓								
	247.50																
				.85	Coal	dull with bright, broken stick	40		46								
49																	
				.50	Coal	dull with bright, broken stick	43										
	249.02																
			248.90	.76	Coal	dull with bright, broken stick											
				.76	Coal/SH	highly broken to powder											
				.05	Shale	slicked, broken											
		249.90		.30	Coal	broken, dull with bright											
	250.39																
				.31	Mudst.	dark gray, carbonaceous and coaly partings, broken	44										
				.23	Coal	dull, hard, slicked, broken											
				.18	Coal	powder											
	251.46																
				.85	Coal	dull with bright, broken stick	38										
				.10	Coal	powder											
				.18	Coal	dull with bright, broken stick	37										

ALL LINEAR UNITS IN METRES

† •RA/OB S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-29 CONTINUED

FILE No. BA-212A
REVISED Nov. 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CONTINUED CM-80-29

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
49																	
	252.98								46								
50																	
			252.80	.61	Coal	dull with bright, broken stick											
				.41	Mudst.	black, coal partings, broken stick, pyritic band (.01 m)	24										
				.06	Coal/SH	broken											
	254.20																
				.12	Mudst.	coal and shaley partings, broken, slicks, black											
				.88	Mudst.	silty laminae, stick, black	37										
	255.42																
				.14	Mudst.	coaly, broken, black											
		254.70	255.70	.75	Coal	dull with bright, broken											
				.13	Mudst.	coaly, broken, black											
	256.64																
				.21	Mudst	slicked, coaly and carbonaceous partings, broken	30										
				.35	SH/SS	interlaminated, broken stick	34										
51																	
				.45	SST	medium-grained, shale, coaly partings, slicks, broken	47										
				.31	SST	medium-grained, broken											
	258.17																
				.52	SST	medium-grained, salt and pepper, broken											
				.25	SST	as above, broken stick											
				.20	SST	as above, broken											
				.18	SST	as above, stick											
				.22	SST	as above, broken											
	259.69																
				1.59	SST	as above, stick	35										

ALL LINEAR UNITS IN METRES

† •RB/OBS — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CONTINUED CM-80-29

FILE No. BA-212 A
REVISED Nov 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-29 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
51																	
	261.21																
				.15	SST	as above, stick											
52																	
				1.41	SST	as above, stick											
	262.74																
				1.53	SST	as above, stick	32										
	264.26																
				1.27	SST	as above, stick	44										
53																	
				.28	SST	as above, stick											
	265.79																
				1.52	SST	as above, stick	35-40										
	267.31																
				1.47	SST	as above, stick	41										
	268.83					T.D.											

ALL LINEAR UNITS IN METRES

† :-R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-29 CONTINUED

FILE No BA-212A
REVISED Nov 1978

DIRECTIONAL SURVEY

CM-80-30

NO. CABLE DEPTH (M)	SLANT ANGLE *	SLANT ANGLE BEARING
80	88.2	339.7
140	86.5	165
180	86.2	20

* Measured From Horizontal

CR NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

DATE	
BEGIN	80.07.11
END	80.07.17

HOLE No. CM-80-30

HOLE PARTICULARS

LOCATION	5483614.11 N 669378.57 E		
ELEVATION	2026.78	HOLE BEARING (AZ°)	
TOTAL DEPTH	DRILLED: 184 m LOGGED: 182.5 m	HOLE ANGLE (°)*	90

LOGGING

LOGS RUN	GRN, DENS, CAL, DIR
LOGGED BY	Davies
OTHER TESTS	

COAL CORING PERFORMANCE

CORE DIAMETER		HQ
TOTAL	CORE RECOVERED	59.2
	LENGTH CORED	74.1
	CORE RECOVERY	79.9 %

EXAMINATION

LOG USED	Full Suite
No. OF SEAMS SAMPLED	
EXAMINER (S)	K.S./P.G.
DATE	80.07.18

BOX No	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	SEAM DESIG	♣ BEDDING ANGLE (°)	SUMMARY GEOTECH HARDNESS	FRAC. FREQ.	RQD	SAMPLE NO.	ANALYTICAL DATA MOIST % air b.	MOIST % residual	ASH %	V M %	F C %	F.S.I.	C.V.
						0 - 12.80 No Core													
1																			
	2.80			1.58	SST	gray, medium grain, light and dark laminae, calcite-filled fractures, few carbonaceous partings, iron-stain at 13.0 m and 14.3 m, stick to broken	5												
	14.33			1.00	SST	as above, iron-stained, highly broken zone from 15.60 - 15.85, broken stick to broken	10						Fault						
	15.85			1.40	SST	as above, carbonaceous partings common in upper 0.20 m, calcite-filled fractures in bottom half, stick to broken	25												
2				.24	SST	as above, broken stick													
	17.37			1.70	SST	as above, medium-scale cross-beds, broken stick to broken	00-45												
	18.90			1.65	SST	as above, stick to broken stick	22												
	20.42			.55	SST	as above, broken stick	3												
3				1.22	SST	as above, stick and broken, iron-stain at 21.74 m	5												
	21.94			.90	SST	gray, medium grain, light and dark laminae, thin carbonaceous partings, broken	24												
	22.86			.41	SST	as above, stick	31												
				.22	Shale	dark gray, carbonaceous, highly broken													

ALL LINEAR UNITS IN METRES

* MEASURED FROM THE HORIZONTAL PLANE

† := R &/OR S — GOLDER ASSOCIATES HARDNESS CODE

• RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

♣ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-30

FILE No. BA-267
REVISED May 1980

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-30 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS*
3																	
				.39	SST	as above, iron-stain, broken											
				.40	SST	gray, medium grain, soft, carbonaceous partings, abundant iron-stain, highly broken											
	24.08																
				.53	SST	gray, medium grain, carbonaceous partings common, broken stick	5										
4																	
				1.27	SST	as above, broken stick in top half, broken with iron-stain in bottom half	5										
	25.30																
				1.68	SST	as above, stick to highly broken, iron-stain at 25.6, 26.0 m	26-45										
	26.97																
				1.00	SST	as above, broken stick to broken	20										
				.28	SST	abundant iron-stain, rubble to powder											
5																	
				.38	SST	gray, medium grain, carbonaceous partings, stick	27										
	28.65																
				1.68	SST	as above, a few slicks, iron-stain along fractures, broken stick											
	30.18																
				1.57	SST	gray, medium grain, light and dark laminae, carbonaceous partings, broken stick, 5 cm carbonaceous shale at 31.35 m	40										
	31.70																
				.43	SST	as above, broken, medium cross-beds	56										
6																	
				.33	SST	as above, broken to highly broken											
						Tube did not lock (No core)											
	35.66																
				.23	SST	as above, a few calcite-filled fractures, broken stick	72										
				.92	Shale	medium gray, carbonaceous partings, calcite-filled fractures, some fine sandstone at bottom, broken to highly broken, slicks	66										

ALL LINEAR UNITS IN METRES

* R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-30 CONTINUED

FILE No BA-212A
REVISED Nov 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-30 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
6																	
	36.58																
				.80	SST	gray, medium-grained, light and dark laminations, iron-stain on fractures, broken stick to highly broken, pieces of wash at top and bottom	40										
	37.49																
				1.10	SST	as above, iron-stain near top, carbonaceous partings, highly broken wash at top, broken stick	30										
	38.71																
				.30	SST	as above, a bit coarser-grained than above, broken	46(p)										
	39.32																
7																	
				.58	SST	as above, wash at top, broken to highly broken											
	40.23																
				.12	SST	gray, medium grain, wash, highly broken											
	41.76																
				.12	SST	as above, wash, highly broken											
				.06	Shale	medium gray, slicks, highly broken to powder											
	43.28																
				.15	SST	as above, wash, highly broken											
				.60	Shale	medium gray, silty, calcite-filled fractures, broken stick to broken, iron-stain at bottom	79										
	44.04																
				.20	Shale	dark gray, carbonaceous partings, highly broken											
				1.06	Shale	medium gray, carbonaceous partings, silty at bottom, broken to highly broken	80										
	45.42																
				.86	Shale	as above, coaly interbed near bottom, iron stain at top, broken stick to highly broken	78										
	46.33																
				.12	Shale	as above, highly broken											

ALL LINEAR UNITS IN METRES

† = RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
= RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-30 CONTINUED

FILE No 6A-212 A
REVISED Nov 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-30 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
8																	
				1.18	Shale	as above, silty near base, broken to highly broken											
	47.55																
				1.20	SST	gray, fine, silty at top, carbonaceous and coaly partings, small cross-beds, broken stick to broken	65										
	48.77																
				1.76	SST	as above, medium sandstone wash at top, shaley near bottom, calcite-filled fractures, iron-stain at bottom, stick to broken											
	50.29																
				.11	SST	gray, fine grain, carbonaceous partings, cross-beds, broken	70										
9																	
				.73	SST	as above, calcite-filled fractures, minor iron-stain, broken	70										
	50.90																
				1.41	SS/SH	sandstone is fine grained, gray, cross-beds; shale is dark gray, stick	70										
	52.43																
				.50	SS/SH	as above, more shale, broken stick	76										
				1.12	Shale	dark gray, minor carbonaceous partings, broken stick, silty at base											
	53.95																
				.28	Shale	as above, silty, slicks, broken	65										
10																	
				1.22	Shale	as above, very fine sandstone interbeds in bottom half, stick to broken stick, calcite-filled fractures	80										
	55.47																
				.94	Shale	as above, more coaly and carbonaceous interbeds, iron-stain in middle, broken stick to broken	65										
	56.69																
				.58	Shale	as above, broken, silty											
				.88	SST	very fine, silty partings, calcite-filled fractures, broken stick	64										

ALL LINEAR UNITS IN METRES

† :-RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF —— FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-30 CONTINUED

FILE No. BA-212 A
REVISED Nov. 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-30 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
10																	
	58.22																
				.80	Shale	dark gray, silty, carbonaceous partings, broken stick to broken	61										
11																	
				.10	Shale	dark gray, carbonaceous partings, broken stick											
	60.05																
				.87	Shale	as above, carbonaceous and coaly partings, broken	42										
	61.57																
				1.06	Shale	as above, broken stick to broken	40										
	63.09																
				1.39	Shale	as above, slicks, stick to highly broken	15										
	64.62																
				.63	Shale	as above, slicks, broken stick	15										
12																	
				.62	Shale	as above, broken to highly broken											
	66.14																
				.15	Shale	as above, highly broken (wash)			12								
		65.65	67.37	.70	Coal	dull with bright, some shale interbeds, highly broken to powder	38		↓								
	67.67																
				1.22	Shale	dark gray, carbonaceous and coaly partings, broken stick to broken	25										
	68.88																
				1.00	Shale	as above, slicks, stick to broken stick	15										
	70.10																
				.40	Shale	as above, slightly silty, slicks, broken											
13																	
				.55	Shale	as above, broken to powder											
	71.32																
				.28	Shale	as above, broken to powder	0(p)										
				1.25	Shale	dark gray, carbonaceous and coaly partings, calcite-filled fractures, slicks, 10 cm wash at top, broken stick to broken	15										

ALL LINEAR UNITS IN METRES

† = RB/DR S — GOLDER ASSOCIATES HARDNESS CODE
• RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-30 CONTINUED

FILE No BA-212 A
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CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CONTINUED CM-80-30

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS*
13																	
	73.76																
				.48	Shale	as above, calcite-filled fractures absent, broken to powder (wash)	15										
	74.37																
				.30	Shale	as above, highly broken, wash											
	75.29																
				.67	Shale	as above, broken stick to broken, 10 cm wash at top	42										
				.16	Shale	as above, powder											
14																	
				.75	Shale	dark gray, carbonaceous and coaly partings, to highly broken	45(p)										
	78.33																
				.12	Shale	as above, broken											
		78.50	79.30	.75	Coal	dull, sheared, highly broken to powder			13								
				.20	Shale	dark gray, coaly, carbonaceous and coaly partings, highly broken											
	79.86																
		80.45		.20	Coal	dull, sheared, highly broken			14								
				.50	Coal	dull, powder											
	81.38																
				.11	Coal	dull, powder											
	81.69																
						No Core											
	81.99																
				.07	Shale	dark gray, carbonaceous and coaly partings, highly broken, wash			15								
				.20	Coal	dull, powder, pieces of shale wash											
	83.52																
				.18	SST	medium gray, medium grained, wash											
				.18	Coal	dull with bright, highly broken											
				.10	Coal	dull, powder											

ALL LINEAR UNITS IN METRES

† :-R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CONTINUED CM-80-30

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CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-30 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
14																	
				.10	Shale	dark gray, coaly, highly broken			15								
				.05	Coal	dull and bright, highly broken											
	85.04																
				.31	Coal	dull, powder											
15																	
				.51	Coal	very shaley, dull, broken stick	15										
	85.95			.16	Coal	dull, highly broken											
				.18	Coal	dull, powder											
				.49	Coal	dull, highly broken											
				.60	Coal	dull, broken to highly broken											
	87.48																
				.27	Coal	dull with bright, highly broken											
				.54	Coal	dull, highly broken											
				.10	Coal	shaley, dull, broken											
				.43	Coal	dull, highly broken											
				.13	Coal	shaley, dull, broken											
	89.00																
				.71	Coal	dull with bright, broken to highly broken	23										
16																	
				.56	Coal	dull and bright, broken stick to broken	15										
				.48	Coal	dull, highly broken											
	90.53																
				.57	Coal	dull, sheared, highly broken											
				.77	Coal	dull with bright, highly broken											
	92.05																
				.17	Coal	dull, powder											
				.20	Coal	dull with bright, broken to highly broken	26										
				.34	Coal	dull, highly broken											

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-30 CONTINUED

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CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-30 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
16									15								
				.16	Coal	dull, shaley, broken											
				.52	Coal	dull with bright, broken											
				.15	Coal	dull, highly broken											
	93.57																
				.35	Coal	dull, broken	40										
17																	
				.27	Coal	dull, shaley, broken											
				.08	Coal	bright with dull, broken	25										
				.76	Coal	dull with bright, broken											
	95.10																
				.39	Coal	dull with bright, broken	25										
				.29	Coal	dull with bright, calcite-filled rootlets, broken stick											
				.38	Coal	dull, broken, sheared											
				.15	Coal	dull and bright, broken											
				.20	Coal	dull, broken to highly broken											
				.23	Coal	dull and bright, broken											
	96.65																
				.23	Coal	dull, broken											
				.02	Coal	dull, shaley, calcite-filled rootlets, broken											
				.40	Coal	dull, sheared, highly broken											
				.28	Coal	dull, broken	26										
				.28	Coal	dull and bright, broken											
				.12	Coal	dull, broken to highly broken											
				.10	Coal	dull and bright, highly broken											
			98.10	.17	Coal	dull, highly broken											

ALL LINEAR UNITS IN METRES

† :•BA/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CONTINUED CM-80-30

FILE No BA-212A
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CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-30 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
	98.15																
18																	
		98.50	99.00	.32	Coal	dull with bright, highly broken			16								
				.52	Shale	dark gray, carbonaceous and coaly partings, broken to highly broken			↓								
	99.06																
				.59	Shale	black, coaly, slicks, broken to highly broken	26										
				.18	Coal	dull with bright, highly broken to powder											
	99.97																
				.14	Coal	dull with bright, broken											
				.96	Shale	dark gray, carbonaceous and coaly partings, stick to broken stick	19										
	101.19																
				.46	Shale	dark gray, carbonaceous and coaly partings, slicks, broken stick to broken	35										
	102.72																
				.12	Shale	as above, highly broken											
19																	
				.50	Shale	as above, broken stick	40										
		103.65		.38	Coal	dull, shaley, sheared, broken to powder			17								
	104.24																
				.23	Coal	bright with dull, broken	30										
				.11	Coal	dull, powder											
				.19	Coal	dull, sheared, highly broken											
				.70	Coal	dull, broken											
				.32	Coal	dull with bright, broken											
				.04	Coal	dull, shaley, broken			↓								
	105.77																
				.27	Coal	dull with bright, highly broken			18								
				.48	Coal	dull with bright, broken	33										
				.05	Coal	dull, shaley, broken											

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-30 CONTINUED

FILE No. BA-212 A
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CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-30 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
19																	
				.71	Coal	dull, with bright, broken to highly broken			18								
	107.29																
				.09	Coal	dull with bright, broken stick											
20																	
				.12	Coal	dull and bright, broken stick	35										
				.51	Coal	dull with bright, broken											
				.61	Coal	dull, broken											
				.11	Coal	dull with bright, broken											
	108.81																
				.25	Coal	dull, broken											
				.25	Coal	dull, shaley, broken stick	37										
				.37	Coal	dull with bright, shaley, broken stick											
				.72	Coal	dull, broken	33										
	110.34																
				.23	Coal	dull, broken											
				.04	Coal	bright, broken											
				.10	Coal	dull, shaley, broken	30										
				.99	Coal	dull, broken											
	111.86																
21																	
				.34	Coal	dull, broken	35										
				.15	Coal	dull and bright, broken											
				.53	Coal	dull, sheared, broken											
				.48	Coal	dull, broken stick to broken											
	113.39																
				.25	Coal	dull, broken	37										
				.12	Coal	dull, shaley, broken											
				.62	Coal	dull, broken stick to broken											

ALL LINEAR UNITS IN METRES

† •R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-30 CONTINUED

FILE No BA-212 A
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CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-30 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
21																	
				.03	Coal	dull, shaley, broken stick	31		18								
				.32	Coal	bright with dull, broken											
				.15	Coal	dull with bright, broken											
	114.91																
				.16	Coal	dull, shaley, broken stick	35										
				.33	Coal	dull and bright, broken											
				.06	Coal	dull, shaley, broken stick											
				.30	Coal	dull and bright, broken											
				.10	Coal	dull with bright, broken											
				.47	Coal	dull and bright, broken											
22																	
				.14	Coal	dull, broken											
				.14	Coal	dull and bright, broken											
	116.43																
				.16	Coal	dull with bright, broken											
				.33	Coal	dull and bright, broken											
				.50	Coal	bright with dull, broken stick	35										
				.43	Coal	bright, broken stick											
	117.96																
			117.85	.06	Coal	bright, broken			19								
				.50	Shale	dark gray, carbonaceous and coaly partings, broken	35										
		118.40															
				.10	Coal	bright, broken											
				.10	Coal	dull and bright, broken stick											
				.10	Coal	bright, broken											
			119.00	.11	Coal	dull with bright, broken stick											
				.48	Shale	black, coaly and carbonaceous partings, broken stick	33										

ALL LINEAR UNITS IN METRES

† :-R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF —— FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-30 CONTINUED

FILE No. BA-212.A
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CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-30 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
22																	
	119.48																
				.45	Shale	as above, stick, calcite-filled rootlets	31										
				.14	Coal	bright, broken stick											
				.17	Shale	dark gray, carbonaceous and coaly partings, stick											
23																	
				.86	Shale	as above, broken stick	28										
	121.01																
				1.21	Shale	as above, broken stick, highly broken in bottom half	27										
	122.22																
		122.20		.20	Coal	dull and bright, broken stick	25		20								
				.49	Coal	dull with bright, broken											
				.07	Coal	dull and bright, broken stick											
				.58	Coal	dull, broken											
	123.75																
				.77	Coal	dull and bright, broken stick	32										
24																	
				.06	Coal	dull and bright, broken stick			21								
				.30	Coal	dull with bright, broken stick	26										
				.04	Coal	dull, shaley, calcite-filled rootlets											
				.37	Coal	dull with bright, broken stick											
	125.27																
				.26	Coal	dull, broken stick	23										
				.27	Coal	dull and bright, broken											
				.99	Coal	dull, broken											
	126.80																
				.63	Coal	dull, broken stick											
				.47	Coal	dull with bright, broken stick	38										
				.40	Coal	dull with bright, shaley, calcite-filled rootlets, broken											

ALL LINEAR UNITS IN METRES

† :-RA/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF —— FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-30 CONTINUED

FILE No SA-212 A
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CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-30 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
24																	
				.15	Coal	bright with dull, broken			21								
	128.37																
				.15	Coal	dull and bright, broken											
				.11	Coal	dull, broken to highly broken											
25																	
				.24	Coal	dull, broken											
				.10	Shale	dark gray, carbonaceous and coaly partings, broken	35										
				.26	Coal	dull, shaley, calcite-filled rootlets, broken											
				.48	Coal	dull, very shaley, calcite-filled rootlets, broken											
	129.84																
				.40	Coal	dull, highly broken to powder											
	131.37																
				.43	Coal	dull, shaley, calcite-filled rootlets, broken	11										
				.30	Coal	dull, shaley, broken											
				.10	Coal	dull, shaley, calcite-filled rootlets, broken											
				.38	Coal	dull, highly broken to powder											
	132.89																
				.45	Coal	dull, highly broken to powder											
26																	
				.73	Coal	dull, highly broken to powder											
	132.42																
				.33	Coal	dull, highly broken to powder (wash)											
				.06	Coal	bright, highly broken (wash)											
				.13	Coal	dull, highly broken (wash)											
				.11	Coal	dull, powder (wash)											
	135.94																
				.73	Coal	dull, sheared, highly broken											

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF —— FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-30 CONTINUED

FILE No BA-212A
REVISED Nov 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-30 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
26																	
				.35	Coal	dull, powder, highly sheared			21								
	137.41																
				.05	Coal	dull with bright, highly broken											
				.07	Coal	dull and bright, highly broken											
				.87	Coal	dull, highly broken to powder											
	138.68																
				.21	Coal	dull, shaley, broken											
				.35	Coal	dull with bright, sheared, highly broken to powder											
				.14	Coal	dull, highly broken											
27																	
				.26	Coal	dull with bright, highly broken, wash											
				.29	Coal	dull, highly broken to powder											
	140.82																
				.14	Coal	dull with bright, broken											
				.28	Coal	dull, powder											
	142.34																
				.18	Coal	dull, powder											
				.05	SST	gray, medium grain, highly broken (wash)											
				.03	Coal	dull, powder											
				.07	Shale	dark gray, iron-stain, highly broken											
				.17	Coal	dull, powder											
				.11	Coal	dull, shaley, highly broken, wash											
				.49	Coal	dull, very shaley, calcite-filled rootlets, broken stick	35										
	143.87																
				.13	Coal	dull, shaley, highly broken, wash											
				.16	Coal	dull with bright, highly broken											
				.20	Coal	dull, powder, gray sandstone wash											

ALL LINEAR UNITS IN METRES

† •RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-30 CONTINUED

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-30 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS †
27				.18	Coal	dull, powder, sandstone wash			21								
				.15	Coal	dull, shaley, broken stick to broken	35										
				.35	Coal	bright with dull, sheared, highly broken											
				.30	Coal	dull with bright, sheared, highly broken											
			145.25	.26	Coal	dull with bright, highly broken											
	145.39																
				.26	Shale	coaly, dark gray, coaly partings, broken stick											
		145.65		.21	Coal	dull, sheared, highly broken to powder											
				.45	Coal	dull, highly broken to powder											
28																	
	146.91																
				.25	Coal	dull, sheared, highly broken											
				.20	Coal	dull with bright, sheared, broken to highly broken											
				.70	Coal	dull, sheared, highly broken to powder											
				.07	Shale	coaly, dark gray, coaly partings, broken											
			147.50	.32	Coal	dull, powder											
	148.44																
				1.06	Shale	coaly, dark gray, coaly partings, broken stick to broken stick											
				.12	Shale	as above, sheared, highly broken to powder											
	149.35																
				.60	Shale	coaly, dark gray, sheared, highly broken											
29																	
				.70	Shale	dark gray, slicked, highly broken											
				.35	SH/Coal	wash											
				.07	Shale	dark gray, highly broken											
	150.80																
				.28	Shale	dark gray, slicks, broken stick (20°,45°)											

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-30 CONTINUED

FILE No BA-212 A
REVISED Nov 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-30 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
29																	
				.40	Shale	as above, broken											
	151.49																
				.60	Shale	as above, broken stick	32										
		151.95	152.45	.20	Coal	dull, highly broken											
				.20	Shale	coaly											
		152.75		.10	Coal	dull with bright, shaley, highly broken											
	152.70																
				.08	Coal	shaley, broken stick	60										
				.24	Shale	dark gray, slicks, silty laminae											
				.25	Coal	dull with bright, broken stick											
			153.10	.10	Coal	as above, highly broken											
				.22	Shale	as above, broken stick											
30																	
				.48	Shale	as above, broken stick to broken											
	154.23																
				.70	Shale	as above, broken stick											
				.10	Shale	as above, broken											
	155.14																
		155.05		.45	Coal	dull, broken, slicked			22								
	156.06																
				.56	Coal	dull, highly broken			23								
				.10	Coal	dull, slicked, hard											
				.15	Coal	dull, broken											
	157.58																
				.80	Coal	dull, broken, some slicks											
				.13	Coal	dull, broken, hard											
	159.11																
31																	
				.05	Coal	as above, broken											

ALL LINEAR UNITS IN METRES

† •RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-30 CONTINUED

FILE No BA-212A
REVISED Nov 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-30 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE [°]	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
31																	
				.35	Coal	dull, slightly shaley, calcite-filled rootlets, stick	15		23								
				.22	Coal	as above, broken stick											
				.17	Coal	dull, bright, broken stick											
				.25	Coal	dull, broken stick											
				.12	Coal	dull and bright, broken stick											
	160.63																
				.85	Coal	dull with bright, broken stick											
				.15	Coal	dull and bright, mush											
	162.15																
				.45	Coal	dull, broken											
				.24	Coal	as above, broken, shaley											
				.15	Coal	as above, highly broken											
	163.37																
				.95	Coal	dull, dull with bright sections, broken stick											
32																	
	164.59																
			164.95	.38	Coal	dull, broken stick			√								
				.10	Shale	dark gray, slicked, broken											
				.50	Shale	as above, highly broken											
	165.51																
				.50	Shale	dark gray to black, slicked, highly broken											
				.18	Shale	as above, mush											
				.11	Shale	as above, stick											
				.10	Shale	as above, broken											
	166.73																
				.78	Shale	as above, broken to broken stick											
				.30	Shale	as above, highly broken											

ALL LINEAR UNITS IN METRES

†:-R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION [%]
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-30 CONTINUED

FILE No. BA-212 A
REVISED Nov. 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-30 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
32																	
	167.94																
				.15	Shale	as above, broken											
33																	
				.45	Shale	as above, broken stick, calcite-filled fractures	5										
		168.50	169.00	.20	Coal	dull, mush											
				.25	Shale	with coal stringers, broken stick	5										
		169.30		.05	SH/Coal	mush											
	169.77																
			169.75	.20	Coal	highly broken, highly sheared											
				.07	Shale	coaly											
				.50	Shale	dark gray, highly slicked, broken mush at base											
	171.30																
				.08	Shale	as above, broken											
				.05	Shale	mush											
		171.65		.10	Coal/SH	mush											
			172.00	.24	Coal	highly broken, dull with bright, highly slicked											
				.17	Shale	sandy, highly broken											
				.65	SST	medium grain, salt and pepper, stick	30										
	172.82																
				.76	SST	as above, stick											
34																	
				.73	SST	as above, stick at base,	34										
	174.35																
				1.56	SST	as above, stick	50										
	175.87																
				.46	SST	as above, broken stick											
				.70	SST	as above, with mud clasts, broken stick											

ALL LINEAR UNITS IN METRES

†:-RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-30 CONTINUED

FILE No. BA-212A
REVISED Nov. 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-30 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
34																	
				.24	SST	medium grain, salt and pepper, stick											
	177.39																
				.47	SST	as above											
35																	
				1.10	SST	as above, broken stick	40										
	178.92																
				1.43	SST	as above, stick	40										
	180.44																
				1.52	SST	as above, stick	40										
36																	
	181.97																
				1.53	SST	as above, stick	40										
	183.49					T.D.											

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-30 CONTINUED

FILE No BA-212 A
REVISED Nov 1978

CR I NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

DATE	
BEGIN	80.07.06
END	80.07.10

HOLE No. CM-80-31

HOLE PARTICULARS

LOCATION	5483693.86 N		
	669388.24 E		
ELEVATION	2026.98	HOLE BEARING (AZ°)	
TOTAL DEPTH	Logged: 224	HOLE ANGLE (°)*	90

TOTAL DEPTH Drilled: 224

LOGGING

LOGS RUN	GRN, DENS, CAL, DIR
LOGGED BY	DAVIES
OTHER TESTS	

COAL CORING PERFORMANCE

CORE DIAMETER		HQ
TOTAL	CORE RECOVERED	45.9
	LENGTH CORED	79.4
	CORE RECOVERY	57.8 %

EXAMINATION

LOG USED	Full Suite
No. OF SEAMS SAMPLED	
EXAMINER (S)	Sharman/Gilmar
DATE	80.07.13

BOX No	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	SEAM DESIG	♣ BEDDING ANGLE (°)	SUMMARY GEOTECH HARDNESS	SUMMARY GEOTECH FRAC. FREQ.	SUMMARY GEOTECH RQD	SAMPLE NO.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.
						0 to 11.28 No Core													
1	11.28			.70	Shale	silty, laminae, broken	35												
	12.50			1.11	Shale	broken to broken stick, dark gray													
	14.17			.64	Shale	broken stick, dark gray													
				.08	SST	light gray, fine, calcite filled fractures parallel to bedding	38												
				.20	Shale	as above													
				.25	Shale	with SS, fine interbeds, highly broken, prominent iron-stain, sticks, calcite filled fractures													
				.17	Shale	dark gray, broken stick	35												
	15.85			.24	Shale	dark gray, some siltstone interlaminae, broken stick													
2				1.18	Shale	as above, stick	45												
	17.37			.92	Shale	as above, broken stick to stick	39												
				.20	Shale	as above, with coal splits, highly broken iron-stain, sticks													
	18.90			1.13	Shale	dark gray, broken stick, some carbonaceous and coaly laminae													
	20.42			.37	Shale	as above, broken and broken stick													
3				.55	Shale	as above, broken stick													
	21.95			.73	Shale	as above, broken and broken stick	45												

ALL LINEAR UNITS IN METRES

* : MEASURED FROM THE HORIZONTAL PLANE

† : = R &/OR S — GOLDER ASSOCIATES HARDNESS CODE

• RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

♣ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-31

FILE No. BA-267
REVISED May 1980

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CONTINUED CM-80-31

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
				1.26	Shale	as above, broken stick											
	24.93																
				1.00	Shale	as above, broken and broken stick	45										
	26.52			1.18	Shale	as above, broken stick, silty laminae	38										
4	28.04			1.25	Shale	as above, with silty laminae, broken											
	29.56																
				1.40	Shale	dark gray, silty laminae, broken stick, iron-stain in middle	41										
	31.09																
				.11	Shale	as above											
5																	
				.58	Shale	as above, broken stick											
	32.61			1.11	Shale	as above, highly broken with some broken stick siltstone and sandstone interbeds, iron-stain carbonaceous partings											Fault
	34.18																
				1.23	Shale	as above	40										
	35.36																
				.45	Shale	as above, highly broken											
6																	
				.11	Shale	as above											
	36.58			1.11	Shale	as above, broken stick											
	37.49																
				1.39	Shale	as above, broken stick											
				.15	SST	fine											
	39.01																
				1.21	Shale	as above, broken stick	40										
	40.23																
7																	
				1.40	Shale	as above											
	41.76																
				.72	Shale	as above											
	43.28																

ALL LINEAR UNITS IN METRES

† :-RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CONTINUED CM-80.3

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-31 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	BEDDING ANGLE (°)▲	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	REMARKS†
				.59	Shale	carbonaceous, coaly, highly sheared broken, soft											
	44.80																
				.50	Shale	as above											
	46.33																
		46.85		.13	Coal				1								
	47.85																
				.05	Shale	dark gray, hard			2								
8	49.38																
	50.90			.01	Shale	as above, powder											
				.27	Coal	dull with bright, broken											
	52.12																
						No Core											
	53.34																
						NO CORE											
	54.25																
				.04	Coal	dull with bright, broken											
			55.60	.30	Coal	powder, wash											
	55.17																
				.25	Shale	carbonaceous partings, broken											
	55.47																
				.16	SST	fine, brecciated, clacite filled fractures	10°										FAULT
				.43	SH/SST	interbedded, brecciated, clacite filled fractures											
				.10	Shale	dark gray, wash											
	56.54			.57	SLST/SH	fine sandstone laminae, interbedded broken											
	57.30																
				.70	SLST/SH	as above, slicks, calcite fille, with soft sed deformation	40°										
9				.03	SLST/SH	as above											
	58.52																
				.40	SLST/SH	broken	45										

ALL LINEAR UNITS IN METRES

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)
FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CONTINUED

FILE No 8A-212 A
REVISED Nov 1978

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CONTINUED CM-80-31

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS† (Flow of Water or Gas? Yes☐ No☐ Indicate Depth)
9																	
	58.52																
				.15	Shale	wash											
	60.05																
				.88	Shale	carbonaceous partings, dark gray, broken											
	61.57																
				1.11	Shale	as above, with some coal partings, broken											
	63.09																
				.50	Shale	as above, broken											
10																	
				.59	Shale	as above, broken stick											
	64.62																
				.75	Shale	as above, with coaly wisps, stick											
				.40	Shale	as above, broken stick											
		66.7		.18	Coal	broken, some shale, dull			3								
	66.14																
			67.3	.06	Coal	dull, broken											
				.30	Shale	carbonaceous and coaly partings, broken	30										
				.10	Shale	carbonaceous, coaly, highly broken											
		67.6	68.7	.18	Coal	dull, broken to powder											
				0.50	Shale	dark gray, carbonaceous and coaly partings	20										
	67.67																
				.67	Shale	as above, broken											
11																	
				.07	Shale	as above, coaly at base, highly broken to wash											
	69.19																
				.50	Shale	as above, some slicks, broken stick to broken											
				.35	Shale	as above, highly broken, numerous slicks 10°											
	70.71																
				.45	Shale	as above, slicks, broken											
				.10	Wash	coal and shale wash											

UNITS USED: m☐ ft☐

† :RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CONTINUED CM-80-31

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-31 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS†
11	70.71																Flow of Water or Gas? Yes☐ No☐ Indicate Depth
				[illegible]	Shale	as above, slicks, broken	20										
				.05	Wash	shale, some coal											
	72.24																
				.60	Shale	as above, slicks, broken to highly broken											
	73.36																
		73.80	74.25	.06	Coal/SH	wash and highly broken											
				.26	Shale	as above, broken, slicks											
12																	
		74.60	75.20	.33	Coal	dull, broken to powder, shale wash at base											
	74.98																
				.12	Shale	dark gray, some carbonaceous and coaly partings, broken											
				.54	Shale	as above, broken stick											
		76.50	76.90	.23	Coal	shaley, dull, broken											
	76.50																
				1.06	Shale	as above, broken stick, slicks, wash at base	55										
	78.03																
				.43	Shale	dark gray, carbonaceous partings, slicks, broken stick											
				.30	Shale	as above, broken											
		79.40	79.90	.32	Coal/SH	interbeds, highly broken, slicks											
	79.55																
13																	
				.67	Shale	dark gray, carbonaceous partings, broken to broken stick, slicks											
	80.47																
				.30	Shale	as above, highly broken to wash, some coal											
				.32	Shale	as above, slicked, broken stick											
	81.69																
				.73	Shale	silty laminae, broken stick	03										
				.20	SH/Coal	interbeds, highly broken											

UNITS USED: m☐ ft☐

† :•RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-31 CONTINUED

CROWS RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CH-80-31 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS†
13																	Flow of Water or Gas? Yes☐ No☐ Indicate Depth
	82.75																
				.35	Shale	carbonaceous and coaly partings, slicked, broken stick											
				.25	Shale	as above, broken											
				.13	Coal	dull, rubble											
				.35	Shale	as above, calcite-filled fractures, broken stick											
14																	
				.10	Shale	as above, broken stick											
		83.70	84.10	.80	Coal	dull, mainly wash											
	84.28																
				.30	Shale	carbonaceous and coaly partings, broken stick	40										
		84.50	85.00	.08	Coal	dull, broken											
				.98	Shale	as above, broken stick											
				.07	SH/Coal	rubble											
	85.88																
				.62	Shale	as above, broken stick											
		86.20	86.30	.06	Coal	dull with bright, broken											
				.75	Shale	as above, silty laminae	20										
	87.48																
				.84	Shale	dark gray, silty laminae, some carbonaceous partings	15										
15																	
				.74	Shale	as above, stick and broken stick	26-16										
	89.00																
				1.41	Shale	as above	16										
	90.53																
				.12	Shale	as above, with dominant carbonaceous partings, highly broken											
				1.20	Shale	dark gray, silty laminae, soft sediment deformation prominant, some carbonaceous partings, stick and broken stick	12										

UNITS USED: m☐ ft☐

† :-R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CH-80-31 CONTINUED

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-31 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b	F.C. % d.b.	F.S.I	C.V.	REMARKS†
15																	Flow of Water Yes☐ or Gas? No☐ Indicate Depth
	92.03																
				.40	Shale	as above, broken stick	13										
16																	
				1.09	Shale	dark gray, carbonaceous and coaly partings, stick	27(f)										
	93.57																
				1.43	Shale	as above, broken stick	34(f)										
	95.10																
				1.30	Shale	as above, slightly silty at top, calcite-filled fractures at bottom, broken stick	30(f)										
	96.62																
17																	
				1.66	Shale	dark gray, silty, calcite-filled fractures, carbonaceous and coaly partings, stick to broken stick	26(f)										
	98.15																
				1.60	Shale	as above, calcite-filled fractures near top, broken stick	40(f)										
	99.67																
18																	
				1.44	Shale	as above, broken stick and broken	40(f)										
	101.19																
				1.48	Shale	dark gray, a few coaly wisps, silty at bottom, broken stick to broken	28(p)										
	102.72																
				1.47	Shale	dark gray, silty, coaly wisps, calcite-filled fractures in middle, broken stick	25(f)										
	104.24																
19																	
				1.28	Shale	as above, calcite-filled fractures at bottom, broken stick to broken	43										
	105.77																
				1.53	Shale	dark gray, silty near bottom, coaly wisps, a few calcite-filled fractures, broken stick	33(f)										
	107.29																
				1.55	Shale	as above, silty in middle, calcite-filled fractures in middle, stick to broken stick	40										

UNITS USED: m☐ ft☐

† *RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
*RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-31 CONTINUED

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-31 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS†
19	108.81																Flow of Water or Gas? Yes ☐ No ☐ Indicate Depth
				.73	Shale	dark gray, a few coaly wisps, broken stick	43										
20																	
				.68	Shale	dark gray, a few coaly wisps, broken stick	42										
	110.34																
				.56	Shale	carbonaceous and coaly partings, dark gray, broken to rubble	33(f)										
	111.86																
				1.35	Shale	dark gray, silty, coaly wisps, calcite-filled fractures, broken	22(f)										
	113.08																
				.59	Shale	dark gray, carbonaceous and coaly partings, calcite-filled fractures at top, broken to rubble	40										
	114.30																
				.44	Shale	as above, calcite-filled fractures, stick	30(f)										
21																	
				.82	Shale	slightly silty, dark gray, carbonaceous and coaly partings, broken stick, calcite-filled fractures	29(f)										
	115.98																
				.40	Shale	dark gray, coaly shale interbeds, broken to rubble, wash near bottom											
	117.35																
		116.20	117.90	.68	Coal	rubble, dull with bright			4								
	118.87																
		118.20	118.50	[illegible]	COAL	[illegible]											
		118.90		.15	Coal	dull, coaly shale near bottom, rubble			5								
	119.79																
				.26	Coal/SH	shale is dark gray, rubble; coal is dull, powder											
	120.70																
			121.40	.17	Coal	dull, highly broken											
	121.31																
				.53	Coal/SH	shale is dark gray to brown, highly broken; coal is dill, highly broken to powder											

UNITS USED: m☐ ft☐

† :RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
*RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-31 CONTINUED

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-31 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS ?
21																	Flow of Water Yes☐ or Gas? No☐ Indicate Depth
	122.83																
		122.00		.44	Coal	dull, powder			5								
22																	
				.16	Coal	dull, highly broken, some shaley											
	124.36																
				.87	Coal	dull, highly broken to powder, coaly shale near top and bottom											
	125.88																
				.44	Coal	dull with bright, highly broken to powder											
				.60	Coal	shaley	30(f)										
	127.71																
				1.10	Coal	dull with some bright, highly broken to powder											
	129.42																
				.06	Coal	dull, broken											
				.23	Coal	shaley											
23																	
				.86	Coal	dull, highly broken to powder											
	131.06																
				1.20	Coal	dull, highly broken to powder, some dark gray coaly shale											
	132.74																
				1.03	Coal	dull with bright, broken to powder											
	134.42																
				.53	Coal	dull, highly broken											
24																	
				.55	Coal	dull, highly broken											
	135.94																
				1.36	Coal	dull, highly broken to powder	20(f)										
	137.46																
				.34	Coal	dull, highly broken											
				.23	Coal	dull, shaley, broken to highly broken											
				.40	Coal	dull, highly broken											

UNITS USED: m☐ ft☐

† :RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-31 CONTINUED

CROWS NEST RESOURCES LIMITED

CORE or COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CH-80-31 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS† Flow of Water or Gas? Yes☐ No☐ Indicate Depth
24																	
	138.99																
				.98	Coal	dull, broken to powder			5								
25																	
	140.51																
				.20	Coal	dull with bright, broken											
				.34	Coal	dull, broken stick											
				.30	Coal	dull, broken											
			142.40	.12	Coal	powder											
				.20	Shale	dark gray, carbonaceous and coaly partings											
	142.07																
				.47	Shale	as above, slicks, broken											
				.70	Shale	as above, highly broken											
	143.44																
				.80	Shale	as above, broken stick	0										
				.25	Shale	as above, highly broken											
				.28	Shale	as above, broken stick											
26																	
				.66	Shale	carbonaceous, coaly, with coal interbeds and partings, highly broken and sheared											
	145.88																
				.35	Shale	as above											
		146.80		.45	Coal	dull with bright, highly broken to powder			6								
	146.95																
				.22	Coal	dull, broken stick											
				.12	Coal	dull with bright, rubble											
				.08	Coal	powder											
				.35	Coal	powder											
	148.48																
			148.35	.25	Coal	dull with bright, rubble			7								
				.02	Shale	carbonaceous, highly broken											

UNITS USED: m☐ ft☐

† *RS/OR S — GOLDER ASSOCIATES HARDNESS CODE
*RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CH-80-31 CONTINUED

CROWS N[illegible] RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-31 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS ?
26																	Flow of Water Yes☐ or Gas ? No☐ Indicate Depth
				.10	Coal	dull with bright			7								
				.05	Shale	carbonaceous, hard, broken											
		148.90		.15	Coal	dull, broken to powder											
	150.00																
				.35	Coal	dull with bright, broken to powder											
	150.61																
				.11	Shale	carbonaceous, rubble											
				.16	Coal	dull, powder											
27																	
				.50	Coal	dull with bright, powder											
	151.83																
				.15	Coal	dull, rubble											
				.15	Coal	dull, broken											
				.16	Coal	dull with bright, rubble											
	153.05																
				.38	Coal	dull with bright, broken											
				.13	Coal	powder											
				.06	Coal	dull, broken											
				.12	Coal	powder											
				.33	Shale	coaly, carbonaceous, broken	0										
	154.42																
				.08	Shale	carbonaceous, broken											
				.15	Coal	dull with bright, broken											
				.50	Coal	powder											
	155.94																
				.40	Coal	dull, powder											
28																	
			157.60	.72	Coal	dull, highly broken to powder											
				.20	SH/Coal	shale is dark gray, broken; coal is dull, powder											

UNITS USED: m☐ ft☐

† •RS/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-31 CONTINUED

CROWS N[illegible] RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-31 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS †
28																	Flow of Water Yes☐ or Gas? No☐ Indicate Depth
	157.47																
		158.50		1.02	Coal	dull, highly broken to powder, minor carbonaceous shale			7								
	159.07			.93	Coal	dull, broken to powder, minor shaley coal											
	160.52			.70	Coal	dull, broken											
				.52	Coal	dull and bright, broken stick to broken											
29				.37	Coal	dull with bright, broken stick											
	162.00			.43	Coal	dull with bright, broken											
				.97	Coal	dull, broken to powder											
	163.60			.76	Coal	dull, highly broken to powder, shaley coal in middle	20(p)										
	165.20																
			165.70	.90	Coal	shaley, broken, dull											
				.54	Shale	coaly, broken											
	166.70																
		167.10	167.50	.15	Coal/SH	dull, powder											
30				.74	Shale	carbonaceous and coaly partings, slicks, broken											
	168.25			1.27	Shale	as above, broken stick	5(f)										
	169.62			1.63	Shale	as above, broken											
	171.30			.28	Shale	as above, broken stick											
31				1.41	Shale	as above, a few calcite-filled fractures near bottom, stick to broken	16(f)										

UNITS USED: m☐ ft☐

† :•R&/OR 5 — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-31 CONTINUED

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-31 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS†
31																	Flow of Water Yes☐ or Gas? No☐ Indicate Depth
	172.82																
				1.50	Shale	as above, calcite-filled fractures absent, broken stick to powder	14(f)										
	174.35																
				1.20	Shale	as above, broken stick	9(f)										
32																	
				.30	Shale	as above, broken to powder											
	175.87																
				1.31	Shale	as above, broken											
	177.39																
				1.20	Shale	as above, broken stick to broken	5(f)										
	178.61																
				1.04	Shale	as above, broken stick	16										
33																	
				.76	Shale	as above, broken											
	180.79																
				1.63	Shale	as above, broken stick to powder											
	181.97																
				.92	Shale	dark gray, carbonaceous and coaly partings, slicks, broken stick to broken	9(f)										
	183.49																
				.59	Shale	as above, stick	9										
34																	
				.69	Shale	as above, bright coal interbed 2 cm, broken stick	13(f)										
	185.01																
				.38	Shale	as above, broken											
		185.40		.20	Coal/SH	shale as above, highly broken, wash; coal is dull, wash											
				.48	Coal	dull, broken stick	16										
	186.23																
				.60	Coal	calcite-filled rootlets, broken to powder											
	187.45																
				.35	Coal/SH	shale is dark gray, carbonaceous and coaly partings; coal is dull with bright, highly broken											

UNITS USED: m☐ ft☐

† :RB/OR S — GOLDEN ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-31 CONTINUED

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CH-80-31 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS†
34																	Flow of Water Yes☐ or Gas? No☐ Indicate Depth
	188.98																
			190.00	.68	Coal	dull, powder, shale, wash at base			9								
	190.50																
				.23	Coal/SH	as above, highly broken to powder, wash											
35																	
		190.50		.31	Coal	as above, highly broken to powder											
	192.02																
				.75	Shale	dark gray, carbonaceous and coaly partings, slicks, broken	11										
				.42	Coal	dull, highly broken											
	193.55																
				.89	Coal	dull with bright, broken stick											
			195.00	.53	Coal	dull, shaley at base											
	195.07																
				.74	Shale	dark gray, carbonaceous and coaly partings, broken stick	13										
36																	
				.38	Shale	as above, broken stick											
	196.60																
		196.60		.32	Coal/SH	shale as above, highly broken; coal is dull, highly broken to powder											
	197.21																
			197.50	.52	Coal	shaley, dull, highly broken											
				.82	Shale	dark gray, carbonaceous and coaly partings, slicks, broken	23										
	198.73																
		198.80		1.60	Coal	dull with bright, shaley at bottom, broken											
	200.25																
				.23	Coal	dull, hard, highly broken											
37																	
				1.00	Coal	dull with bright, hard, broken											
	201.47																
				.70	Coal	dull with bright, hard, highly broken to powder											

UNITS USED: m☐ ft☐

† :RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CH-80-31 CONTINUED

AREA: CORBIN — COAL MOUNTAIN

HOLE No. CM-80-31 CONTINUED

PAGE 15 OF

BOX No.	Num.	DEPTH FROM	DEPTH TO	TH	MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	BEDDING ANGLE (▲)	SEAM DESIG	SAMPLE No.	MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS† Flow of Water Yes☐ or Gas? No☐ Indicate Depth
37		203.00															
				.92	Coal	dull, highly broken											
		204.52															
				.86	Coal	dull, broken, 4 cm siltstone split in middle			9								
		205.44															
				.50	Coal	dull with bright, hard, broken, very shaley	0										
38																	
			206.50	.15	Coal	dark gray, coaly and carbonaceous partings, slicks, medium grain, gray sandstone lens in middle, broken	13(f)										
		206.65															
			207.70	.71	SLST/SH/ Coal	dull to dull with bright, broken to highly broken, siltstone at top	20(f)										
		207.72															
			209.00	1.04	Coal	dull and bright, grading to dull at bottom, hard, broken stick to broken											
		209.09															
				.77	Shale	dark gray, minor coal, broken stick											
				.52	Shale	as above, carbonaceous, broken	15(p)										
39																	
				.10	Shale	as above, highly broken	15(g)										
		210.02															
			1.00	SH/Coal		coal is dull, hard, highly broken; shale is dark gray, carbonaceous and coaly partings, slicks, broken	10(f)										
		211.53															
		212.00		.69	Coal	dull with bright, highly broken, shale interbeds											
		212.75															
			214.80	.80	Coal	dull, highly broken, very shaley	10										
		214.02															
				.66	SH/Coal	dull, highly broken, highly slicked	11										
		215.89															
				.72	SLTST	dark gray, medium grained sandstone in middle, broken stick											

UNITS USED: m☐ ft☐

† :R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
*RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-31 CONTINUED

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-31 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS†
40																	Flow of Water Yes☐ or Gas? No☐ Indicate Depth
		216.65		.12	Coal	dull, highly broken			11								
	217.02																
				.87	Coal	dull, highly broken to powder											
	218.54																
			219.35	.30	Coal	dull, highly broken											
				.58	Shale	dark gray, carbonaceous and coaly partings, slicks, broken											
	219.76																
				.19	Shale	as above, broken											
				1.19	SST	light gray, medium-grain, strick, coal inclusion	17										
	221.38																
				.82	SST	as above, strick	17										
	224					T.D.											
						NOTE: Core Box 41 was lost and not logged											

UNITS USED: m☐ ft☐

†: •R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-31 CONTINUED

DIRECTIONAL SURVEY

CM-80-32

NO.	CABLE DEPTH (M)	SLANT ANGLE *	SLANT ANGLE BEARING
	70	87.5	108

* Measured from Horizontal Plane

CROW NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

DATE	
BEGIN	80.08.15
END	80.08.16

HOLE No. CM-80-32

HOLE PARTICULARS

LOCATION	5483791.55 N		
	669796.09 E		
ELEVATION	1924.6	HOLE BEARING (AZ°)	
TOTAL DEPTH	LOGGED: 70.5 m	HOLE ANGLE (°)*	
	DRILLED: 71 m		

LOGGING

LOGS RUN	GRN,CAL,DENS,FBL,DIR
LOGGED BY	DAVIES/ROKE
OTHER TESTS	

COAL CORING PERFORMANCE

CORE DIAMETER		HQ
TOTAL	CORE RECOVERED	28.82
	LENGTH CORED	34.4
	CORE RECOVERY	83.8 %

EXAMINATION

LOG USED	Full Suite
No. OF SEAMS SAMPLED	
EXAMINER (S)	Sharman
DATE	80.09.08

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS†
		0	9.45			No Core											
1																	
	9.45																
				1.44	SST/SH	sandstone is very fine grain, medium gray; shale is dark gray, silty and carbonaceous, coaly partings, broken stick to broken	34										
	10.87																
				1.50	Shale	dark gray, carbonaceous partings, siltstone, interbeds, broken stick to broken	33										
	12.34																
				1.50	Shale	as above, silty interbeds, carbonaceous partings, some slicks, broken stick to broken	31										
2																	
				.20	Shale	as above, broken											
	13.87																
				.53	Shale	as above, broken											
				.09	Coal	dull, highly broken to powder	37										
				.77	Shale	medium gray, some iron-stain, broken											
	15.39																
				.45	Shale	medium gray, silty, broken											
				.56	Shale	dark gray, carbonaceous and coaly partings, broken stick to broken	39										
				.54	Shale	medium gray, silty, some fine sandstone interbeds, broken stick											
	16.92																
				.25	Shale	medium gray, silty, broken											
				.10	SST	medium gray, fine-grained, small scale cross-beds, broken	43										
				.47	SLTST	medium gray, iron-stain, broken stick to broken											

ALL LINEAR UNITS IN METRES

* : MEASURED FROM THE HORIZONTAL PLANE

† : • R &/OR S — GOLDER ASSOCIATES HARDNESS CODE

• ROD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-32

FILE No. BA-211A
REVISED Nov. 1978

CROW[illegible]EST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-32 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS†
3				.37	SLTST	as above, broken											Flow of Water or Gas? Yes☐ No☐ Indicate Depth
				.13	SLTST	as above, highly broken											
	18.44																
				1.45	Shale	medium gray, silty interbeds, carbonaceous and coaly partings, broken stick to broken	44										
	19.81																
				1.08	Shale	dark gray, carbonaceous and coaly partings, broken stick to broken	46										
	20.88																
				1.04	Shale	as above, broken to highly broken											
4																	
	21.95																
				.35	Shale	as above, broken stick	42										
		22.15		.38	Coal	dull, broken stick	44										
			22.80	.26	Coal	dull, shaley, broken stick to broken											
				.05	Shale	dark gray, carbonaceous partings, broken											
	23.01																
				1.55	Shale	dark gray, carbonaceous partings, silty, broken stick to broken	40										
	24.54																
				.63	Shale	as above, coaly partings, broken stick	39										
		25.10		.65	Coal	dull with bright, broken			71								
				.17	Coal	dull with some bright, highly broken to powder											
	26.06																
5																	
				.23	Coal	dull, highly broken			72								
				.28	Coal	dull, broken stick to broken											
				.26	Coal	dull, highly broken to powder											
				.05	Shale	black, carbonaceous and coaly partings											
				.18	Coal	dull and bright, broken to highly broken											
				.31	Coal	dull, highly broken to powder											

UNITS USED: m☐ ft☐

†: •R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-32 CONTINUED

CROWN[illegible]ST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-32 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS† Flow of Water or Gas? Yes☐ No☐ Indicate Depth
5																	
	27.58																
				.23	Coal	dull, broken			72								
				.37	Coal	dull, powder											
				.28	Coal	dull, broken											
	28.65																
				.05	SLTST	medium gray, carbonaceous and coaly partings, broken stick	45										
				.60	Coal	dull, broken to highly broken											
				.18	Coal	dull, shaley, broken stick to broken											
				.14	Coal	dull, highly broken to powder											
	29.72																
				.78	Coal	dull, highly broken											
				.11	Coal	dull and bright, highly broken											
6				.19	Coal	dull, highly broken											
				.21	Coal	dull, broken stick	35										
			30.80	.15	Coal	dull, shaley, broken stick											
				.15	Shale	black, carbonaceous and coaly partings, broken stick											
	31.09																
				.22	Shale	as above, coal interbeds, 1 cm thick, broken stick	34										
		31.25		1.10	Coal	dull with bright, broken stick to broken											
				.12	Coal	dull, highly broken											
	32.61																
				.19	Coal	dull, highly broken											
				.38	Coal	dull with some bright, broken stick to broken											
				.55	Coal	dull, highly broken to powder											
	33.83																
				.51	Coal	dull, highly broken to powder											

UNITS USED: m☐ ft☐

†: *R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
*RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-32 CONTINUED

CROWS[illegible]T RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-32 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS†
6	33.83																Flow of Water or Gas? Yes☐ No☐ Indicate Depth
				.19	Coal	dull, broken stick			72								
				.15	Coal	dull, broken											
7																	
				.37	Coal	dull with bright, broken stick to broken											
	35.20																
				.47	Coal	dull with bright, broken											
				.19	Coal	dull, highly broken											
				.04	Shale	dark gray, carbonaceous, broken											
			35.80	.19	Coal	dull, powder											
	35.97																
				.83	Shale	dark gray, carbonaceous and coaly partings, broken stick to broken											
		36.90		.12	Coal	dull, broken			73								
	37.19																
				.35	Coal	dull and bright, broken											
				.15	Shale	black, coaly, broken											
				.38	Coal	dull and bright, broken											
				.33	Coal	dull, powder											
	38.71																
				.63	Coal	dull, broken											
8																	
				.41	Coal	dull, powder			74								
	39.93																
				.23	Coal	dull with bright, broken											
			40.30	.42	Coal	dull, broken											
				.32	Shale	dark gray, silty interbeds, carbonaceous partings, broken stick	14										
		41.10		.46	Coal	dull, broken											

UNITS USED: m☐ ft☐

† :*RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
+RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CONTINUED CM-80-32

CROW EST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CONTINUED CM-80-32

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ DECONG ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS†
8	41.45																Flow of Water Yes☐ or Gas? No☐ Indicate Depth
				.46	Coal	dull, sheared, broken to highly broken			74								
				.95	Coal	dull, highly broken to powder											
	42.98																
				.47	Coal	dull, broken to highly broken											
				.55	Coal	dull, powder											
9																	
				.12	Coal	dull, highly broken											
	44.20																
				.27	Coal	dull, broken stick											
				1.07	Coal	dull, broken											
				.15	Coal	dull, powder											
	45.81																
				.33	Coal	dull, broken											
				.65	Coal	dull, powder											
	47.24																
				.48	Coal	dull, broken to highly broken											
			48.50	.33	Coal	dull, broken											
	48.25																
				.79	Shale	dark gray, carbonaceous partings, coaly interbeds, broken											
		49.10		.14	Coal	dull, sheared, highly broken to powder											
10																	
	49.38																
				.12	Shale	dark gray, carbonaceous partings											
				.70	Coal	dull, broken											
	50.29																
				.32	Coal	dull, highly broken											
				.13	Coal	dull, shaley, broken stick	18										
				.35	Coal	dull, powder											

UNITS USED: m☐ ft☐

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CONTINUED CM-80-32

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	[illegible]IN
AREA	COAL MOUNTAIN

HOLE No. CONTINUED 01-80-32

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	BEDDING ANGLE (°)▲	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS†
10	51.21																Flow of Water Yes☐ or Gas? No☐ Indicate Depth
				.53	Coal	dull, broken stick			74								
				.30	Coal	dull, highly broken to powder											
	52.43																
				.18	Coal	dull, highly broken											
				.10	Coal	dull and bright, highly broken											
				.13	Coal	bright, broken											
				.09	Coal	dull with bright, highly broken											
				.46	Coal	dull, broken stick to broken											
				.14	Coal	dull, powder											
	53.65																
				.28	Coal	dull with some bright, broken											
				.22	Coal	dull, sheared, highly broken											
11																	
				.19	Coal	dull with some bright, broken											
				.39	Coal	dull with bright, highly broken to powder											
				.06	Coal	dull, broken											
	54.86																
				.13	Coal	dull, highly broken											
				.34	Coal	dull, shaley, some bright bands											
				.20	Coal	dull, powder, minor coaly shale											
	55.78																
				.37	Coal	dull with bright, sheared, broken to highly broken											
				.46	Coal	dull, powder											
				.09	Coal	dull with some bright, highly broken to powder											
	57.00																
				.30	Shale	coaly, broken stick, slicks											
				.19	Coal	dull, sheared, broken											

UNITS USED: m☐ ft☐

† :-RB/OR S — GOLDER ASSOCIATES HARDNESS CODE

•RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CONTINUED 01-80-32

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-32 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS† Flow of Water Yes☐ or Gas? No☐ Indicate Depth
11	57.00																
				.24	Coal	shaley, broken			74								
				.21	Coal	shaley, dull, highly broken to powder											
	57.91																
				.36	Coal	dull with bright, broken											
				.40	Coal	dull, highly broken to powder											
12																	
	59.13																
				.73	Coal	dull, sheared with some bright broken to powder											
	60.20																
				.26	Coal	dull, powder											
				.03	Shale	broken											
				.26	Coal	dull, powder, minor shale, broken wash											
			61.00	.25	Coal	dull, highly broken to powder			V								
				.48	SST	medium gray, medium-grained, broken stick	58										
	61.57																
				1.56	SST	as above, stick, some coaly partings	30(p)										
	63.09																
				.24	SST	as above, broken stick	3										
13																	
				.85	SST	as above, quartz-filled fractures, stick											
				.29	SST	medium gray, medium-grained, coaly partings, slicked, broken											
				.22	SST	medium gray, medium-grained, coaly partings, broken stick	14										
	64.62																
				1.50	SST	medium gray, medium-grained, quartz crystals, bedding steepens to bottom, broken stick	16 26										
	66.14																
				1.43	SST	medium gray, medium-grained, few slicks in bottom half, calcite-filled fractures, stick	22										

UNITS USED: m☐ ft☐

† :RQD/OR $ — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-32 CONTINUED

CROWS N/ RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-32 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS†
14																	Flow of Water Yes☐ or Gas? No☐ Indicate Depth
				.12	SST	medium gray, medium-grained, with pyrite along fracture, broken stick											
	67.67																
				1.61	SST	medium gray, medium-grained, coaly partings, some calcite-filled fractures, slicks, broken stick	1										
	69.19																
				1.58	SST	as above, broken stick	4										
	70.71																
				.88	SST	as above, broken stick	16										
15																	
				.72	SST	as above, broken stick	32,22										
						T.D.											

UNITS USED: m☐ ft☐

† :•RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-32 CONTINUED

DIRECTIONAL SURVEY (DAVIES)

CM-80-33

DEPTH (M)	SLANT ANGLE (°) *	SLANT ANGLE BEARING (AZ°)
105	67.5	268

* Measured From Horizontal

CR NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

DATE		
BEGIN	80.08.18	
END	80.08.21	

HOLE No. CH-80-33

HOLE PARTICULARS

LOCATION	5483724.14 N		
	669798.19 E		
ELEVATION	1933.0	HOLE BEARING (AZ°)	
TOTAL DEPTH	DRILLED: 106.5	HOLE ANGLE (°)*	
	LOGGED: 106 m		

LOGGING

LOGS RUN	Gamma, Dens, Cal, Dir
LOGGED BY	Davies
OTHER TESTS	

COAL CORING PERFORMANCE

CORE DIAMETER		HQ
TOTAL	CORE RECOVERED	40.5
	LENGTH CORED	48.8
	CORE RECOVERY	83.0 %

EXAMINATION

LOG USED	Full Suite
No. OF SEAMS SAMPLED	
EXAMINER (S)	K.S., Lysenko Buchlow
DATE	80.09.09

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ RECOVERY ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % res(dry)	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS †
1	10.97																
		11.30		.56	Coal	dull with bright, broken, iron-stain			80								
				.81	Coal	as above, some shearing, broken stick	1										
				.20	Coal	dull, broken											
	12.49																
				.37	Coal	dull, broken, iron-stain, pyrite			81								
				.18	Coal	dull, iron-stain, broken stick	15										
				.28	Coal	dull with bright, broken stick											
				.25	Coal	dull with bright, shaley, broken stick, iron-stain											
				.17	Coal	dull, broken to highly broken											
				.10	Coal	dull, shaley in part, stick											
	14.02																
				.54	Coal	shaley, dull, broken stick to broken											
				.40	Coal	minor shale, dull with bright, broken stick											
				.20	Coal	dull, shaley, bright bands, broken stick	15										
				.29	Coal	dull with bright, broken to highly broken											
2																	
	15.45																
				.44	Coal	dull, highly broken to powder, sheared											
				.34	Coal	dull with bright, broken											
				.67	Coal	dull and bright, broken stick											
	17.07																
				.28	Coal	dull, broken	2										
				.74	Coal	dull with bright, broken stick											

ALL LINEAR UNITS IN METRES

* : MEASURED FROM THE HORIZONTAL PLANE

† : • R 6/OR 5 — GOLDER ASSOCIATES HARDNESS CODE

• ROD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CH-80-33

FILE No. BA-211A
REVISED Nov. 1978

CROWS N RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-33 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS ?
2																	Flow of Water Yes☐ or Gas ? No☐ Indicate Depth
				.10	Shale	dark gray, carbonaceous and coaly partings, slicks, broken stick			81								
				.08	Coal	dull, powder											
	18.44																
				.35	Coal	dull, powder											
				.34	Coal	shaley, broken stick, dull											
				.60	Coal	dull with bright, broken											
3																	
	19.96																
				.25	Coal	shaley, dull with bright, broken stick	0										
				.79	Coal	dull, broken stick											
				.13	Coal	dull, powder											
	21.34																
				.18	Coal	dull, minor shaley coal, broken stick											
				.48	Coal	dull with bright, shaley, broken stick	3										
				.19	Coal	dull with bright, broken stick											
				.67	Coal	dull, broken stick											
	22.86																
				.29	Coal	dull, broken stick											
				.75	Coal	dull with bright, broken stick											
				.15	Coal	dull with bright, highly broken to powder											
	24.38																
				.34	Coal	dull, highly broken											
4				.50	Coal	dull, broken											
	25.48																
				.53	Coal	dull, sheared, broken to highly broken											
				.32	Coal	dull, highly broken to powder											
	26.37																
			26.40	.12	Coal	dull, sheared, powder											

UNITS USED: m☐ ft☐

1 :*RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
*RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-33 CONTINUED

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	Corbin
AREA	COAL MOUNTAIN

HOLE No. CM-80-33 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS†
4																	Flow of Water Yes☐ or Gas? No☐ Indicate Depth
				1.20	SLTST	slicks, calcite-filled fractures, carbonaceous partings, medium gray, some very fine sandstone layerings, broken to broken stick	14										
	27.77																
				1.61	Shale	silty interbeds, calcite-filled fractures, slicks, broken stick, medium gray											
5																	
	29.26																
				1.62	Shale	silty, medium gray, calcite-filled fractures, slicks, iron-stain along partings, broken stick, siltstone at base											
	30.79																
				.10	Shale	medium gray, broken stick											
				.30	Shale	dark gray, broken, carbonaceous											
				.70	Shale	dark gray, slicks, carbonaceous coaly partings, broken to highly broken											
	31.85																
				.28	Shale	medium gray, carbonaceous partings, some calcite, slicks, broken											
				1.07	Shale	medium gray, slicks, coaly partings, broken stick, carbonaceous											
	33.01																
				.37	Shale	dark gray, coaly parting, carbonaceous, calcite, slicks, broken stick											
6																	
				.45	Shale	as above, stick											
	33.84																
				1.60	Shale	as above, broken stick											
	35.36																
				.54	shale	as above, iron-stains in fractures, broken stick											
				1.39	Shale	medium gray, broken stick											
				.26	Shale	silty, medium gray, slicks, broken stick											
	36.88																
				.71	Shale	dark gray, a little silty, carbonaceous, slicks, broken stick	0										

UNITS USED: m☐ ft☐

† •RB/DRS — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-33 CONTINUED

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-33 CONTINUED

BOX No	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS*
7																	Flow of Water Yes☐ or Gas? No☐ Indicate Depth
				.88	Shale	medium gray, carbonaceous, coaly partings, broken stick	8										
	38.41																
				.58	Shale	medium gray, slightly carbonaceous, broken											
				.77	Shale	medium gray, carbonaceous, slicks, broken											
	39.47																
				1.40	Shale	medium gray, carbonaceous, slicks, calcite in fractures, broken stick	7										
	40.69																
				.54	Shale	dark gray, carbonaceous, slicks, broken stick											
				.29	Shale	dark gray, carbonaceous, coaly partings, slicks, broken stick											
8																	
				.50	Shale	as above, broken stick											
	41.91																
				1.20	Shale	medium gray, calcite and pyrite in fractures, slicks, broken stick											
	42.98																
				.26	Shale	medium gray, broken stick											
				1.45	Shale	darker gray, slicks abundant, calcite, broken stick, pyrite along some slicks	15										
	44.50																
				.18	Shale	dark gray, heavily sheared, slicks, broken											
				.53	Shale	dark gray, coaly partings, broken to broken stick											
				.06	Coal	dull, broken											
				.26	Shale	medium gray, broken											
9																	
				.56	Shale	medium gray, slicks, coaly parting, broken stick											
	46.03																
				.87	Shale	dark gray, coaly partings, broken stick	27										
				.75	Shale	medium gray, iron-stain, few slicks, carbonaceous broken stick											

UNITS USED: m☐ ft☐

† :*R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
*RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-33 CONTINUED

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-33 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS !
9	47.55																Flow of Water Yes☐ or Gas? No☐ Indicate Depth
				1.00	Shale	medium gray, carbonaceous, few slicks, some iron-stain, broken stick											
				.62	Shale	dark gray, more carbonaceous, broken stick											
	49.07																
				.58	Shale	dark gray, carbonaceous, some iron-stain, broken stick											
10				1.02	Shale	medium gray, carbonaceous, some iron-stain, stick	45										
	50.60																
				.55	Shale	medium gray, carbonaceous, broken stick											
				.71	Shale	dark gray, slicks, carbonaceous, coaly partings, broken	53										
				.36	Shale	medium gray, carbonaceous, some iron-stain, broken stick											
	52.12																
				.23	Shale	dark gray, carbonaceous, some iron-stain, slicks, broken stick											
				.50	Shale	darker gray, carbonaceous, coaly partings, broken stick											
				.92	Shale	dark gray, coaly partings, carbonaceous broken stick	66										
11	53.65																
				.95	Shale	dark gray to black, coaly partings, carbonaceous, stick, some pyrite											
				.47	Shale	dark gray, coaly partings, sheared, carbonaceous, stick											
	55.17																
				.47	Shale	dark gray, coaly partings, carbonaceous, broken											
				.76	Shale	medium gray, stick, sandstone interbeds	65										
				.10	SLTST	light gray, broken											
	56.69																
				.44	Shale	medium gray interbedded with sandstone and siltstone, broken stick											

UNITS USED: m☐ ft☐

! = R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
= RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-33 CONTINUED

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-33 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS †
11	56.69																Flow of Water Yes☐ or Gas? No☐ Indicate Depth
				.26	Shale	dark gray, carbonaceous, broken stick											
				.41	Shale	medium gray, with sandstone, a little carbonaceous, broken stick											
				.20	SLTST	medium gray, coaly partings, carbonaceous, broken stick	55										
12																	
				.18	Shale	medium gray, broken stick											
	58.22																
				1.10	Shale	dark gray, sheared, carbonaceous, stick											
				.50	Shale	dark gray, coaly partings, slicks, broken stick, carbonaceous											
	59.74																
				.64	Shale	dark, coaly partings, broken stick											
		60.20	60.70	.36	Coal	shaley, broken stick											
	60.81																
				.86	Shale	dark gray, coaly partings, carbonaceous, broken stick											
		61.70		.17	Coal	dull, powder			X2								
	61.87																
				.33	Coal	dull with bright, broken											
				.06	Coal	shaley, dull with bright, broken											
13																	
				.56	Coal	shaley, dull, broken stick											
				.12	Coal	dull, powder											
	63.09																
				.40	Coal	dull and bright, a little shale, broken			83								
				.20	Coal	dull, powder											
				.07	Coal	dull with bright, some shale, broken stick											
				.37	Coal	as above, highly broken to powder											
	64.31																
				.22	Coal	dull with bright, highly broken to powder											

UNITS USED: m☐ ft☐

† :RS/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-33 CONTINUED

CROWS RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-33 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS†
13	64.31																Flow of Water Yes☐ or Gas? No☐ Indicate Depth
				.51	Coal	as above, powder			83								
	65.84																
				.15	Coal	shaley, broken, dull											
				.59	Coal	slightly shaley, sheared, dull, broken to powder											
	66.90																
				.81	Coal	dull, sheared, broken to highly broken											
14																	
	67.97																
				.19	Coal	dull, broken											
				.07	Coal	dull, powder											
				.06	Coal	dull, broken stick											
			68.80	.25	Coal	dull, powder											
				.41	Shale	dark gray, with coal, broken (dull)											
	69.19																
		69.30		.22	Coal	dull with bright, broken											
				.40	Coal	dull with bright, slicked											
				.31	Coal	dull with bright, highly broken											
	70.41																
				.65	Coal	dull, sheared, broken to highly broken											
				.58	Coal	dull with bright, broken to highly broken											
	71.78																
				.50	Coal	dull, broken											
				.40	Coal	bright and dull, broken stick											
15																	
				.17	Coal	dull with bright, powder											
	73.00																
				.71	Coal	Dull, highly sheared, highly broken to powder											
	74.07																
				.24	Coal	dull with bright, broken											
				.47	Coal	dull with bright, powder											

UNITS USED: m☐ ft☐

† = R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
• RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-33 CONTINUED

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-33 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % o.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS†
15																	Flow of Water Yes☐ or Gas? No☐ Indicate Depth
	75.29																
				.63	Coal	dull, sheared, slicks, powder			83								
				.15	Coal	dull with bright, broken stick											
				.22	Coal	dull, powder											
	76.51																
			77.40	.99	Coal	dull, sheared, highly broken to powder											
	77.72																
				.15	Shale	dark gray, broken stick											
16																	
				.02	Shale	as above, broken											
				.66	Shale	dark gray, slicked, highly broken to powder											
				.23	Shale	dark gray, carbonaceous, broken stick											
	79.25																
				.29	Shale	dark gray, slicked, highly broken											
		79.50		.36	Coal	shaley, dull, highly broken to powder			84								
				.40	Coal	dull with bright, highly broken											
	80.77																
				.53	Coal	dull, slicked, broken											
				.05	Coal	dull with bright, broken											
				.14	Coal	shaley, dull and bright, broken											
				.53	Coal	dull with bright, broken stick											
	82.30																
				.65	Coal	dull and bright, sheared, broken stick to broken											
17																	
				.40	Coal	dull with bright, broken stick to broken											
			83.70	.15	Coal	as above, highly broken to powder											
	83.82																
				.75	Shale	carbonaceous partings, broken											
				.12	Coal	dull, slicks, powder											

UNITS USED: m☐ ft☐

† :R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-33 CONTINUED

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-33 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS † Flow of Water Yes☐ or Gas? No☐ Indicate Depth
17																	
	84.73																
				.28	Shale	coaly, slicked and sheared, highly broken to powder											
		85.20		.46	Coal	dull, highly broken to powder											
	85.65																
				.54	Coal	dull with bright, broken											
				.30	Coal	shaley and dull, highly broken											
				.26	Coal	dull, powder											
	86.87																
				.34	Shale	slicked, highly broken											
				.32	Coal	dull, powder											
	87.63																
18																	
				.56	Coal	shaley, dull, highly broken											
			88.70	.34	Coal	dull, powder											
	88.70																
				.60	Shale	with coaly partings, broken											
				.29	Coal	dull, powder											
	90.22																
				.21	Shale	dark gray, carbonaceous, broken stick	45										
		90.70		.51	Coal	with shale, bright, broken											
				.14	Coal	dull, powder											
	91.75																
				.31	Coal	dull, highly broken to powder			87								
				.29	Coal	dull with some bright, broken stick											
				.38	Coal	dull, powder, some small shale pieces											
				.25	Coal	dull with bright, broken	48										
				.08	Coal	dull, powder											
	93.27																
19																	
				.10	Coal	dull with bright, broken stick											

UNITS USED: m☐ ft☐

† :*RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
*ROD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-33 CONTINUED

CROWS N RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CONTINUED CM-80-33

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS ?
19																	Flow of Water Yes☐ or Gas ? No☐ Indicate Depth
				.11	Coal	bright, broken stick			87								
				.07	Coal	dull, shaley, broken											
				.12	Coal	dull, broken											
				.09	Coal	dull, highly broken to powder											
				.08	Coal	dull, shaley, broken											
				.45	Coal	dull, highly broken to powder											
	94.49																
				.37	Coal	dull, sheared, highly broken											
				.41	Coal	dull with bright, broken stick											
				.11	Coal	dull with bright, highly broken to powder											
				.21	Coal	dull, shaley, broken stick	52										
				.06	Coal	dull, powder											
				.05	Coal	dull, broken											
				.15	Coal	dull, highly broken to powder											
	96.01																
				.21	Coal	dull, shaley, broken											
				.15	Coal	dull, broken to highly broken											
				.21	Shale	dark gray, coaly, broken stick											
				.10	Coal	dull, shaley, broken stick											
				.09	SLTST	medium gray, carbonaceous partings, broken stick	51										
				.11	Coal	dull, broken											
				.11	SLTST	medium gray, carbonaceous partings, broken											
				.26	Coal	dull, highly broken to powder											
	97.54																
				.24	Coal	dull, broken											
				.05	Shale	coaly, dark gray, broken											
				.15	Coal	dull, highly broken to powder											

UNITS USED: m☐ ft☐

† •RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
•ROD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CONTINUED CM-80-33

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CONTINUED CM-80-33

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	BEDDING ANGLE (°) ▲	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS† Flow of Water Yes☐ or Gas? No☐ Indicate Depth
20																	
				.08	Coal	dull with bright, broken			87								
				.24	Coal	dull, powder											
				.10	Coal	dull, highly broken											
	98.60																
				.68	Coal	dull, highly broken to powder											
				.07	Shale	dark gray, coaly, broken											
	99.82																
				.29	Coal	dull, sheared, highly broken											
				.43	Coal	dull, shaley, broken to highly broken	50										
				.13	Coal	dull, powder											
	100.89																
				.42	Coal	dull, broken											
			101.50	.16	Coal	dull with bright, broken			√								
				1.00	Shale	dark gray, carbonaceous and coaly partings, broken stick	58										
	102.41																
				.48	SST	medium gray, medium-grained, carbonaceous partings, broken stick	58										Moose Mn
21																	
				.97	SST	as above, broken stick	45(p)										
				.12	Shale	dark gray, carbonaceous and coaly partings, broken	36										
	103.94																
				1.50	SST	medium gray, medium-grained, carbonaceous partings, stick	54										
	105.46																
				1.50	SST	as above, broken stick	58										
	106.98					T.D.											

UNITS USED: m☐ ft☐

†: •RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CONTINUED CM-80-33

DIRECTIONAL SURVEY (DAVIES)

CM-80-34

DEPTH (M)	SLANT ANGLE (^{o}) *	SLANT ANGLE BEARING (AZ^{o})
20	58	275
40	60	269
70	60.5	266
85	60.7	265

* Measured from Horizontal

CROW NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN	DATE	BEGIN	80.09.14	HOLE No. CM-80-34
AREA	COAL MOUNTAIN		END	80.09.17	

HOLE PARTICULARS

LOCATION	5483615.73 N 669314.26 E		
ELEVATION	2000.63	HOLE BEARING (AZ°)	
TOTAL DEPTH	DRILLED: 91 LOGGED: 88.5	HOLE ANGLE (°)*	

LOGGING

LOGS RUN	Gamma,Dens,Cal,Dir
LOGGED BY	Davies
OTHER TESTS	

COAL CORING PERFORMANCE

CORE DIAMETER		HQ
TOTAL	CORE RECOVERED	33.35
	LENGTH CORED	54.75
	CORE RECOVERY	60.9 %

EXAMINATION

LOG USED	Full Suite
No. OF SEAMS SAMPLED	
EXAMINER (S)	K. Sharman
DATE	80.09.20

BOX No	DEPTH AT TOP OF SEAM	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	SEAM DESIG	▲ BEDDING ANGLE (°)	SUMMARY GEOTECH HARDNESS	SUMMARY GEOTECH FRAC. FREQ.	SUMMARY GEOTECH RQD	SAMPLE NO.	ANALYTICAL DATA MOIST % a.s.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.
		0	10.36			No Core													
1																			
	10.36																		
		10.40		.67	Coal	dull, highly broken to powder						101							
	11.27																		
				.85	Coal	as above													
				.22	Coal	dull, broken													
	12.49																		
				.68	Coal	dull, broken													
				.15	Coal	dull with bright, broken stick	27												
				.16	Coal	dull, broken													
	13.71																		
				.24	Coal	dull, broken													
				1.09	Coal	as above, powder													
2																			
	15.24																		
				.23	Coal	dull, highly broken													
				.54	Coal	dull, broken	32												
	16.15																		
				.78	Coal	dull, broken to highly broken													
	17.37																		
				.36	Coal	dull, highly broken													
				.54	Coal	as above, highly broken to powder													
	18.59																		
				1.01	Coal	as above													
	20.11																		
				.70	Coal	as above													

ALL LINEAR UNITS IN METRES

* : MEASURED FROM THE HORIZONTAL PLANE

† : • R &/OR S — GOLDER ASSOCIATES HARDNESS CODE

• RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-34

FILE No. BA-267
REVISED May 1980

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CH-80-34 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS†
3																	Flow of Water Yes☐ or Gas? No☐ Indicate Depth
				.39	Coal	dull, powder			101								
	21.64																
			21.90	.45	Coal	as above											
				.08	Shale	dark gray, carbonaceous, broken											
		22.40		.46	Coal	dull, powder											
	23.16																
			23.90	.27	Coal	dull, powder											
	24.38																
		24.60		.88	Coal	sheared, dull, highly broken to powder											
	25.90																
			25.90	.06	Coal	dull, sheared, highly broken											
				.42	Shale	dark gray, carbonaceous, slicks, highly broken to powder											
				.46	SLTST	medium gray, slicks, abundant iron-stain, broken to highly broken											Fault
	27.12																
				.67	SLTST	as above, calcite-filled fractures, broken stick to broken	28										
4																	
				.38	SLTST	as above, highly broken											
	28.65																
				.20	Shale	dark gray, carbonaceous, slicks, broken											
		29.60		.18	Coal	dull, sheared											
				.21	Shale	dark gray, carbonaceous, highly broken											
				.10	Coal	dull, powder			102								
	30.17																
				.17	Shale	dark gray, carbonaceous and coaly partings, iron-stain, broken	20										
				.55	Coal	dull with some bright, broken											
				.08	Shale	dark gray, carbonaceous, broken											
				.12	Coal	dull, powder											

UNITS USED: m☐ ft☐

† :•RA/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CH-80-34 CONTINUED

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-34 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS †
4	31.69																Flow of Water Yes ☐ or Gas? No ☐ Indicate Depth
				.20	Shale	dark gray, carbonaceous and coaly partings, slicked, broken stick											
				.18	Shale	as above, highly broken											
			31.75	.54	Coal	dull, powder, a few shale pieces			103								
	33.23																
		33.10		.74	Coal	dull, broken											
				.31	Coal	dull, broken											
	34.74																
				.34	Coal	dull, broken											
5																	
			35.10	.23	Coal	dull with bright, broken											
		35.50	36.10	.50	Shale	dark gray, carbonaceous, slicks, broken											
	36.57																
		36.60		.69	Coal	dull, highly broken to powder			104								
	38.10																
				.11	Coal	dull, highly broken											
				.05	Shale	dark gray, carbonaceous, highly broken											
				.44	Coal	dull, highly broken to powder											
	39.77																
				.60	Coal	dull, broken to highly broken											
				.71	Coal	dull, highly broken to powder											
	41.45																
				.66	Coal	dull, broken to highly broken											
6																	
				.07	Coal	dull, highly broken to powder											
				.53	Coal	dull, highly broken											
			44.10	.35	Coal	dull, highly broken to powder											
	44.50																
		44.90		.22	Coal	dull, shaley, broken	15										
				.25	Coal	dull, highly broken											

UNITS USED: m☐ ft☐

† :RA/OR S — GOLDER ASSOCIATES HARDNESS CODE

•RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-34 CONTINUED

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CH-80-34 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % o.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS ?
6																	Flow of Water or Gas? Yes☐ No☐ Indicate Depth
				.15	Coal	dull, shaley, broken			104								
				.40	Coal	dull, sheared, highly broken											
	46.02																
				.65	Coal	dull, broken											
				.24	Coal/SH	coal is dull, highly broken to powder shale is dark gray, carbonaceous, broken											
	47.54																
				.61	Coal	dull, broken to highly broken											
	48.46																
				.42	Coal	dull, sheared, highly broken											
7																	
				.08	Coal	dull, powder											
	49.07																
				.48	Coal	dull, sheared, highly broken											
				.76	Coal	dull, powder											
	50.59																
				.77	Coal	dull, highly broken											
				.07	Shale	dark gray, carbonaceous, broken											
				.34	Coal	dull, sheared, highly broken to powder											
	52.12																
				.07	Coal	dull, broken											
				.15	Shale	dark gray, coaly, broken stick	63										
				.56	Coal	dull, highly broken to powder											
	53.64																
				.06	Coal	dull, powder											
	54.25																
				.14	Shale	dark gray, carbonaceous, broken											
				.20	Coal	dull, powder											
8																	
				.12	Coal	dull, powder											

UNITS USED: m☐ ft☐

? :R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
*RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CH-80-34 CONTINUED

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CONTINUED CM-80-34

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS†
8	55.16																Flow of Water Yes☐ or Gas? No☐ Indicate Depth
				.54	Coal	dull, highly broken to powder			104								
	56.69																
				.31	Coal	dull, highly broken											
				.54	Coal	dull, powder											
				.12	Coal	dull, broken											
	58.21																
				.14	Coal	dull, highly broken											
				.25	Coal	dull, powder											
				.08	Coal	dull, calcite-filled rootlets, highly broken											
				.23	Coal	dull, powder											
	59.74																
				.19	Coal	dull, powder, coaly shale wash											
			61.10	.34	Coal	dull, powder											
				.05	Shale	dark gray, carbonaceous, broken											
	61.26																
		61.70		.31	Coal	dull, highly broken to powder											
				.25	Shale	dark gray, carbonaceous, broken											
				.13	Coal	dull, powder											
				.07	Shale	dark gray, carbonaceous, broken											
	62.78																
				.16	Coal	dull, shaley, broken	61										
				.10	Coal	dull with bright, broken											
9																	
				.17	Coal	dull with bright, broken	65										
				.06	Shale	dark gray, silty, carbonaceous, slicks, broken											
			64.30	.46	Coal	dull, highly broken to powder											
	64.31																
				.22	Coal	dull, broken											
				.07	Shale	coaly, broken stick	67										

UNITS USED: m☐ ft☐

† = RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
= RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CONTINUED CM-80-34

CROWS NEST RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CONTINUED CM-80-34

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS †
9																	Flow of Water or Gas? Yes ☐ No ☐ Indicate Depth
		65.70		.05	Coal	dull and bright, broken											
				1.12	Shale	dark gray, carbonaceous, some slicks, broken stick to highly broken											
	65.83																
				.14	Shale	dark gray, carbonaceous, slicks, broken			105								
				.39	Coal	dull, broken											
				.06	Shale	dark gray, carbonaceous, broken											
				.31	Coal	dull, broken											
				.16	Shale	dark gray, carbonaceous, slicks, broken											
	67.36																
				.18	Coal	dull, broken			106								
				.14	Coal	dull, shaley	50										
				.10	Coal	dull, sheared, highly broken											
				.07	Shale	dark gray, carbonaceous, highly broken											
				.09	Coal	dull, highly broken											
				.20	Shale	dark gray, carbonaceous, few slicks, highly broken											
10																	
				.11	Coal	dull, highly broken to powder											
	68.58																
				.12	Coal	dull, shaley, broken											
				.25	Coal	dull, broken to highly broken											
				.29	Shale	coaly, broken to highly broken	45										
	69.34																
				.15	Coal	dull, shaley, broken											
				.17	Shale	coaly, broken											
				.14	Coal	shaley, dull, broken											
				.08	Shale	coaly, broken stick											

UNITS USED: m☐ ft☐

† :RA/OR S — GOLDER ASSOCIATES HARDNESS CODE
*RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CONTINUED CM-80-34

CROWS N[illegible] RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CM-80-34 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	BEDDING ANGLE (°) ▲	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS† Flow of Water or Gas? Yes☐ No☐ Indicate Depth
10																	
				.24	Shale	dark gray, carbonaceous and coaly partings, broken stick			106								
				.10	Coal	shaley, broken to highly broken											
	70.40																
				.11	Shale	dark gray, carbonaceous, broken											
				.53	Coal	dull, highly broken											
				.18	Coal	dull, powder											
	71.93																
				.55	Coal	dull, highly broken											
	73.45																
				.43	Coal	dull, highly broken to powder											
				.56	Coal	dull, sheared, highly broken	58										
11																	
			75.10	.23	Coal	dull with bright, broken											
	75.13																
				.25	Coal	dull, sheared, broken to highly broken											
				1.27	SST	medium gray, medium grain, carbonaceous, stick	65										
	76.5																
				1.56	SST	as above, stick, calcite-filled fractures in bottom half, some open fractures	63										
	78.02																
				.99	SST	medium gray, medium grain, broken stick, a few slicks	62										
12																	
				.48	SST	medium gray, medium grain, broken stick	58										
	79.55																
				1.04	SST	as above, broken stick	68										
				.04	SST	as above, highly broken											
				.22	SST	as above, broken stick											
				.15	SST	as above, broken stick											

UNITS USED: m☐ ft☐

† RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CM-80-34 CONTINUED

CROWS/ T RESOURCES LIMITED

CORE & COAL CORE DESCRIPTION

PROJECT	CORBIN
AREA	COAL MOUNTAIN

HOLE No. CONTINUED CM-80-34

BOX No.	DEPTH AT TOP OF BOX	DEPTH FROM	DEPTH TO	TH	LITHO DESCRIPTION MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	REMARKS*
12	81.07																Flow of Water or Gas? Yes☐ No☐ Indicate Depth
				1.39	SST	as above, stick	65										
	82.60																
13																	
				1.60	SST	as above, stick	63										
	84.12																
				1.00	SST	as above, stick	47										
				.07	SST	as above, with range mud, broken to powder											
				.32	SST	medium gray, medium grain, iron-strain in fractures, broken											
				.16	SST	medium gray, medium grain, broken stick											
	85.64																
				1.08	SST	as above, stick	57										
14																	
				.54	SST	broken stick, medium gray, medium grain	55										
	87.17																
				1.31	SST	as above, broken stick, iron-stained fracture in middle	68										
				1.57	SST	medium gray, medium grain, iron-stain, fractures, broken stick to broken	46										
	90.22					T.D.											

UNITS USED: m☐ ft☐

† :•R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
•RQD — ROCK QUALITY DESIGNATION (%)

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. CONTINUED CM-80-34

APPENDIX E

E-Shell Corbin 80C31A

389 1/4 (1) Appendix E

STRATIGRAPHIC SECTION

DESIGNATION:	CM-80-25
PART ____ OF ____	
PROJECT:	CORBIN
AUTHOR: RUSHLOW	
DATE: 1980-11-03	
AREA:	COAL MOUNTAIN
SOURCE OF DATA:	
LOCATION:	

SCALE	CONTROL POINT	INTERVAL	LITHOLOGY	CORE BEDDING ANGLE	DESCRIPTION MAIN	DESCRIPTION AMPLIFIED	SAMPLE
SCALE 1:200 (m)							
0						0-9.14 NO FAULT	
5							
10				52°		Sltstn - med. grey, Fe stain	
				52°		Ss - med. grey, fine grained	
				43°		Sltstn - med. grey, carb., plant debris	
15				46°		Shale - med. grey	
				45°		- dk grey	
				56°		Sltstn - med. grey, Fe stain	
				59°			
20				46°		Shale	
				54°		- sltstn split	
				54°		- sltstn split FAULT	
						- med. grey, Fe stain	
				57°			
25				42°			
				44°			
				46°		Ss - med. grey, fine grained	
				55°			
30				59°			
				57°			
				52°		- grey brown, fine grained	
				52°			
				50°			
				62°			
				56°		Sltstn	
35				59°			
				65°			
				62°		Ss	
40				68°		Sltstn/Shale	
						Shale - grey brown	
				64°		Ss - med. grey, v. fine grained	
				68°		- sltstn split	
45				68°		Sltstn	
				63°		Shale - med. grey, carb. partings	
				62°			
				68°		Sltstn	
50						Shale - dk. grey	47
		2.60				Coal - dull	48
		1.10		45°		Coal - bright & dull	
				55°			
55				45°		Shale - dk. grey, carb. partings	
				54°		- Fe stain	
				41°			
				43			
				58°		- med. grey	
60				50°			
				49°			
				47°			
				54°			
65				46°		- dk. grey	
				44°		Sltstn	
				49°			
				49°			
				50°			
70				53°		Shale - dk. grey	
				51°			
75				49°		Coal - dull, shaly	49
		3.35				- dull w/bright	50
				54°			
80		1.95		45°		Coal - dull	
						- bright	
						- dull	
				45°		Shale - dk. grey, sltstn interbeds	
				48°			
85				51°			
				51°			
				52°		Sltstn	
				47°		Ss - med. grey, fine grained	
90				42°			
				36°		Sltstn/Shale - med. grey	
				40°		- dk. grey	
		0.45		40°		Coal - dull w/bright	
				42°		Shale - dk. grey	
				44°			
95		2.05		42°		Coal	51
				34°		Shale - dk. grey, carb. partings	
		0.60		43°		Coal - dull	
		0.85				Shale - coaly	
100		0.45		49°		Coal - dull	
		0.30				Coal	
						Coal	
		3.35				Coal - dull	
				50°		Shale	
						Coal - w/coaly shale	
		0.70		44°		Coal - dull	
105				40°			
				46°			
				53°			
				49°			
				57°			
110				39°		Ss - med. grey, med. grain, some coaly partings	
				49°			
				40°		MOOSE MTN.	
				38°			
115				35°			
				50°			
				48°			
120				47°			
				43°			
125							
130							

HH-65

K-Shell-Corbin 80(87)A

STRATIGRAPHIC SECTION

DESIGNATION: 389 1/4 ② Appendix E

PROJECT: CORBIN	CM-80-26
AREA: COAL MOUNTAIN	AUTHOR: RUSHLOW
LOCATION:	SOURCE OF DATA: DIAMOND DRILL CORE
PART ___ OF	DATE: 1980-11-05

SCALE 1:200 (ft.)

CONTRDL POINT	INTERVAL	LITHOLOGY	CORE BEDDING ANGLE	DESCRIPTION MAIN	DESCRIPTION AMPLIFIED	SAMPLE
0					0-7.7'm NO CORE	
10			40°		Shale-dk. grey, carb.	
			33°			
			28°		-med. grey	
15			60°		-silty	
			40°			
			37°		Coal	
20			28°		Ss-med. grain, fine coal partings	
			27°			
			38°		Shale-dk grey	
					Coal	
25			32°		Ss-med. grey	
			42°		-fine grained FAULT	
					Coal	
					Siltst-dk. grey	
30			34°		Shale-dk grey, silty interbeds	
			34°			
			34°		Ss-fine grain	
			25°			
			32°			
			34°			
35					Shale-dk grey	
			27°			
			32°			
40			40°			
			40°		Ss-med. grey, med. grain	
			35°			
			35°			
45			37°			
			30°			
			41°			
			40°			
					Ss	
50			49°		Shale	
			40°		Ss	
					Shale-dk to med. grey	
55			48°			
			37°			
			41°			
			47°			
			37°			
			38°			
60			34°		Ss/Shale-interbedded, dk. grey, carb. partings	
			43°			
65			40°			
			34°			
			40°			
			39°		Siltst-dk grey, grading into fine Ss	
70			44°			
			38°			
			40°			
					Ss-med. grey, fine grain, carb. partings	
75			36°		Siltst	
			25°			
			37°		Shale-dk grey	
			40°		Ss	
80			29°		Shale	
			36°			
			43°		Siltst-carb. partings	
			32°		Shale	
			27°			
			35°			
85			35°		Ss-med. grey, med. grain, silty shale interbeds	
			36°			
			48°		Shale-dk grey, silty interbeds	
			36°			
90			36°			
	2.75		23°		Coal-dull	57
			30°		-dull w/bright	58
	0.60		33°			
					Coal-dull w/bright	59
95	1.95		17°			
			30°		Coal	
					Shale-carb. partings	
					Coal-dull w/bright	
100			17°		-shaly	
			30°			
			30°		-dull, shaly seam	
105	19.30					60
			19°			
110			27°			
			23°		-dull w/bright	
			30°			
115			24°			
			37°		Coal	
120			30°		Shale-carb. coaly	
			32°			
			34°			
			34°			
			29°		-dk grey	
125			22°			
			20°			
			38°			
130			24°			
			24°			
			23°			
			24°			
			30°			
135			20-22°			
			34°			
			30°			
			24°			
140			29°			
			22°		-dk. grey, some coaly partings	
			29°			
			28°			
145			30°			
			30°			
150			30°			
			30°			
			28°			
155			30°			
			30°			
			33°		-dk. grey	
			30°			
160						62
					Coal-dull w/bright	63
165	8.60		27°			
			27°			
					Shale-coaly	
170	1.05				Coal	
			29°			
			33-40°		Shale-dk. grey	
175	1.50		42°		Ss-fine to med.	
					Coal-dull w/bright	
					Shale-dk. grey	
180			30°		Ss	
	0.04		23°		Coal	
					Shale-dk. grey w/Coal	
185	0.55		41°			
					Coal	
	1.35				Shale-black & coaly	
			33°		Coal-shaly	
190			33°		Shale-dk grey, carb. partings	
	4.50		38°		Coal-dull, shaly	
					-dull w/bright	64
195			30°		Shale-dk grey, coaly partings	65
	1.60				Coal-dull, shale	
			34°		Shale	
200	2.70		47°		Coal-dull, shaly w/bright	66
	1.20		33°		Coal-dull w/bright	
205			31°			
			30°		Ss-med. grey, med. grained	
			38°		MOOSE MTN.	
210			46°			
			24°			
					T.D.	

HH-651

MICROFILMED FILE NO. 82-340

R-Shell-Corbin 50/3/A

389 1/4 (3) Appendix E

STRATIGRAPHIC SECTION

DESIGNATION:	CM-80-27
PART ____ OF ____	
PROJECT:	CORBIN
AUTHOR:	RUSHLOW
AREA:	COAL MOUNTAIN
DATE:	1980-09-19
LOCATION:	5483397.33 N , 669488.82 E
SOURCE OF DATA:	DIAMOND DRILL CORE

SCALE 1:200 (m)

SCALE	CONTROL POINT	INTERVAL	LITHOLOGY	CORE BEDDING ANGLE	DESCRIPTION MAIN	DESCRIPTION AMPLIFIED	SAMPLE
0							
5		0.24		37°		Shale - dk. grey, carb. partings	
						Coal	
						Shale-A/A	
						Siltst-med. grey	
				36°		Shale-med. grey, silty	
						-fe stain	
10				52°			
				46°			
				48°		Siltst-med. grey, fe stain, candy interbeds	
				37°		Shale	
				34°		Siltst	
15				34°		Shale	
				42°		Siltst	
		0.50		39°		Shale	
				48°		Coal	
20				49°			
				21°			
				40°			
				42°			
				54°		Shale/Siltst	
25				32°		Shale-med to dk. grey, some candy interbeds & carb.	
						fe staining, silty	
				51°		Siltst-med. grey, shaly interbeds, carb. partings,	
				40°		candy splits	
				39°			
30				48°			
				42°			
35				44°		Ss-silty interbeds	
				57°			
				41°			
				43°		Shale-silty, dk. grey, carb.	
				50°		Ss-med grey, fine grained, silty interbeds	
40				41°		Shale	
				53°		Ss	
						Shale-dk. grey, minor silt interbeds	
				50°		-candy & carb.	
						Ss-med. grey, fine to med. grained, silty interbeds	
45				42°		Shale-dk. grey, silty interbeds	
				39°			
		0.15				-candy	
				50°			
50				54°		Shale-w/siltst beds	
				62°			
				34°		Siltst-fine grained, Ss interbeds	
				43°			
55				49°		Ss-silty, fine grained	
				38°		Shale-silty, carb partings	
						Siltst-shale interbeds	
						Shale-dk grey, carb. partings	
60		1.70		18°		Coal-dull	62
				26°		Shale-dk grey, carb partings	
						Shaly Coal	
				40°			
65				40°			
						Coal-dull	
				24°		Shaly Coal	
70		19.55				Coal	
				30°		Shaly Coal	63 a,b,c
				26°			
				24°			
				26°			
75				26°		Coal-dull	
				28°			
				30°		Shaly Coal	
						Coal	
80				24°		Shaly Coal	
				22°			
				30°		Coal	
				32°			
85		1.65		30°		Shale-dk. grey, carb. & candy partings	
		0.30		18°		Coal-dull, shaly	64
		0.44		22°		Coal	
90				24°		Coal-dull	
				28°			
				30°			
				30°		Shale-silty interbeds	
				26°			
95				26°			
				30°			
				12°			
				22°			
100				24		Siltst/Shale	
				19°			
				22°			
				18°			
105				5°		Shale-dk. grey, carb. partings	
				35°			
				35°			65
110				28°		Coal-dull	
		9.40					66
115						-shaly	
				22°		Shale-dk. grey, carb. partings	
		0.80				Coal	
120		0.26		11°		Shale-dk. grey, carb. partings	
						Coal-bright w/ dull	
				22°		Shale-dk. grey	
				22°			
125				28°			
				30°		-carb. partings	
				30°			
				29°			
130				38°			
				34°			
		0.12				Coal-shaly, dull	
135				26°		-dk grey, carb. & candy partings	
				23°			
						Siltst-med. grey	
				20°		Shale-dk. grey	
140				17°		-slump	
				22°		-candy & carb. partings	
				22°			
				20°			
				30°			
145				22°			
				14°			
150				20°			
		0.77				Coal-dull	
		0.25				Shale-dk. grey, carb. partings	
155				22°		Shale-dk carb. partings	
						-slump	
		0.27				Coal-dull	
				23°		Shale	
				30°			67
160							
		7.15				Coal-dull	
165						-dull w/bright	68
170		7.20		30°		Coal-some bright	
				32°			
175		0.50		30°		Shale-black, some coal wisps	
				43°		Coal-dull, hard, shaly	
180						Shale-dk. grey, carb. & candy partings	
				28°			
				18°			
				20°			
185				16°		Ss-med. grey, fine grained, carb. partings	
				20°			
		0.80		24°		Shale	
				30°		Coal-dull & bright	
190				36°			
				32°		Shale-dk. grey, carb. partings	
				36°			
				32°			
195		4.40		33°		Coal-dull, sheared	69
						-dull w/bright	
200				20°		Shale-dk. grey, candy	
				42°		Coal-dull, shaly	
		3.00		39°		-dull & bright	70
205				41°		Shale-candy, dk. grey	
		2.05				Coal-dull & bright	
						-shaly	
210						Shale-dk. grey	
				43°			
		0.73		37°		Coal-dull, sheared	
		0.72		52°		Shale-a few siltst beds	
						Coal-dull, shaly	
215				37°		Shale	
				49°		Ss-med. grey, med. grained	
						MOOSE MTN.	
220							
225							
230							

HH-65G

MINERAL FILE NO.
82-341

K. Shell - Corbin 80C 31A

389 1/4 (4) Appendix E

STRATIGRAPHIC SECTION

DESIGNATION:	CM-80-27A
PART	_____ OF _____
PROJECT:	CORBIN
AREA:	COAL MOUNTAIN
LOCATION:	548397.24 N, 669490.94
AUTHOR:	RUSHLOW
DATE:	1980-11-04
SOURCE OF DATA:	DIAMOND DRILL CORE

SCALE [m]	CONTROL POINT	INTERVAL	LITHOLOGY	CORE BEDDING ANGLE	DESCRIPTION MAIN	DESCRIPTION AMPLIFIED	SAMPLE
0						0-4.87 NO CORE	
5						Shale-dk. grey	
10				28°		-carb., coaly partings	
		0.30		48°		Coal	
				46°		Sltstn	
15				50°			
				50°		Shale	
				56°		Ss	
20				58°		Shale-dk. grey	
				70°		Sltstn	
				75°		Shale	
				70°		Sltstn	
				55°		Shale	
25				55°		Ss-med. grey	
				50°		Sltstn	
				50°			
				49°		Shale	
30				54°			
				53°			
		0.40				Coal	
35				46°		Shale	
				43°		Ss-med. grey	
				46°		-carb. partings	
				35°			
40						Sltstn-med. grey, carb. partings	
				20°			
						Shale-med. grey	
						-very coaly	
		0.30				Coal-dull	
45				50°		Shale/Sltstn-dk. grey	
		0.40				Coal-dull	
		0.30				Coal	
				56°		Shale-dk. grey, carb. & coaly partings	
				60°			
				54°		Sltstn	
				51°			
50				44°			
				50°		Shale-dk. grey, coaly partings	
				52°			
				40°			
				50°			
55				55°			
				58°			
60							75
		4.75				Coal-dull	
				48°			
65				42°		Shale-coaly, dk. grey	
						-coaly	76
70				10°			
75		0.60				Coal-dull	77
		5.80				Coal-dull	78
80							
						Shale-dk. grey, carb. & coal	
85		0.90				Coal	
						Shale	
90		2.60				Coal-dull, dk. grey	79
						Shale	
						Coal	
95							
						Ss-med. grey, med. grained	
100						MOOSE MTN.	
105							
110							
						FAULT	
115						FAULT	
			T.D.				

HH-65D

h-Shell-Corbin 80C31A

389 1/4 (5) Appendix E

STRATIGRAPHIC SECTION

DESIGNATION:	CM-80-28A
PART	OF
PROJECT:	CORBIN
AUTHOR:	SHARMAN
DATE:	1980-11-05
AREA:	COAL MOUNTAIN
SOURCE OF DATA:	DIAMOND DRILL CORE
LOCATION:	5483655.49 N, 669403.86E

SCALE	CONTROL POINT	INTERVAL	LITHOLOGY	CORE BEDDING ANGLE	DESCRIPTION: MAIN	DESCRIPTION: AMPLIFIED	SAMPLE
[m]							
0							
5						0-12.19 NO CORE	
10							
15				53° 43°		Coal-dull w/bright -dull, minor shale -dull	88
20		11.80		54°			89
25		0.50				Shale-dk. grey Coal Shale-dk. grey, carb., coaly partings -coaly	
30		2.20		50°		Coal-dull	90
35		1.60				Shale-dk. grey Coal Shale	91
40		0.80				Coal	92
45				38°		Shale-dk. grey, carb.	
50							
55		5.40				Coal-dull -dull, minor shale	
60		5.20		65° 49°		Coal-dull	94
65		1.40				Shale-dk. grey, coaly Coal-dull	
70				29°		Shale-dk. grey, carb. -dk. grey, coaly	
75				74° 51°			
80				67°		-dk. grey, carb.	
85							
90		3.20				Coal Siltst-med. grey, very fine Ss interbeds	
95		2.70		30°		Coal-dull, minor shale	95
100		1.80		20° 15° 75° 74° 65° 55°		Shale-dk. grey, silty interbeds Coal-dull Shale-dk. grey, carb.	
105				47° 26° 30°			
110		1.00				Coal Coal-dull, minor shale	96
115		8.90				-dull	
120				39° 35°		Shale-dk. grey, carb.	97
125		9.00				Coal-dull	
130		1.10				Shale-dk. grey, carb. Coal-dull	
135				36° 40° 55°		Shale-dk. grey, carb.	
140		5.70				Coal-dull	98
145		0.65 0.40		32° 45°		Shale-dk. grey, coaly Shale	
150		2.45		48° 40° 52° 42° 40°		Coal-dull w/bright Shale-dk. grey, coaly, silty	99
155				56° 52° 34°		Coal-dull, shaly -dull w/bright Shale/Ss-dk. grey, carb. -lt. grey	
160				44°		Coal	100
165				39° 34° 38° 36° 36° 32° 32° 38°		Ss-med. grey, med. grain MOOSE MTN.	
170			T.D.				

HH-65E

R. Shell - Corbin 80/3/4

389 1/4 (6) Appendix E

STRATIGRAPHIC SECTION

DESIGNATION:	CM-80-29
PART ____ OF ____	
PROJECT:	CORBIN
AUTHOR: BUSHLOW	DATE: 1980-11-05
AREA:	COAL MOUNTAIN
SOURCE OF DATA:	DIAMOND DRILL CORE
LOCATION:	5483615.93N, 669312.34 E

SCALE 1:200 (m)

CONTROL POINT	INTERVAL	LITHOLOGY	CORE BEDDING ANGLE	DESCRIPTION MAIN	DESCRIPTION AMPLIFIED	SAMPLE
					0-12.50m. NO CORE	
	11.15		30°		Coal-dull w/bright	26
	2.70		17°		Shale-dk. grey -carb. partings	
			22°		Coal	27
			31°		Shale-dk. grey -coal interbeds, bright coal	
			20°			
			18°			
			23°			
			23°			
			60°			
			30°		Siltst-grey	
					Shale	
			33°		Coal	
			22°		Shale-dk. grey pieces, some carb., coaly partings	
			20°			
			24°		-med. grey	
			24°			
			28°			
			27°			
			33°			
			36°			
			37°			
	0.80				Coal-dull w/bright	28
	1.05		40°		Coal	
					Shale-dk. grey, carb. partings	29
					Coal-dull w/bright	
	9.45		42°		-Shale seat	
			42°		-very hard	30
					-dull w/bright	
			47°			
			43°		Coal-dull w/bright	
					Shale-dk. grey -numerous coal partings	31
			33°		Coal-shaly, hard -dull w/bright	
			30°			
			42°			
					-dull w/bright	
			23°		-shaly	
					Shale-dk. grey	
			5°			
			5°			
			5°			
	48.80		5°			
			10°		Coal-slightly shaly	
			12°			
			9°			
			7°		-dull w/bright	32
			15°			
			17°			
			12°			
			10°		Shale-coaly	
					Coal-dull w/bright	
			8°			
			3°			
					-dull	
	32.00		8°			
					-dull w/bright, wthered	
			5°			
			8°			
			14°			
					-dull w/bright	
			30°			
	0.55				Coal/Shale	
	0.50		25°		Coal-hard, shaly	
			20°		Coal-dull w/bright	
					Mudstone-dk. grey -black	
			23°			
	3.00		10°		Coal-some shale	33
			20°		-dull w/bright	34
					Mudstone	
					Coal-dull w/bright	
					Shale	35
			21°		Coal	36
					Mudstone	
	0.70		20°		Coal-shaly	37
	0.80		44°			
					Mudstone-hard, coaly	
					Coal-dull	38
			25°			
	6.70					39
			40°		-dull w/bright	
	0.60				Coal	40
			25°		Mudstone-coaly	
	0.80				Coal	41
	5.00		15°		Coal-shaly in places	
					-dull, shaly	42
			40°		-dull w/bright	
	1.50		42°		Coal	43
	1.35				Coal	
			30°		Mudstone-coaly partings	
			24°			
			24°		Coal-shaly	
			22°		-dull w/bright	44
			42°			
			45°		Mudstone-dk. grey -coaly	
			30°			
			32°			
	2.20		36°		Coal-dull w/bright	45
			40°			
			42°		Coal/Shale-dull w/bright	46
			22°			
	2.90		30°		Coal	
			24°			
			27°		Mudstone-coaly & shaly	
			32°			
	1.00		38°		Coal-dull w/bright	
					Mudstone	
			47°		Shale	
			33°		Sandstone-med grain, shale & coaly partings	
			32°		MOOSE MTN.	
			44°		-med. grain, salt & pepper	
			35-40°			
			47°			
		T.D.				

HH-65H

k-Shell-Corbin 80(31)

389 1/4 (7) Appendix E

STRATIGRAPHIC SECTION

DESIGNATION:	CM-80-30
PART ____ OF ____	
PROJECT:	CORBIN
AUTHOR:	SHARMAN
DATE:	1980-11-03
AREA:	COAL MOUNTAIN
SOURCE OF DATA:	DIAMOND DRILL CORE
LOCATION:	

SCALE 1:200 [m]

SCALE	CONTROL POINT	INTERVAL	LITHOLOGY	CORE BEDDING ANGLE	DESCRIPTION MAIN	DESCRIPTION AMPLIFIED	SAMPLE
0							
5					0-12.80 m NO CORE		
10							
15				5°, 10°, 25°			
20				30°, 40°, 22°, 3°, 5°, 24°, 31°, 5°, 5°			
25				26°, 45°, 20°, 27°	Ss- med. grained, light & dk. laminae, some carb. partings		
30				40°, 56°			
35				72°, 66°	Shale - carb. partings		
40				40°, 30°, 46°	Ss - med. grained, light & dk. laminae	FAULT ZONE	
45				79°, 80°, 78°	Shale - dk. grey, carb. partings - silty		
50				65°, 70°, 70°, 70°, 70°	Ss- grey, fine grained, silty -carb. partings; Shale- dk. grey, fine Ss. interbeds -dk. grey, carb. partings		
55				65°			
60				64°, 6°, 42°, 40°, 15°, 15°	Ss - very fine, silty partings; Shale - dk. grey, carb. partings		
65		1.72		38°	Coal- dull w/bright, minor shale		12
70				25°, 15°, 0°, 15°, 13°	Shale - dk. grey, carb. & coaly partings		
75				42°, 45°			
80		0.80			Coal - dull; Shale - dk. grey, coaly; Coal - dull		13, 14
85				15°	-minor shale; - dull w/bright		
90		17.65		23°, 15°	- dull		15
95				26°, 40°, 25°, 25°, 26°	- dull, some shaly; - dull		
100		0.50		26°, 19°, 35°, 40°	Shale- dk. grey, carb. & Coal; Shale - dk. grey, carb. & coaly partings		16
105				30°, 33°	Coal - dull, shaley; - dull		17
110		14.20		35°, 37°, 33°, 30°, 35°	- dull w/bright; - dull		18
115				37°, 31°, 35°, 35°	- dull, minor shaly; - dull w/bright		
120		0.60		35°, 33°, 31°, 28°, 27°	Shale - dk. grey, carb. & coaly partings; Coal - bright; Shale - dk. grey, carb. & coaly partings		19
125				25°, 32°, 28°, 25°, 38°, 35°	Coal - dull w/bright; - dull; - dull, shaly		20
130				11°	- dull, shaley		
135		23.05			- dull; - dull w/bright		21
140					- dull		
145				35°	- dull, shaly; - dull w/bright		
150		1.85			Shale- dk. grey, coaly; Coal - dull; Shale - dk. grey, coaly		
155		0.50, 0.35		32°, 60°	Coal - dull; Shale - dk. grey; Coal - dull		22
160		0.90		15°	- dull w/bright		23
165				5°	Shale - dk. grey		
170		0.50, 0.45, 0.35		5°, 30°, 50°	Coal - dull; Shale - dk. grey; Shale - coaly; Ss. - med. grey, med. grained		
175				40°, 40°, 40°, 40°	- mud clasts; MOOSE MTN.		
180							

T.D. 184 m.

HH-65J

K-Shell-Corbin 80(3)A

389 1/1 (B) Appendix E

STRATIGRAPHIC SECTION

DESIGNATION:	CM-80-31
PART	OF
AUTHOR:	RUSHLOW
DATE:	1980-11-03
PROJECT:	CORBIN
AREA:	COAL MOUNTAIN
LOCATION:	
SOURCE OF DATA:	DIAMOND DRILL CORE

SCALE 1:200 (m)

CONTROL POINT	INTERVAL	LITHOLOGY	CORE BEDDING ANGLE	DESCRIPTION MAIN	DESCRIPTION AMPLIFIED	SAMPLE
					0-11.28 NO CORE	
			32°		Shale - dk. grey, silty	
			38°			
			32°		Sandstone	FAULT
			42°			
			39°			
			42°		Shale - Fe stain	FAULT
					-dk grey, some Siltstn, some interlaminae coaly	
			42°			
			38°			
			41°		- dk grey, silty	
			40°			
			40°		Sandstone - fine	
			30°			
					Shale - carb., coaly, highly sheared	
					Shale - dk. grey	1
	8.75				Coal - dull w/bright	2
			10°		Ss - brecciated	
						FAULT
			40°			
			45°		Shale - some coal partings	
					-coaly	
	0.60		30°		Coal	
					Shale - carb. & coaly	3
	1.10				Coal - dull	
			20°			
			20°		Shale - dk. grey, coaly partings	
	0.45				Coal - shale	
	0.60				Coal - shale	
					Shale - dk. grey, carb. & coaly partings	
	0.40		55°		Coal - shaly, dull	
					Shale - dk. grey, carb. partings	
	0.50				Coal - shaly interbeds	
			03°		Shale - dk. grey	
	0.40				Coal - dull	
	0.50		40°		Coal - dull	
					Shale - coal	
	0.30				Coal - dull	
	0.30		20°			
			13°		Shale - dk. grey, silty laminae	
			26-16°			
			16°			
			12°			
			12°			
			22°			
			34°			
			30°			
			26°			
			40°			
			40°		-coaly wisps	
			28°			
			23°			
			42°			
			33°			
			40°			
			43°			
			42°			
			32°			
			22°			
			40°			
			30°			
			29°			
	1.70				Coal - dull w/bright	4
	0.30				Shale	
					Coal	
					Shale - coaly, dull	
	2.50				Coal - shaly, dk. grey	
					Shale - dk. grey	
					Coal - dull	
					Shale - coaly	
			30°		Coal - dull w/bright	
					- shaly	5
	20.40				-dull	
			20°			
			0°		Shale - dk. grey	
	1.55				Coal - dull w/bright	6
					Shale - carb.	
					Coal - dull	
	7.80		0°		Shale - coaly & carb.	
					Coal - dull w/bright	7
					Coal - dull	
					Coal - dull w/bright	
	7.20					
					- shaly	
					Shale - coaly	
	0.40				Coal - shaly, dull	
			5°			
			16°		Shale - carb., coaly	
			14°			
			9°			
			5°			
			18°			
					- dk. grey, carb., coaly partings	
					- bright	
					Coal - dull	8
	4.60					
					Shale - dk. grey, dull w/bright	
					Shale - dk. grey, carb. & coaly	
	4.50				Coal - dull w/bright	
			11°		Shale - dk. grey	
			0°			
	0.40		23°		Coal - shaly	
					Shale - dk. grey, carb. & coaly	
					Coal - dull w/bright	9
	7.70					
			0°			
			13°		Siltstn/Shale - w/coal	
	1.30		20°		Coal - dull w/bright	
			13°			
			13°		Shale/Coal - dull w/bright, dk. grey	
			32°			
						10
	2.80				Coal - dull w/bright, shale interbeds	
					-very shaly	
	0.40				Shale	11
					Coal - shaly, dull	
	2.70				Coal - dull	
					Shale - dk. grey, carb. & coaly	
			17°		Ss - light grey, med. grey, coal inclusions	
			17°			
		T.D.			MOOSE MTN Ss	

HH-65C

K-Shell - Corbin
80(3)A

389 1/4 (9) Appendix E

STRATIGRAPHIC SECTION

DESIGNATION:	CM-80-32
PART	OF
PROJECT:	CORBIN
AUTHOR:	SHARMAN
DATE:	1980-11-03
AREA:	COAL MOUNTAIN
SOURCE OF DATA:	DIAMOND DRILL CORE
LOCATION:	5483791.55 N, 669796.09 E

SCALE 1:200 m [m]

CORE BEDDING ANGLE	DESCRIPTION (MAIN / AMPLIFIED)	SAMPLE
	0-9.45m NO CORE	
34°	Shale - dk. grey, silty interbeds, carb. & coaly partings	
33°		
31°		
37°		
39°	-some Fe stain	
	-med. grey, silty	
43°		
	Sltstn - med. grey, Fe stain	
44°		
46°	Shale - dk. grey, carb. & coaly partings	
42°		
44°	Coal - dull, shaly	
	Shale - dk. grey, carb. partings	
40°		
39°	Coal - dull w/bright	71
	-dull	
	-dull & bright	
45°	-dull	
	-dull, shaly	
35°	-dull	72
34°	Shale - coaly partings	
	Coal - dull	
	-dull w/bright	
	Shale - dk. grey, carb. & coaly partings	
	Coal - dull	73
14°	Shale	
	Coal - dull	
18°	Shale - dk. grey, carb. partings, coaly interbeds Coal - dull	74
	-dull w/bright	
	-dull	
58°		
	Sandstone - med. grey, med. grained	
	MOOSE MTN.	

Depth scale: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80

Lithologic column: 0.65, 5.70, 4.55, 3.40, 7.40, 11.90, T.D.

HH-65A

K-Shell-Corbin 88(3)17

389 1/4 (10) Appendix E

STRATIGRAPHIC SECTION

DESIGNATION:	CM - 80 - 33
PART	_____ OF _____
PROJECT:	CORBIN
AUTHOR:	SHARMAN
DATE:	1980 - 11 - 03
AREA:	COAL MOUNTAIN
SOURCE OF DATA:	DIAMOND DRILL CORE
LOCATION:	5483724.14 N, 669798.19 E

SCALE	CONTROL POINT	INTERVAL	LITHOLOGY	CORE BEDDING ANGLE	DESCRIPTION: MAIN	DESCRIPTION: AMPLIFIED	SAMPLE
[m]							
0							
					0 - 10.97 m NO CORE		
5							
10							
				1°		Coal - dull w/bright	
				15°		-dull	80
15				15°		-dull, shaly	
				2°		-dull w/bright	
						-dull, shaly	
		11.10		0°			
20				3°		-dull w/bright	81
						-dull	
25							
				14°		Siltstn - med. grey, carb. partings, some very fine Ss. laminae	
						Shale - med. grey, silty	
30						- dk. grey, carb. partings	
35				0°		- med. grey, silty	
				8°			
40				7°		- dk. grey, carb.	
				15°		-dk. grey, coaly partings	
45				27°			
				45°			
50				53°			
				60°			
55				65°		-med. grey, fine Ss and Siltstn partings	
				55°		- dk. grey	
60		0.50				Coal - dull, shaly	
						Shale - dk. grey, carb. & coaly partings	
						Coal - dull	82
65						-dull, shaly	
		7.10				- dull w/bright	
						-dull	
						Shale - dk. grey, coaly	
70						Coal - dull w/bright	83
		8.10					
75						-dull	
						Shale - dk. grey, carb.	
80		4.20				Coal - dull w/bright	84
85						Shale - dk. grey, carb.	
		3.50				Coal - dull	85
90				45°		Shale - dk. grey, carb. & coaly partings	
						Coal - dull	86
				48°		-dull, some shaly	
95				52°			
		10.80		51°		-dull, minor siltstn	87
100				50°		-dull	
				58°		Shale - dk. grey, carb. & coaly partings	
				58°		Ss - med. grey, med. grained, some coaly partings	
105				45°			
				36°			
				54°		MOOSE MTN.	
				58°			
			T.D. 107 m				

HH-65B

K-Shell-Corbin 80(3) A

389 1/4 (11) Appendix E

STRATIGRAPHIC SECTION

DESIGNATION:	CM-80-34
PART	_____ OF _____
PROJECT:	CORBIN
AUTHOR:	RUSHLOW
DATE:	1980-10-28
AREA:	COAL MOUNTAIN
SOURCE OF DATA:	DIAMOND DRILL CORE
LOCATION:	

SCALE	CONTROL POINT	INTERVAL	LITHOLOGY	CORE BEDDING ANGLE	DESCRIPTION MAIN	DESCRIPTION AMPLIFIED	SAMPLE
[m]							
0						0-10.36 m. NO CORE	
5							
10							
15				27° 32°		Coal - dull	101
		11.50					
20							
		1.50				Shale - dk. grey, carb. Coal - dull	
25		1.30				Coal - dull	
						Shale - dk. grey, carb.	
				28°		Sltstn - med. grey	FAULT ?
30		2.15				Coal - dull -shaly	102
		2.00				Coal - dull -bright	103
35		0.60				Shale	
						Coal - dull -shale	
40		7.50					
45				15°		Shale Coal - dull, shaly -shaly	
50						-shale	104
		16.20		63°			
55						-shale	
60						-coaly shale wash	
		2.60		61° 65°		Shale - dk., carb. Coal - dull -shaly -dull w/bright -dk. grey, silty	
65				67° 50°		Shale - coaly Coal - dull & bright Shale - dk. grey, carb.	105
70		9.40		45° 58°		Coal - dull, shaly Shale Coal	106
75				65° 63° 62° 58° 68°			
80				65° 63°		Ss - med. grey, med. grained, carb.	
85				47° 57° 55° 68° 46°		MOOSE MTN.	
90			T.D.				
95							
100							

HH-65F

K-Shell-Corbin 80(1)A

82G/7

"Corbin-Coal Mountain Property"
Shell Canada Resources Ltd.

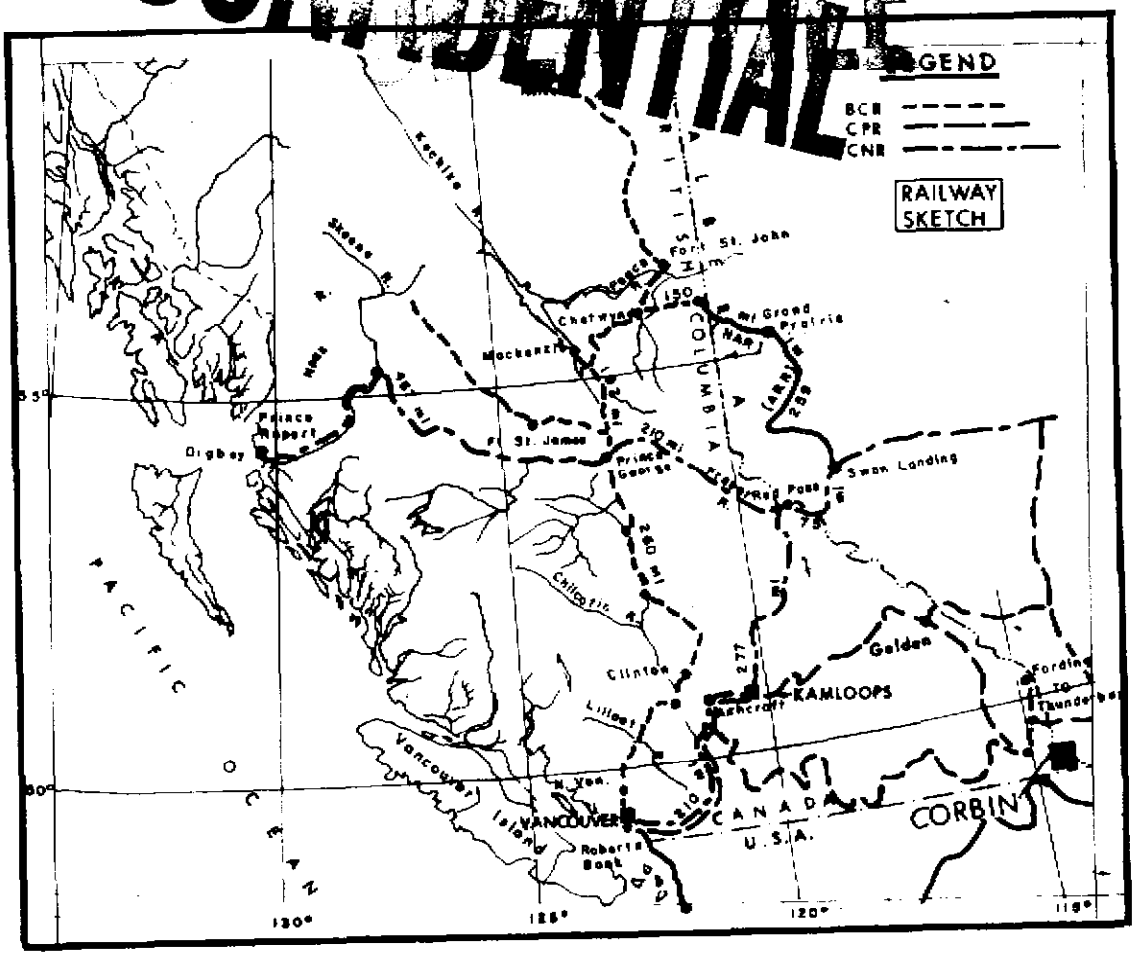
CC #414

P.C. Gilmer
K. Sherman
~~April 22/81~~

389
Part 3 of 4

CORBIN - COAL MOUNTAIN PROPERTY

CONFIDENTIAL



Report on Coal Licence 414 Group 6
Kootenay Land District, British Columbia on work done in June - October, 1980

Held by: SHELL CANADA RESOURCES LIMITED
Operated by: CROWS NEST RESOURCES LIMITED

Lat.: 49° 28' to 49° 29' Long.: 114° 39' to 114° 40'
N.T.S. 82 G/7

April 30, 1981

GEOLOGICAL BRANCH
ASSESSMENT REPORT

Author
Patrick C. Gillmar
Kevin Sherman
Geologists
Crows Nest Resources Ltd.

00 389

AA-560

PROFESSIONAL VERIFICATION OF REPORT

Entitled: Corbin - Coal Mountain Property
Kootenay Land District, B.C.
B. C. Coal Licence 414

Mr. Patrick C. Gilmar planned and carried out the 1980 geological field program on Corbin, B.C. Coal Licences held by Shell Canada Resources Ltd. and operated by Crows Nest Resources Ltd. He also prepared this report. Mr. Frank Martonhegyi supervised the activity of this program under the general direction of the undersigned.

Pat Gilmar, B.Sc., graduated in Geology from the University of Calgary, in 1978. Prior to his graduation Mr. Gilmar worked as a field assistant for a number of major mining companies in British Columbia and Alberta.

Frank Martonhegyi, M. E., graduated in Mining Geological Engineering from the University of the Heavy Industry, Hungary, in 1962; and received post-graduate training at the University of Saskatchewan, Saskatoon, in 1969-1971. His experience in Western Canadian coal exploration since 1971 includes positions with:

- CanPac Minerals Ltd., Calgary, Alberta
- Shell Canada Resources Ltd., Calgary, Alberta
- Crows Nest Resources Ltd., Calgary, Alberta

His prior experience includes underground coal mining geology, geotechnical engineering and geochemistry in Hungary, Austria and Canada.

He currently holds the position of Manager, B. C. Projects for Crows Nest Resources Ltd. supervising coal exploration in British Columbia.

I consider both the aforementioned geologists to be well qualified to undertake responsibilities they were assigned on this project. I am satisfied that the attached report dated March 20, 1981 has been competently prepared and justly represents the information obtained from this project.

J. J. Crabb, P. Eng.

1/Nc.1

ENCLOSURES

		PAGE
ENCLOSURE NO. 1	LOCATION MAP	following page 3
ENCLOSURE NO. 2	LOCATION MAP	following page 3
ENCLOSURE NO. 3	COAL LICENCE LOCATION MAP	following page 4
ENCLOSURE NO. 4	STRATIGRAPHIC TABLE (TABLE 1)	following page 9
ENCLOSURE NO. 5	RESERVE CALCULATIONS (TABLE 2)	following page 20

	APPENDICES	SCALE	
			VOLUME I
APPENDIX A	B. C. LAND TENURE STANDING		
APPENDIX B	LAND MAP see K-Shell-Corbin SC(3)A	1:50 000	
APPENDIX C	APPLICATIONS TO EXTEND TERM OF LICENCES		
APPENDIX D	DRILL HOLE SUMMARIES AND CORE DESCRIPTIONS (12) see K-Shell-Corbin SC(3)A Book 1		
APPENDIX E	DRILL HOLE STRATIGRAPHIC SECTIONS K-Shell-Corbin SC(3)A Book 1	1:200	
			VOLUME II
APPENDIX F	DOWNHOLE GEOPHYSICAL LOGS K-Shell-Corbin SC(3)A Book 2	1:100	
APPENDIX G	LOCATION SURVEYS REPORT K-Shell-Corbin SC(2)A	1:50 000	
APPENDIX H	GEOLOGY COMPILATION MAP see K-Shell-Corbin SC(2)A	1:2 500	
APPENDIX I	GEOLOGICAL CROSS SECTIONS (15) see K-Shell-Corbin SC(2)A	1:2 500	
APPENDIX J	RESERVE CALCULATIONS		

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2/Nc1.2

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 forestry 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 Corbin townsite. A 20 km rail spur to 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 Mist Mountain 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 bituminous 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 Coal Mountain 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. Seventeen rotary holes had been drilled on the property prior to 1978, and eight full-cored holes were drilled during the 1979 exploration program. 1980 drilling consisted of 11 cored holes and 1 rotary hole. This drilling has resolved much of the structural complexity, placing most of the reserves in proven category.

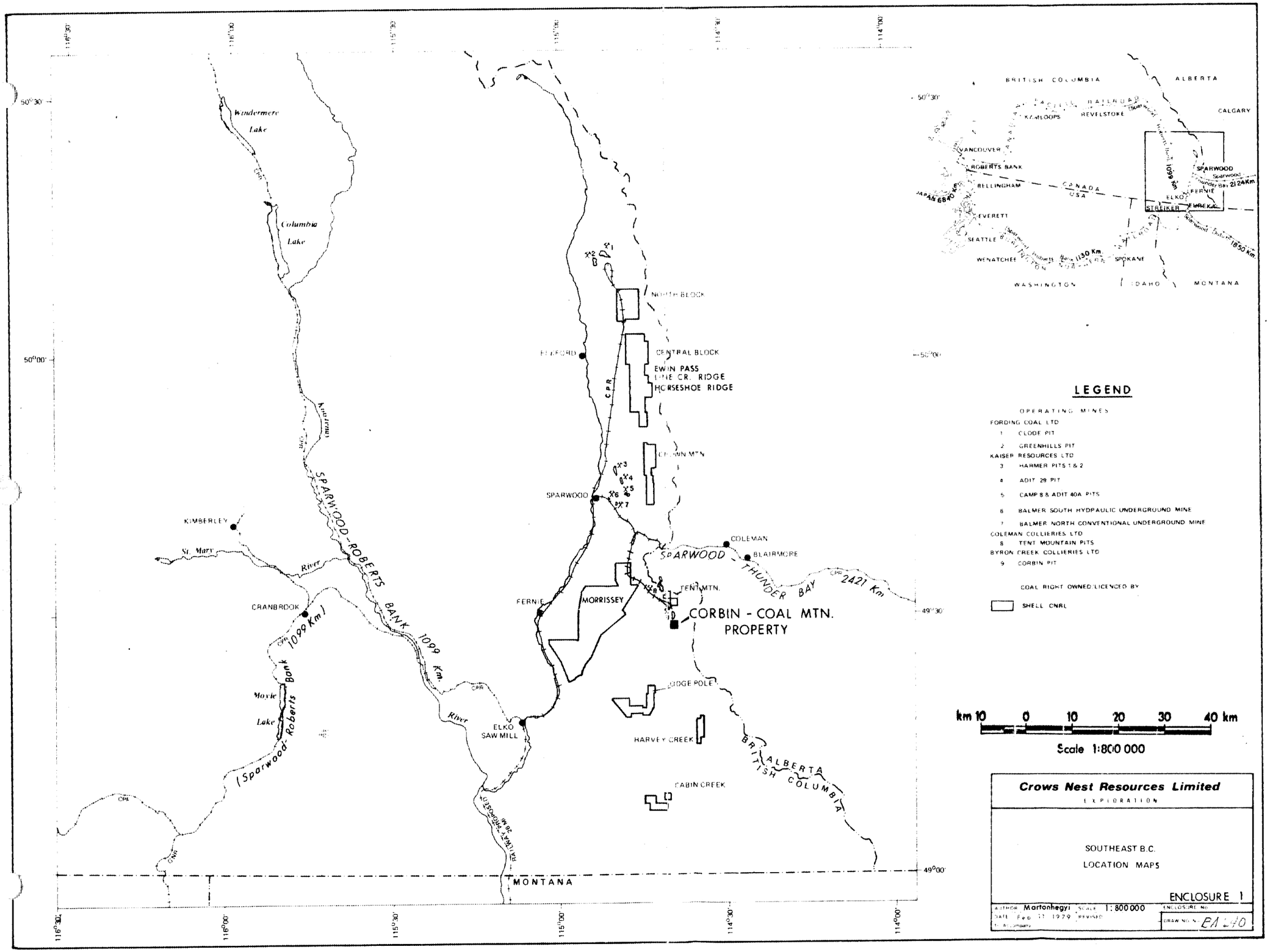
Total raw recoverable coal reserves for the upper coal zone of the Mammoth Seam have been calculated at 7.2 million tonnes. These reserves would be mineable by open pit methods. An additional 2.4 million tonnes has also been calculated for the lower high ash zone of the Mammoth Seam, but further studies of the coal quality will be required to determine whether this zone can be mined feasibly.

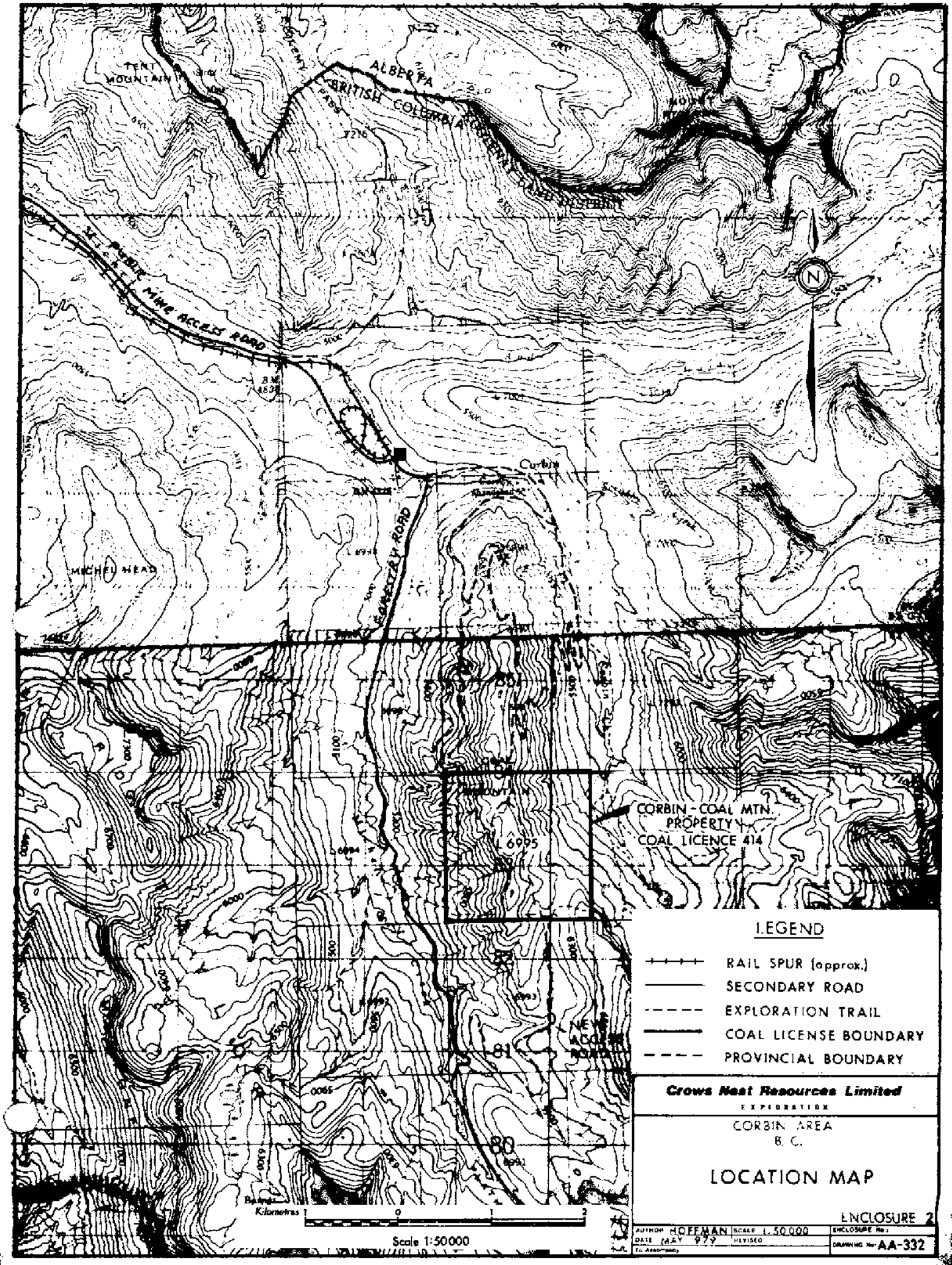
2.0 LOCATION

The Corbin-Coal Mountain property consists of one coal licence, Coal Licence No. 414, part of Group #6, which covers an area of 259 hectares. It 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. (Enclosure 1).

The Corbin-Coal Mountain coal licence covers the southern end of Coal Mountain near the former coal mining town of Corbin. Byron Creek Collieries is presently producing thermal coal from a surface mine on the northern end of the mountain.

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


Wondermere Lake
Columbia Lake
SPARWOOD-ROBERTS BANK 1099 Km.
KIMBERLEY
St. Mary River
CRANBROOK
1099 Km
Moyie Lake
(Sparwood-Roberts Bank)
ELKO
SAW MILL
FERNIE
MORRISSEY
SPARWOOD
NORTH BLOCK
CENTRAL BLOCK
EWIN PASS
LINE CR. RIDGE
HORSESHOE RIDGE
CROWN MTN
COLEMAN
BLAIRMORE
SPARWOOD - THUNDER BAY 2421 Km
TENT MTN.
CORBIN - COAL MTN. PROPERTY
JUDGE POLE
HARVEY CREEK
CABIN CREEK
ALBERTA
BRITISH COLUMBIA
MONTANA
BRITISH COLUMBIA
ALBERTA
CALGARY
KAMLOOPS
REVELSTOKE
VANCOUVER
ROBERTS BANK
BELLINGHAM
CANADA
USA
JAPAN 6840 Km
EVERETT
SEATTLE
WENATCHEE
SPOKANE
WASHINGTON
IDAHO
MONTANA
SPARWOOD
Sparwood
Thunder Bay 2124Km
ELKO
FERNIE
STREIKER
EUREKA
1099 Km
1850 Km
1130 Km
LEGEND
OPERATING MINES
FORDING COAL LTD
1 CLODE PIT
2 GREENHILLS PIT
KAISER RESOURCES LTD
3 HARMER PITS 1 & 2
4 ADIT 29 PIT
5 CAMP 8 & ADIT 40A PITS
6 BALMER SOUTH HYDRAULIC UNDERGROUND MINE
7 BALMER NORTH CONVENTIONAL UNDERGROUND MINE
COLEMAN COLLIERIES LTD
8 TENT MOUNTAIN PITS
BYRON CREEK COLLIERIES LTD
9 CORBIN PIT
COAL RIGHT OWNED/LICENCED BY
SHELL CNRL
km 10 0 10 20 30 40 km
Scale 1:800 000
Crows Nest Resources Limited
EXPLORATION
SOUTHEAST B.C.
LOCATION MAPS
ENCLOSURE 1
AUTHOR Martonhegyi SCALE 1:800 000
DATE Feb 11 1979 REVISED
ENCLOSURE NO.
DRAW NO. EA 240



Crows Nest Resources Limited

EXPLORATION

CORBIN AREA
B. C.

LOCATION MAP

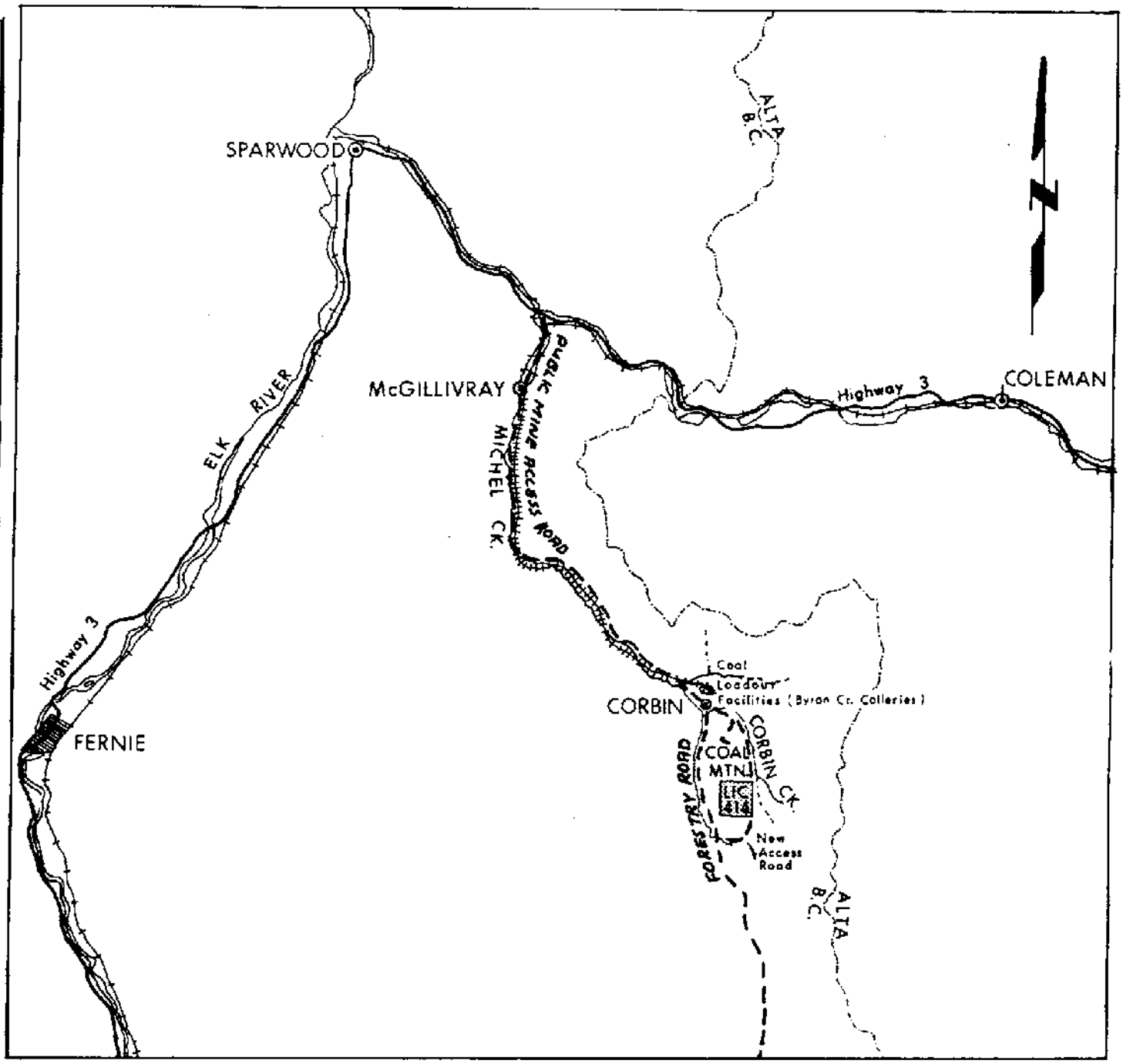
ENCLOSURE 2

AUTHOR HOFFMAN	SCALE 1:50,000	ENCLOSURE No.
DATE MAY 979	REVISED	DRAWING No. AA-332
To Accompany		

3.1 ACCESS

A forestry road runs along the western edge of coal licence No. 414 and follows Michel Creek north to Highway 3 near Sparwood, B.C., a distance of 23 km from Corbin townsite. Access to the interior of the licence is from the south on an exploration road constructed by CNRL in 1978-1979. Previously access was through the Byron Creek minesite only.

A rail spur from Corbin townsite to the CP Rail line at McGillivray, B.C. has been constructed by Byron Creek Collieries Limited (Enclosure 3). It is 20 km long and follows Michel Creek, paralleling a newly built public road which extends south, from Highway No. 3. 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

KILOMETERS

0 5 10 15

Crows Nest Resources Limited

EXPLORATION

CORBIN

SOUTHEASTERN B.C.

COAL LICENSE LOCATION

MAP

ENCLOSURE 3

AUTHOR COAL | SCALE 1:250,000 | ENCLOSURE No

DATE FEB. 79 | REVISED | DRAWING No AA-308

To Accompany

4.1 TENURE

Appendix A - C.L. Land Tenure Standing.

Appendix B - Land Map.

The B.C. Coal Licences granted to Crows Nest Industries Limited on September 19, 1974, are now held by Shell Canada Resources Limited and operated by Crows Nest Resources Limited. These three coal licences, Nos. 412, 413 and 414, Group No. 6, cover 713 ha. of Crown land.

The Corbin - Coal Mountain property is on C.L. No. 414, covering 259 hectares.

5.0 WORK DONE

5.1 Prior to 1980

Prior to 1976 Crows Nest Industries Limited carried out several exploration programs on the Corbin coal licence. This work includes geological mapping and drilling and geophysical logging 17 rotary drill holes.

The 1976 exploration program done by Crows Nest Resources involved drilling eight fully cored diamond drill holes. Geological mapping, aerial photography, surveying and road construction were also carried out. A compilation of all work done to 1978 was submitted in June, 1979 in the four-volume Crows Nest Resources Limited 1979 Corbin Geological Report.

During 1979 2.1 km of road designed to provide southern access to the coal licence was completed and upgraded. This work was reported in the Crows Nest Resources Limited 1980 Corbin-Coal Mountain Property report.

[illegible] Exploration Program

Appendix C - Applications to extend Term of Licence

Appendix D - Drill Hole Summaries and Core Descriptions

Appendix E - Drill Hole Stratigraphic Sections

Appendix F - Down Hole Geophysical Logs

Appendix G - Location Surveys Report

Fieldwork on Coal Mountain started in early June. The full length of the southern access road was ditched and placed. Culverts and shale fill were added to soft spots on the road.

Diamond drilling commenced on July 5 and continued through to September 16. Eleven drill holes totalling 1778 meters were cored and geophysically logged. All coal intersections were sampled and sent to the CNRL lab for analysis.

One rotary hole was attempted on September 18 but the hole was abandoned at 52 meters due to caving problems.

Trenching and detailed mapping were done throughout the exploration program. Backhoe trenches totalling 1.34 km were dug on existing roads and 1.55 km of new drill hole access roads. Information was recorded on 1:1000 scale detailed geological maps.

Location surveys of the drill holes, access roads and geological map control points were compiled by Shelter Canada. Approximately 11.6 km of new and old roads were surveyed using 171 traverse points.

Thurber Consultants of Vancouver conducted a preliminary mine slope stability study concurrently with the exploration. Field testing, totalling 96 man-days, involved geotechnical logging of drill core and outcrop. Data evaluation is to follow later in 1981.

Reclamation followed the completion of the drilling program. All drill sites were seeded and trenches backfilled. Details of reclamation were filed in the 1980 Corbin-Coal Mountain Reclamation Report.

5.1 Stratigraphy

The Corbin-Coal Mountain property includes strata of the upper portion of the Fernie Formation and the lower portion of the Kootenay Group (Table 1). The Fernie Formation is Jurassic in age. The Kootenay Group spans the Jurassic-Cretaceous boundary but the portion of this group which is present at Corbin is probably all of Jurassic age. The Kootenay Group is subdivided into three formations (Gibson, 1979), which in ascending order are Morrissey, Mist Mountain, and Elk (not present). In this report the coal-bearing Mist Mountain Formation is subdivided into Lower Mammoth Seam, Upper Mammoth Seam, and Upper Sandstone and Shale Series.

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

STRATIGRAPHY OF THE CORBIN COAL LICENSES

Enclousre No.4

PERIOD	FORMATION		MEMBER	BEDS	LITHOLOGY	THICKNESS
(POSSIBLY EARLY CRETACEOUS)	KOOTENAY GROUP	MIST MOUNTAIN FORMATION		Upper Sandstone and 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
		MORRISSEY FORMATION	Moose Mountain Member		Sandstone, medium to coarse-grained, highly resistant	70 - 80 m
			Weary Ridge Member		Sandstone, very fine to coarse-grained, slightly ferruginous, commonly argillaceous - carbonaceous	
JURASSIC		FERNIE FORMATION			Gray 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)

Some drawings still show the previous nomenclature. The following cross reference is used.

Previous (Jansa, 1972)	Nomenclature	Present (Gibson, 1979)
Kootenay Formation, Coal Bearing Member		Kootenay Group, Mist Mountain Formation
Kootenay Formation, Moose Mountain Member		Kootenay Group, Morrissey Formation, Moose Mountain Member and Weary Ridge Member

rock. This is overlain by grey and black shales containing abundant spherical siderite 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.

Morrissey Formation

The Morrissey Formation of the Kootenay Group is a cliff-forming, quartz-chert sandstone which conformably overlies the Fernie Formation. The lower portion, the Weary Ridge Member, consists of slightly ferruginous fine to coarse grained sandstone, commonly argillaceous-carbonaceous. The upper portion, the Moose Mountain Member, is medium to coarse grained and is more resistant.

The Morrissey Formation is approximately 70 to 80 meters thick on the Corbin coal licence. Its exact thickness has not been determined due to structural complexity and poor exposure of the lower contact.

Mist Mountain Formation

Lower Mammoth Seam

The Lower Mammoth Seam consists predominantly of very fine-grained dark grey shales with frequent carbonaceous horizons including carbonaceous shale, coal, and shaley 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. 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.

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 predominantly of coal and contains discontinuous lenses and interbeds of shale 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 consists 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.

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 Group has been removed by erosion.

The upper sediments consist of interbedded sandstone, silty sandstone, and shale, with rare carbonaceous horizons. The

sandstones are generally more argillaceous than those of the Hammondley Formation 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.

1.1 Geological Structure

Appendix H - Geology Compilation Map

Appendix I - Geological Cross Sections

A high degree of tectonic deformation at Coal Mountain produced 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 cross-sections are constructed on the assumption that tectonic history is complex and involves repeated deformations. It is difficult to determine the order of development of the folding and faulting but it is assumed that the two are often synchronous. Structural interpretations represent one of several possibilities and are influenced greatly by the structural style of previous interpretations. One should regard these sections as interpretations with the understanding that they will change with future exploration.

The general geological structure of the property is dominantly four major synclines which plunge in a northerly direction averaging about 20 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.

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.

Oriented drill core has indicated that this anticline is probably slightly overturned on its west limb. 1980 drill hole and outcrop information indicates the South, Central, and East Synclines to be very tightly folded with steeply dipping limbs. Synclinal axes are therefore projected to

[illegible] bedding that [illegible] coal [illegible]. These [illegible] there is a northerly direction and plunge [illegible] 2[illegible]. Variation and local reversals of plunge occur.

Concentric folding of the more competent sandstones accompanied by movement within the less competent coal and shale has produced thickening in the synclinal axes and thinning of the limbs. Movements parallel to bedding have allowed ductile layers to have an intricate fold pattern not reflected above or below.

The West Syncline is more broadly folded, and hinge areas in the coal measures are near surface on the Crows Nest coal licence. The 1980 field program did not reveal any obvious discrepancies with the previous geological interpretation of this syncline (area above the Blue Fault on the cross sections). This interpretation was therefore almost entirely adopted in this report.

Faulting

Nine major high angle reverse faults have been drawn in the Kootenay strata, west of the Coal Mountain Anticline. These westerly dipping, imbricate thrusts have a complex, non-planar geometry. Variations in the physical properties

of the coal measures to exerted a strong influence on thrusting and on the total pattern of deformation. These thrusts probably follow zones of weakness in the incompetent strata and shift abruptly from one zone to the next.

Displacements along these faults are not accurately measured but attempts have been made to keep throws consistent. Some of these faults may end laterally either along transverse faults with strike-slip displacement or by loss of displacement along the thrust itself. Complications in the fault zones are amplified by subsidiary faults which may rejoin the primary fault or die out in folds and along bedding. Numerous small-scale folds between the major synclines have been attributed to drag along the fault zones.

The basis of this structural interpretation is that several periods of deformation, with dominantly northeastward tectonic transport, have affected the Coal Mountain strata. Folding of several of the westward dipping faults and their termination against younger faults may therefore be justified. All the thrusts, imbricately stacked onto the Coal Mountain Anticline, have been terminated against the steeply easterly dipping Green Fault. This younger fault, rooted in the hinge of the anticline, is indicated by the

cutting out of the east [illegible] the south syncline, as seen in drill core.

Presence of a fault within the Morrissey Formation, east of the Coal Mountain Anticline, has been seen in outcrop. Its geometry (sub-parallel to bedding in the East Syncline) has been adopted from previous geological interpretations.

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.

6.3 Reserves

Appendix 3 - Reserve Calculations

All of the coal reserves of the Corbin-Coal Mountain property lie within an area of 95 hectares in which thirty seven holes have been drilled to date. The major reserves lie in the West, Central and South Synclines on the west flank of Coal Mountain. The smaller reserve area of the East Syncline on the east side of Coal Mountain would call for a separate open pit.

An estimate of reserves has been prepared on the 1979 geological interpretation (Table 2). 1980 field work and geological interpretations indicate that the coal reserves might increase somewhat but at a higher stripping ratio. Detailed reserve estimates based on the 1981 geological interpretation will be completed later in the year.

[illegible].- Coal Quality

Analyses of coal samples taken in 1980 have not been completed in time for this term report. Compilation of analyses will be reported for 1981 work.

7. BIBLIOGRAPHY

DAHLSTROM, C.D.A. (1970) - STRUCTURAL GEOLOGY IN THE EASTERN MARGIN OF THE CANADIAN ROCKY MOUNTAINS, Bull. Can. Petrol. Geol., V. 18, No. 3, pp. 332 - 410.

GIBSON, D.W. (1979) - THE MORRISSEY AND MIST MOUNTAIN FORMATIONS - NEWLY DEFINED LITHOSTRATIGRAPHIC UNITS OF THE JURA-CRETACEOUS KOOTENAY GROUP, ALBERTA AND BRITISH COLUMBIA, Bull. Can. Petrol. Geol, V. 27, No. 2, pp. 183 - 208.

HOFFMAN, G. (1979) - 1979 CORBIN GEOLOGICAL REPORT, CROWS NEST RESOURCES LTD.

NORRIS, D.K. AND PRICE, R.A. (1956) - GSC MAP 4-1956 COAL MOUNTAIN, BRITISH COLUMBIA.

ENCLOSURE No. [illegible]
(TABLE 2)

CORBIN COAL RESERVES

All Quantities in Thousands

Basis	Seam	In Situ Volume (BCM)	Mining Recovery Factor	Recovered Volume (BCM)	Coal (Tonnes)	Yield	Clean Coal (Tonnes)
1.	JK(2)	4,566	0.30	1,382	2,045	.75	1,534
	JK(3)	4,993	0.79	3,959	5,859	.85	4,983
	Total	9,559	0.56	5,341	7,904	0.82	6,517
2.	JK(2)	729	0.36	262	388	.75	291
	JK(3)	1,238	0.71	879	1,301	.85	1,106
	Total	1,967	0.58	1,141	1,689	0.83	1,397
3. = 1+2	JK(2)	5,295	0.31	1,644	2,433	.75	1,825
	JK(3)	6,231	0.78	4,838	7,160	.85	6,089
	Total	11,526	0.56	6,482	9,593	0.82	7,914
4.	JK(2)	12,381	0.28	3,506	5,189	.75	3,892
	JK(3)	6,876	0.72	4,999	7,399	.85	6,289
	Total	19,257	0.44	8,505	12,588	0.81	10,181

1. Operating limit of north wall not crossing Corbin licence boundary mineable reserves (B.A. Simons).
2. No limit on wall position to the north, mineable reserves between licence boundary and north wall only.
3. Total mineable reserves (1 + 2).
4. Total In Situ reserves (no mining limitations).

APPENDIX J

CORBIN COAL RESERVE ESTIMATION

The following is a list of assumptions used in calculating the mineable reserves of Corbin.

- The majority of the reserves were defined in the H.A. Simons study dated March 1980. These were mineable reserves maximizing recovery of the Upper Mammoth seam. These were assumed to be correct and are included.
- The Lower Mammoth seam was included only when it fell within the pit boundary.
- The north wall increment was originally excluded from the reserve calculations by H.A. Simons. It is that area which rests between the north wall as designed by H.A. Simons and the licence boundary.
- The north wall increment reserves were calculated by CNRL in order to determine total mineable reserves. It assumes Byron Creek and CNRL come to some form of operating agreement eliminating the licence boundary as an operating limit.
- The north wall increment includes all 4 synclines found at Corbin namely, the west, central, south and east synclines.
- The west, central and south synclines were mined in one pit, the east as a second pit.
- Wall angles were assumed to be 45°.
- Volumes were calculated from 10 m. increment bench plans.

[illegible]

The study is based on geology as interpreted prior to the 1981 further exploration program.

The 1980 exploration program analysis is not scheduled to be completed until March 31, 1981.

However, significant changes have been noted in that the central and south synclines extend much deeper than originally thought. They also are found with a limb of their synclines overturned.

This indicates there are greater reserves at Corbin than are shown on the following table.

However, it should be noted that the ratio of waste to coal will likely be higher.

APPENDIX A

CROWS NEST RESOURCES LIMITED
EXPLORATION

B.C. COAL LICENCES
TENURE STANDING

BLOCK: CORBIN
GROUP: #6

PROJECT: CORBIN
KOOTENAY LAND DISTRICT

YEAR: 1980
DATE: APRIL 1981

PROJECT NAME	PROJECT LICS. TOTAL NO.	PROJECT AREA TOTAL AC/HA	BLOCK NAME	BLOCK LIC. TOTAL NO.	BLOCK AREA TOTAL AC/HA	GROUP NO.	GROUP LICS. TOTAL NO.	GROUP AREA TOTAL AC/HA	GROUP YEAR	LICENCE NO.	LICENCE LEGAL DESCRIPTION	LICENCE AREA TOTAL AC/HA	ACQ/ADM FEES YEAR	ACQ/ADM FEES $10³	RENTALS ANNUAL $	RENTALS TOTAL TO NEXT ANN. $10³	REQUIREMENT WORK EXPIRED $10³	REQUIREMENT WORK CURRENT YEAR LIC. TERM	REQUIREMENT WORK CURRENT YEAR $	REQUIREMENT WORK PRE-BULL YEAR	REQUIREMENT WORK CURRENT ANNIVERSARY $	REQUIREMENT WORK CURRENT ANNIVERSARY DATE	BUDGET CURRENT YEAR NAE	BUDGET CURRENT YEAR $10³	EXP TOTAL $10³	POTL SHELL EXPIRED	COMMITMENTS, J. V. OTHER THAN B.C. GOV'T DESCRIPTION	REMARKS
CORBIN	3	713				6	3	713	76				74	1.600	3565	17.7	383.1	7	8,800	10+	170,108	JAN. 31			2,640.7	Y		
			COAL MTN.	1	259					414	LOT 6995	259		1.400														
			TENT MTN.	2	454					412	S½ & NE¼ OF LOT 7002	195		200														
										413	LOT 7001	259																
														WORK DONE	PRIOR TO '78	1978	1979		1980									
CORBIN						6	3	713 HA. 1760 AC						6	153,505	407,548	50,408		516,208									

GENERAL REMARKS: FILL NECESSARY LINES AND COLUMNS ONLY. COAL DEVELOPMENT POTENTIAL IS "Y" (PRIME) UNLESS OTHERWISE STATED. LICENCES HELD BY SHELL CANADA RESOURCES LTD.- CNRL IS THE OPERATOR.

C001BR
Fig. 10 M-918

APPENDIX C

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

APPLICATION TO EXTEND TERM OF LICENCE

I, Bolton Agnew (Name) agent for Shell Canada Resources Limited (Name)

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

Calgary, Alberta, T2P 2H5.

Valid FMC No. 207568

hereby apply to the Minister to extend the term of Coal Licence(s) No(s). 412, 413, 414

3 Licences; 713 Hectares

for a further period of one year.

2. Property name Corbin - Coal Mountain - Tent Mountain; Group #6, Kootenay Land District

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

4. I have performed, or caused to be performed, during the period January 30, 1980 to January 31, 19 81, work to the value of at least $ 516,206.13

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

CATEGORY OF WORK	Licence(s) No(s).	Apportioned Cost
Geological mapping	412, 413, 414	$63,286.43
Surveys: Geophysical		
Geochemical		
Other - Location	412, 413, 414	15,713.33
Road construction	414	43,937.10
Surface work	414	8,725.23
Underground work		
Drilling	414	339,863.76
Logging, sampling, and testing	414	29,055.63
Reclamation	414	8,449.65
Other work (specify)		
Off-property costs to date		7,175.00

5. I wish to apply $ 516,206.13 of this value of work on Coal Licence(s) No(s). 412, 413, 414

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

7. The work performed on the location(s) is detailed in the attached report entitled Corbin-Coal Mountain Geological Report '80 and Corbin-Tent Mountain Geological Report '80 will be submitted in ninety days.

1981.01.28 (Date)

(Signature)

Land Supervisor (Position)

(FORMS AND REPORT TO BE SUBMITTED IN DUPLICATE)

CORBIN COAL MOUNTAIN PROJECT

Application to extend term of licence for the entire group was submitted January 28th, 1981

CATEGORY OF WORK

GEOLOGICAL MAPPING Yes ☒ No ☐

		Area (Hectares)	Scale	Duration
Reconnaissance				
Detail:	Surface	259	1:1000	81 man-days
	Underground			
*Other (specify)				

Total Cost $ 57,555.38

GEOPHYSICAL/GEOCHEMICAL SURVEYS Yes ☒ No ☐

Method
Grid
Topographic Location Surveys
*Other (specify)

Total Cost $ 13,613.33

ROAD CONSTRUCTION Yes ☒ No ☐

Length 1.55 km Width 5 m
On Licence(s) No(s). 414
Access to Drill holes and backhoe trending

Total Cost $ 43,937.10

SURFACE WORK Yes ☒ No ☐

	Length	Width	Depth	Cost
Trenching	1.34 km	1 m	2 m	
Seam Tracing				
Crosscutting				
*Other (specify)				

Total Cost $ 8,725.23

UNDERGROUND WORK Yes ☐ No ☒

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

Total Cost $

DRILLING Yes ☒ No ☐

		Hole Size	No. of Holes	Total Metres	Cost
Core:	Diamond		11	1777	
	Wireline				
Rotary:	Conventional		1	52	
	Reverse circulation				
*Other (specify)					

Contractor Tonto Drilling, Nielsen Drilling
Where is the core stored? on property (CL 414)

Total Cost $ 339,863.76

LOGGING, SAMPLING AND TESTING Yes ☒ No ☐

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

Total Cost $ 29,055.63

OTHER WORK (specify details) Cost

Reclamation

Total Cost $ 8,449.65
On-property costs 501,200.08
Off-property costs 7,175.00
Total Expenditures $508,375.08

Original dated 1981.01.28
(Date)

ORIGINAL SIGNED BY
W. S. KOWALSKI
(Signature)

Manager - Accounting CNRL
(Position)

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

CATEGORY OF WORK

GEOLOGICAL MAPPING

Yes ☒ No ☐

		Area (Hectares)	Scale	Duration
Reconnaissance		454	1:5,000	
Detail:	Surface	10 + 259	1:5,000 & 1:1,000	97 Man-Days
	Underground			

*Other (specify)

Total Cost $ 63,286.43

GEOPHYSICAL/GEOCHEMICAL SURVEYS

Yes ☒ No ☐

Method

Grid

Topographic Location Surveys

*Other (specify)

Total Cost $ 15,713.33

ROAD CONSTRUCTION

Yes ☒ No ☐

Length 1.55 km Width 5 m

On Licence(s) No(s). 414

Access to Drill Sites

Total Cost $ 43,937.10

SURFACE WORK

Yes ☒ No ☐

	Length	Width	Depth	Cost
Trenching	1.34 km	1 m	2 m	
Seam Tracing				
Crosscutting				

*Other (specify)

Total Cost $ 8,725.23

UNDERGROUND WORK

Yes ☐ No ☒

	No. of Adits	Maximum Length	No. of Holes	Total Metres	Cost
Test Adits					

*Other workings

Total Cost $

DRILLING

Yes ☒ No ☐

		Hole Size	No. of Holes	Total Metres	Cost
Core:	Diamond		11	1,777	
	Wireline				
Rotary:	Conventional		1	52	
	Reverse circulation				

*Other (specify)

Contractor Tonto (Diamond), Nielsen (Rotary) Drilling Companies

Where is the core stored? BC CL 414

Total Cost $ 339,863.76

LOGGING, SAMPLING AND TESTING

Yes ☒ No ☐

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

To Date Total Cost $ 29,055.63

OTHER WORK (specify details)

Cost

Reclamation (harrowing, fertilizing, seeding) roads and drill sites

Total Cost $ 8,449.65

On-property costs 509,031.13

To Date Off-property costs 7,175.00

To Date Total Expenditures $ 516,206.13

1981.01.28
(Date)

(Signature)

Manager - Accounting, CNRL
(Position)

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

K-Shell-Corbin 80 (3)A

82G17

MAPS AND
X-SECTIONS

C.L.#414

P.L.Kirmeier
K.Sharmon
March 30 '87

389

Part 4 of 4

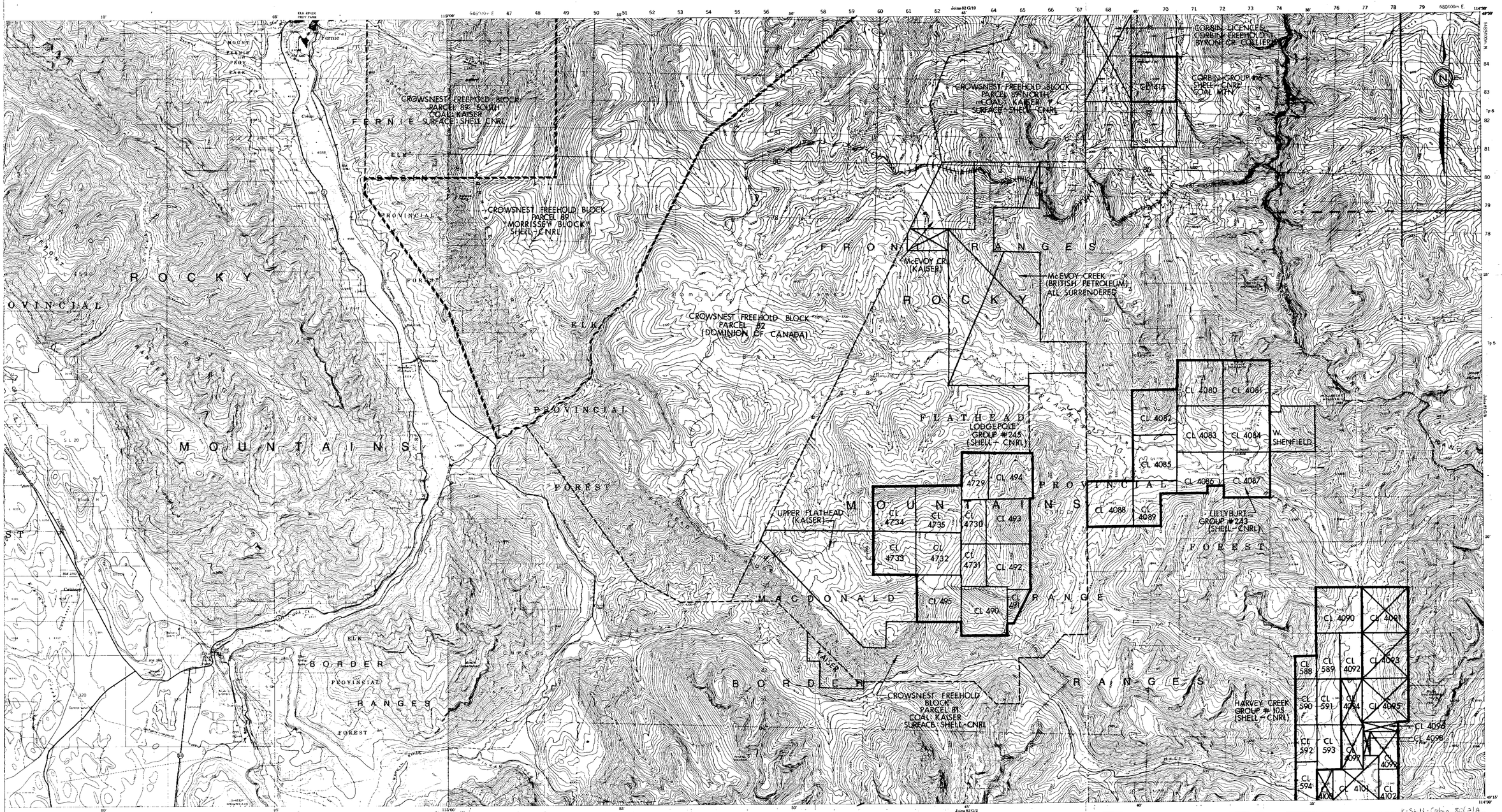
APPENDIX B

OPEN FILE

OPEN FILE

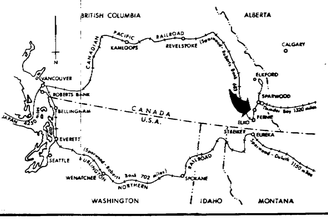
GEOLOGICAL BRANCH
ASSESSMENT REPORT

00 389



COMPANY COLOR CODE

- SHELL - CNRL
- SAGE CREEK COAL LTD.
- KAISER RESOURCES LTD.
- DOMINION OF CANADA
- BYRON CREEK COLLIERIES LTD.
- COLEMAN COLLIERIES LTD.
- FORDING COAL LTD. AND OTHER C.P. COMPANIES
- ELCO MINING LTD.



COAL LAND TENURE

FREEHOLD	LICENCES
	BORDER OF SHELL-CURL GROUPS BLOCK ETC.
	APPLICATION FOR ABOVE
	OUTLINE OF HOLDINGS BY OTHER THAN SHELL-CURL
	APPLICATION FOR B.C. COAL LICENCE BY OTHER THAN SHELL-CURL
	B.C. COAL LICENCE BORDER SHELL-CURL ONLY.

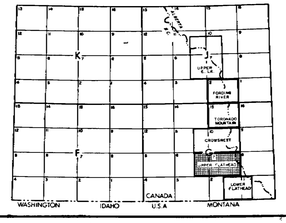
NOTE

B.C. COAL LICENCES WERE ISSUED AND REVOKED COVERING MOST PART OF THE DOMINION COAL BLOCK PARCEL 82. THESE OLD LICENCES ARE NOT SHOWN ON THE MAP.

SCALE 1:50,000

MILES 1 0 1 2 3

METRES 1000 0 1000 2000 3000



SHELL CANADA RESOURCES LIMITED
COAL DEVELOPMENT

UPPER FLATHEAD
KOOTENAY LAND DISTRICT
SOUTHEASTERN B.C.
LAND MAP

SHELL - CNRL LICENCE GROUPS	
#4	1 OF 1
#245	1 OF 1
#105	2 OF 2
#243	1 OF 1

PROJECTS	
CORBIN COAL MTN.	1 OF 1
LODGEPOLE CR.	1 OF 1
LILLYBURT	1 OF 1
HARVEY	2 OF 2

NTS 82 G/7 & G/8E

AUTHOR: F. Mortonhegyi	SCALE: 1:50 000	DRAWING No.: H.H. - 38
DATE: Sept. 1977	REVISED: March 1980	ENCLOSURE No.:
To Accompany		

Appendix B

BERMUDIAN OFFERLAYS IN VU24

1

387 4/4

INTER-OFFICE CORRESPONDENCE

DATE: December 3, 1980

TO: CROWSNEST RESOURCES LIMITED (CNRL)

FROM: Sheltech Canada

SUBJECT: Location Survey
CORBIN (COAL MTN.) 4051 K
CORBIN (TENT MTN.) 4051 L

All survey work done in the Corbin (Coal Mtn.) area was taken from Quest and Squaw Mtn. using the 1979 Doppler Satellite data as the datum. From these two stations, two more control stations were established (Flat and Pin) with a relative precision of 1/200,000.

Using these control stations, 121 traverse points were surveyed from which 12 drill holes were picked up. Using these traverse points approximately 11.6 km of new and old road was surveyed with all road traverses being tied to the control network with excellent results.

Using the control stations set up for Corbin (Coal Mtn.), 8 geological control stations were established in the Corbin (Tent Mtn.) area.

Conventional survey methods using both 1" and 20" theodolites and electronic distance measuring equipment were used to obtain x,y,z values for the above mentioned points.

All calculations were done using the UTM system with both distances and bearing reduced to plane and being referenced to 117° W. The results were given to CNRL personnel in both tabular and plan form.

The cost attributed to Corbin (Coal Mtn.) was approximately $13,300.

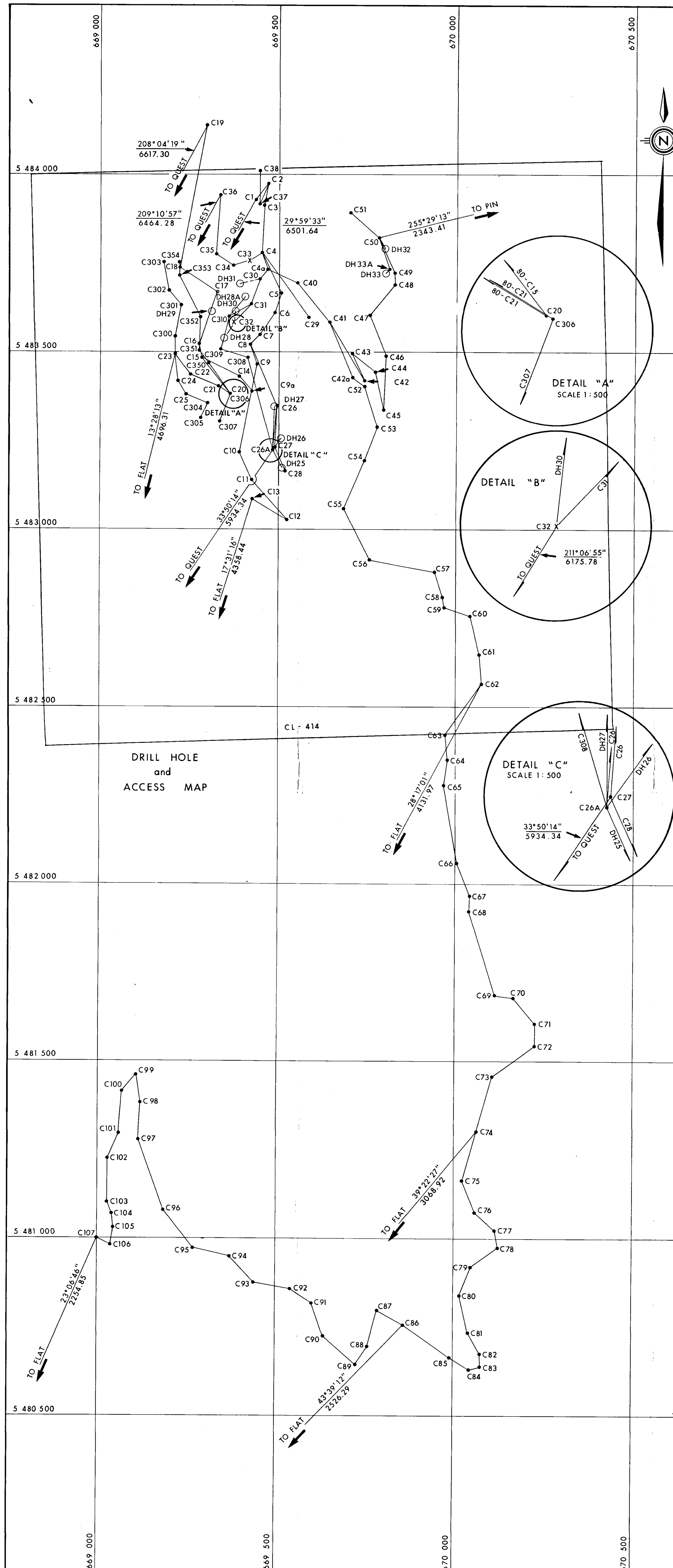
The cost attributed to Corbin (Tent Mtn.) was approximately $1,400.

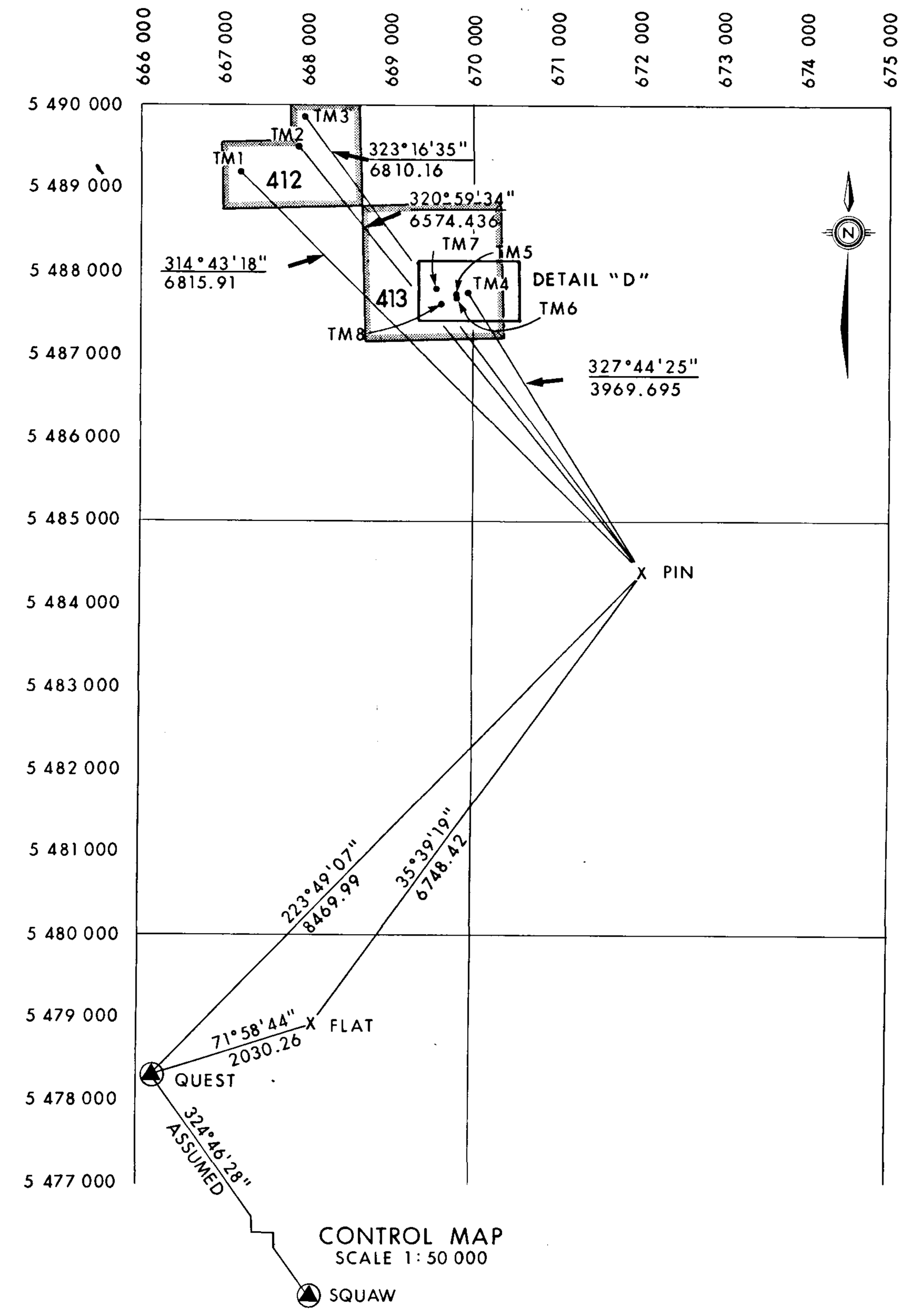
Dave Poulsom

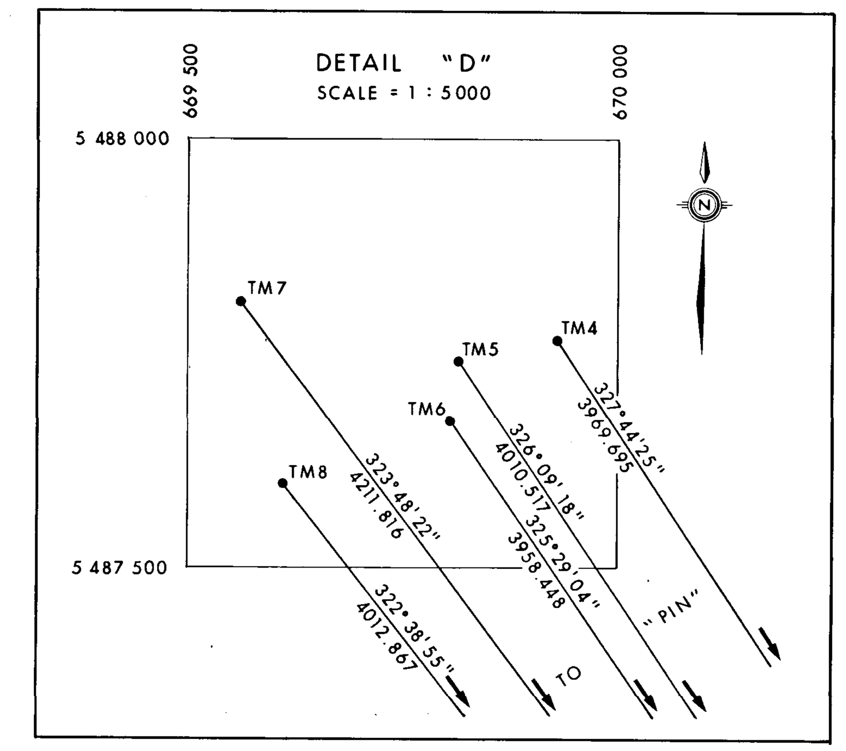
Dave Poulsom

DP/eh

APPENDIX G







ROAD EXTENSIONS

STATION	BEARING	DISTANCE	NORTHING	EASTING	ELEVATION
Quest			5 478 299.98	666 184.06	2441.74
80-C23	30-12-28		5 483 495.00	669 208.68	1969.7
80-C300	358-25-46	50.530	5 483 545.51	669 207.30	1969.9
80-C301	12-19-41	90.342	5 483 633.77	669 226.58	1970.7
80-C302	319-26-38	51.669	5 483 673.03	669 192.99	1971.8
80-C303	349-07-41	81.433	5 483 753.00	669 177.63	1975.6
Quest					
80-C25	31-02-27		5 483 379.62	669 241.28	1957.4
80-C304	110-43-18	65.656	5 483 356.39	669 302.69	1960.0
80-C305	206-27-06	47.159	5 483 314.17	669 281.68	1959.0
Quest					
80-C21	31-38-52		5 483 404.16	669 330.16	1988.1
80-C306	121-21-34	39.628	5 483 383.54	669 364.00	1991.5
80-C307	200-54-18	85.091	5 483 304.05	669 333.64	1992.1
Quest					
80-C26A	33-50-31		5 483 226.90	669 487.72	2066.58
80-C308	343-47-39	269.247	5 483 485.45	669 412.58	2028.8
80-C309	287-41-21	79.483	5 483 509.60	669 336.85	2025.4
80-C310	14-48-01	94.829	5 483 601.28	669 361.08	2026.6
80-C31	60-21-37	69.019	5 483 635.42	669 421.06	2029.1

DRILL HOLES

STATION	BEARING	DISTANCE	NORTHING	EASTING	ELEVATION
80-C309					
80-C310	14-48-01		5 483 601.28	669 361.08	2029.1
DH 28	194-22-58	62.883	5 483 540.37	669 345.46	2025.4
80-C309					
80-C310	14-48-01		5 483 601.28	669 361.08	2029.1
DH-28A	38-17-01	69.055	5 483 655.49	669 403.86	2025.1
Quest					
80-C26A	33-50-31		5 483 226.90	669 487.72	2066.6
DH-27	0-22-10	170.433	5 483 392.33	669 488.82	2052.0
DH-27A	94°	1.22	5 483 397.24	669 490.04	2052.0
80-C51					
80-C50	130-44-44		5 483 823.97	669 779.79	1923.1
DH-32	153-18-17	36.290	5 483 791.55	669 796.09	1924.6
80-C51					
80-C50	130-44-44		5 483 823.97	669 779.79	1923.1
80-DH33A	161-26-24	92.965	5 483 735.84	669 809.38	1932.4
DH-33	223-43-03	16.190	5 483 724.14	669 798.19	1933.0
DH-29					
DH-29A	96°	1.93	5 483 615.73	669 314.26	2000.6

ROAD EXTENSIONS

STATION	BEARING	DISTANCE	NORTHING	EASTING	ELEVATION
80-C21					
80-C306	121-21-34		5 483 383.54	669 364.00	1991.5
80-C350	325-04-16	107.80	5 483 471.92	669 302.28	2000.8
80-C351	322-34-07	43.60	5 483 506.54	669 275.78	1997.9
80-C352	2-47-51	94.26	5 483 600.69	669 280.38	1989.4
80-C353	332-41-12	130.57	5 483 716.70	669 220.47	1995.1
80-C354	2-33-00	37.52	5 483 754.19	669 222.13	2000.9

ACCESS ROAD COORDINATES

STATION	BEARING	DISTANCE	NORTHING	EASTING	ELEVATION
Squaw					
Quest	324 46 28				
80-C1	29 59 33	6501.64	5 483 930.79	669 434.14	2060.0
80-C2	38 21 11	57.24	5 483 975.68	669 469.66	2052.1
80-C3	190 58 56	64.33	5 483 912.53	669 457.41	2049.8
80-C4	181 54 41	134.37	5 483 778.23	669 452.92	2033.8
80-C5	154 20 20	124.83	5 483 665.71	669 506.98	2034.9
80-C6	197 56 48	57.86	5 483 610.67	669 489.15	2039.2
80-C7	214 11 02	73.70	5 483 549.70	669 447.74	2041.6
80-C8	227 03 45	38.96	5 483 523.16	669 419.22	2037.1
80-C9	159 56 58	59.73	5 483 467.05	669 439.70	2030.0
80-C10	190 54-05	254.02	5 483 217.62	669 391.66	2017.4
80-C11	157 04 02	84.35	5 483 139.93	669 424.53	2009.1
80-C12	138 01 00	149.87	5 483 028.53	669 524.78	1993.6
80-C13	299 34 44	112.31	5 483 083.97	669 427.10	1982.5
80-C8					
80-C9					
80-C9a	189 32 17	79.09	5 483 389.05	669 426.59	2018.2
80-C14	318 30 12	55.89	5 483 430.91	669 389.56	2011.3
80-C15	297 35 32	116.48	5 483 484.87	669 286.33	2000.1
80-C16	348 40 54	39.45	5 483 523.55	669 278.59	1999.2
80-C17	18-36-59	153.97	5 483 669.46	669 327.74	2002.3
80-C18	303 30 33	125.04	5 483 738.49	669 223.48	2001.7
80-C19	10 33 11	406.86	5 484 138.47	669 298.00	2022.2
80-C14					
80-C15		–			
80-C20	142 55 42	125.95	5 483 384.37	669 362.25	1991.0
80-C21	301 39 28	37.70	5 483 404.16	669 330.16	1988.1
80-C22	293 00 21	84.75	5 483 437.28	669 252.15	1977.5
80-C23	322 59 15	72.14	5 483 494.89	669 208.72	1970.2
80-C24	172 30 41	75.42	5 483 420.11	669 218.55	1961.4
80-C25	150 41 46	46.43	5 483 379.62	669 241.28	1957.4
80-C7					
80-C8					
80-C26	156 00 20	190.77	5 483 348.88	669 496.80	2056.3
80-C27	183 50 42	120.49	5 483 228.66	669 488.72	2066.6
80-C28	155 50 55	69.35	5 483 165.38	669 517.09	2060.8
80-C3					
80-C4					
80-C29	155 41 26	199.43	5 483 596.48	669 535.02	2049.5
80-C1					
80-C2					
80-C37	200 52 42	56.85	5 483 922.56	669 449.40	2055.67
80-C38	359 47 20	90.64	5 484 013.20	669 449.07	2061.70
80-C3					
80-C4					
80-C4a	160 32 32	47.07	5 483 733.85	669 468.60	2029.1
80-C30	215 20 52	34.47	5 483 705.73	669 448.66	2029.8
80-C31	201 26 31	75.55	5 483 635.41	669 421.04	2029.1
80-C32	223 03 40	66.51	5 483 586.82	669 375.63	2032.0
80-C3					
80-C4					
80-C33	241 25 57	37.59	5 483 760.26	669 419.91	2039.3
80-C34	252 46 37	49.34	5 483 745.65	669 372.78	2039.5
80-C35	305 22 49	58.73	5 483 779.65	669 324.89	2034.0
80-C36	3 50 44	164.11	5 483 943.30	669 335.90	2037.4
80-C4					
80-C4a					
80-C40	114 04 37	91.48	5 483 696.53	669 552.12	2034.0
80-C41	141 00 23	144.74	5 483 584.04	669 643.20	2022.3
80-C42	149 10 30	190.51	5 483 420.44	669 740.82	2004.1
80-C43	335 11 24	87.07	5 483 499.47	669 704.28	1995.4
80-C44	128 58 00	88.35	5 483 443.91	669 772.97	1985.2
80-C45	167 02 51	108.58	5 483 338.09	669 797.31	1979.7
80-C46	2 05 24	153.30	5 483 491.29	669 802.90	1961.6
80-C47	337 18 11	120.87	5 483 602.80	669 756.26	1940.0
80-C48	38 45 04	110.98	5 483 689.35	669 825.73	1930.2
80-C49	358 46 07	35.56	5 483 724.90	669 824.97	1928.6
80-C50	335 27 35	108.74	5 483 823.82	669 779.80	1923.4
80-C51	310 44 44	106.80	5 483 893.53	669 698.89	1922.1
80-C41					
80-C42a	157 43 47	166.54	5 483 429.92	669 706.31	2012.0
80-C52	126 59 33	47.04	5 483 401.82	669 743.88	2008.0
80-C53	164 00 33	117.63	5 483 288.54	669 776.29	2002.7
80-C54	200 50 13	96.94	5 483 197.94	669 741.80	1996.5
80-C55	202 18 49	152.44	5 483 056.92	669 683.93	1978.9
80-C56	151 48 43	159.61	5 482 916.24	669 759.32	1960.1
80-C57	102 05 19	183.53	5 482 877.80	669 938.71	1943.1
80-C58	158 50 37	72.48	5 482 810.21	669 964.94	1936.0
80-C59	176 41 34	27.95	5 482 782.30	669 966.55	1933.3
80-C60	111 42 46	79.50	5 482 752.84	670 040.41	1926.0
80-C61	166 33 28	108.98	5 482 646.90	670 065.75	1910.7
80-C62	175 07 24	80.90	5 482 566.29	670 072.62	1897.1
80-C63	215 25 25	176.82	5 482 422.61	669 970.19	1882.6
80-C64	173 12 00	73.29	5 482 349.84	669 978.87	1879.4
80-C65	188 29 43	72.17	5 482 278.46	669 968.21	1870.2
80-C66	170 58 53	221.58	5 482 059.62	670 002.94	1858.3
80-C67	157 25 28	100.30	5 481 967.00	670.041.45	1854.2
80-C68	184 55 04	45.74	5 481 921.43	670 037.53	1851.8
80-C69	161 43 43	245.15	5 481 688.64	670 114.39	1851.1
80-C70	99 29 34	50.8	5 481 680.26	670 164.49	1851.9
80-C71	141 24 50	97.61	5 481 603.96	670 225.37	1853.1
80-C72	180 59 15	61.19	5 481 542.78	670 224.31	1853.5
80-C73	234 09 44	144.28	5 481 458.31	670 107.35	1852.3
80-C74	196 17 36	164.46	5 481 300.45	670 061.20	1851.6
80-C75	196 23 36	139.40	5 481 166.49	670 022.25	1848.2
80-C76	158 16 20	99.44	5 481 074.11	670 059.06	1847.1
80-C77	132 24 42	76.25	5 481 022.69	670 115.36	1842.5
80-C78	167 57 06	49.30	5 480 974.47	670 125.65	1837.2
80-C79	234 10 39	95.72	5 480 918.45	670 048.03	1835.2
80-C80	201 38 49	84.02	5 480 840.35	670 017.04	1832.6
80-C81	167 54 43	109.12	5 480 733.65	670 039.89	1822.6
80-C82	151 16 22	69.01	5 480 673.14	670 073.06	1822.1
80-C83	177 26 55	33.67	5 480 639.50	670 074.56	1818.9
80-C84	252 35 26	31.34	5 480 630.12	670 044.66	1811.3
80-C85	301 14 49	65.38	5 480 664.04	669 988.76	1806.2
80-C86	305 14 00	159.57	5 480 756.10	669 858.42	1791.9
80-C87	299 53 43	85.46	5 480 798.33	669 784.51	1779.3
80-C88	193 19 27	104.85	5 480 696.30	669 760.35	1769.1
80-C89	211 15 09	61.32	5 480 643.88	669 728.53	1763.6
80-C90	310 37 33	123.17	5 480 724.07	669 635.05	1757.6
80-C91	341 40 21	100.22	5 480 819.21	669 603.54	1753.8
80-C92	302 22 38	72.42	5 480 857.99	669 542.38	1750.3
80-C93	279 23 32	104.81	5 480 875.09	669 438.97	1747.8
80-C94	317 41 46	100.69	5 480 949.56	669 371.20	1747.4
80-C95	281 45 47	106.30	5 480 971.23	669 267.13	1748.7
80-C96	323 23 50	138.30	5 481 082.26	669 184.67	1745.8
80-C97	340 51 22	207.34	5 481 278.13	669 116.67	1733.2
80-C98	2 42 05	104.81	5 481 382.83	669 121.61	1730.3
80-C99	350 49 57	81.99	5 481 463.77	669 108.55	1723.0
80-C100	219 15 52	61.97	5 481 415.79	669 069.33	1716.0
80-C101	184 05 16	119.46	5 481 296.64	669 060.81	1709.9
80-C102	204 49 11	77.64	5 481 226.17	669 028.22	1700.2
80-C103	180 09 45	123.84	5 481 102.33	669 027.87	1690.6
80-C104	157 18 47	33.85	5 481 071.10	669 040.93	1689.6
80-C105	172 19 31	39.21	5 481 032.24	669 046.16	1685.9
80-C106	188 04 34	51.36	5 480 981.39	669 038.95	1680.7
80-C107	297 35 04	43.79	5 481 001.66	669 000.14	1676.5

LEGEND

- • — PLANT 6" NAIL
- X — PLANT 12" SPIKE
- ⊛ — FOUND 1st GEODETIC CONTROL STATION
- ⊙ — DRILL HOLE

Scale 1:5000

ALL DISTANCES HAVE BEEN REDUCED TO THE U.T.M. PLANE AND ARE IN METRES AND DECIMALS THEREOF
ALL BEARINGS REFERRED TO 117° W
SURVEYED JULY – AUGUST 1980 BY Sheltech Canada.

DRILL HOLES

STATION	BEARING	DISTANCE	NORTHING	EASTING	ELEVATION
80-C26					
80-C26a	184 15 18	122.32	5 483 226.90	669 487.72	2066.6
DH-25	156 15 12	62.61	5 483 169.59	669 512.93	2060.71
80-C26					
80-C26a					
DH-26	35 13 47	36.36	5 483 256.60	669 508.69	2069.3
80-C15					
80-C16					
DH-29	20-04-09	98.35	5 483 615.93	669 312.34	2000.6
80-C4a					
80-C30					
DH-31	258 53 04	61.58	5 483 693.86	669 388.24	2027.0
80-C31					
80-C32					
DH-30	6 08 31	27.95	5 483 614.11	669 378.57	2026.8

TENT MTNO

STATION	NORTHING	EASTING	ELEVATION
TM 1	5 489 207.3	667 205.5	1851.9
TM 2	5 489 520.0	667 910.4	1682.9
TM 3	5 489 870.2	667 976.8	1682.7
TM 4	5 487 768.2	669 929.6	1756.8
TM 5	5 487 742.2	669 814.8	1734.1
TM 6	5 487 672.9	669 805.4	1706.4
TM 7	5 487 810.3	669 561.3	1704.5
TM 8	5 487 601.2	669 613.8	1632.8

CONTROL

STATION	NORTHING	EASTING	ELEVATION
Squaw	5 473 613.92	669 492.35	2364.26
Quest	5 478 299.78	666 184.06	2441.74
Flat	5 478 927.88	668 114.72	2276.08
Pin	5 484 411.23	672 048.42	2272.91

*N.B. Coordinates & Elevation for Quest and Squaw from 1979 Shell Doppler.

② 389 4/4

K-Shell-Corbin 80(2)A

Sheltech Canada

Crows Nest Resources Limited

ENGINEERING

CORBIN
S.E. B.C.

TRAVERSE SURVEY MAP

appendix G

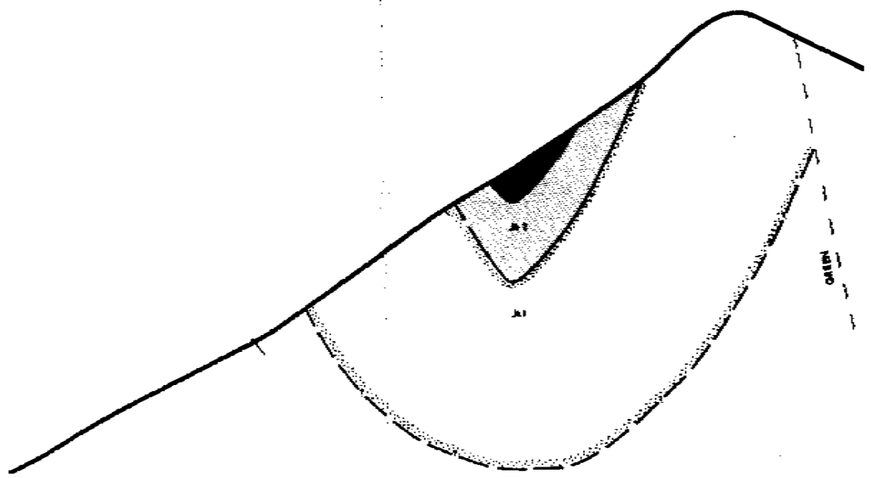
AUTHOR: SHELTECH	SCALE: 1 : 5000	ENCLOSURE No:
DATE: 81 01 28	REVISED:	DRAWING No: HI-65 B
To Accompany		

APPENDIX H

APPENDIX I

SECTION 100N
WEST

SECTION 100N
EAST



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K-Shell-Corbin 80/21A

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, stoney coal and thin coal lenses.
Jk (1)	KOOTENAY FM. – Moose Mountain Sandstone.
Jf	FERNIE FM. – Marine shale and siltstone.

Jk (2b)	Upper Mammoth Seam: upper split.
Jk (2bi)	Interbedded siltstone and mudstone.
Jk (2a)	Upper Mammoth Seam: lower split.
Jk (2ai)	Interbedded mudstone and claystone.
Jk (2a)	Lower Mammoth Seam.

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Crows Nest Resources Limited
EXPLORATION

CORBIN AREA
B.C.

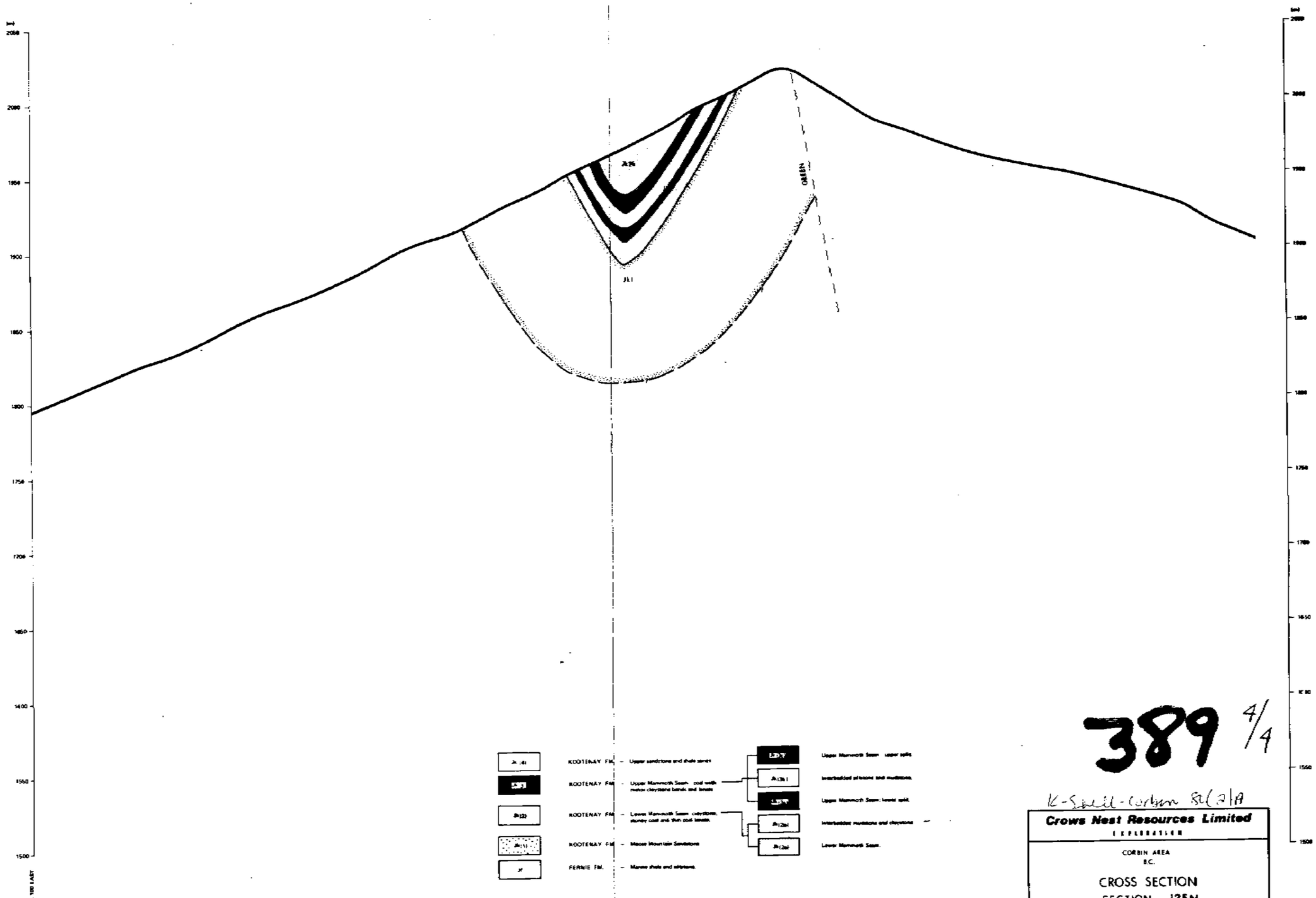
CROSS SECTION
SECTION 100 N

AUTHOR P. GAUMAR	SCALE : —	ENCLOSURE No.
DATE 81/06	DRAWN BY :	DRAWING No. HJ - 57
Ex. Accountant	Revised Date	

appendix I

SECTION 125N
WEST

SECTION 125N
EAST



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K-Shell-Corbin 82(2)A

Crows Nest Resources Limited
EXPLORATION

CORBIN AREA
B.C.

CROSS SECTION
SECTION 125N

AUTHOR F.GUMAR	SCALE —	INCLOSURE No.
DATE 81/08	REVISED	DRAWING No. H3 - 57A
To Accompany	Revised Date	

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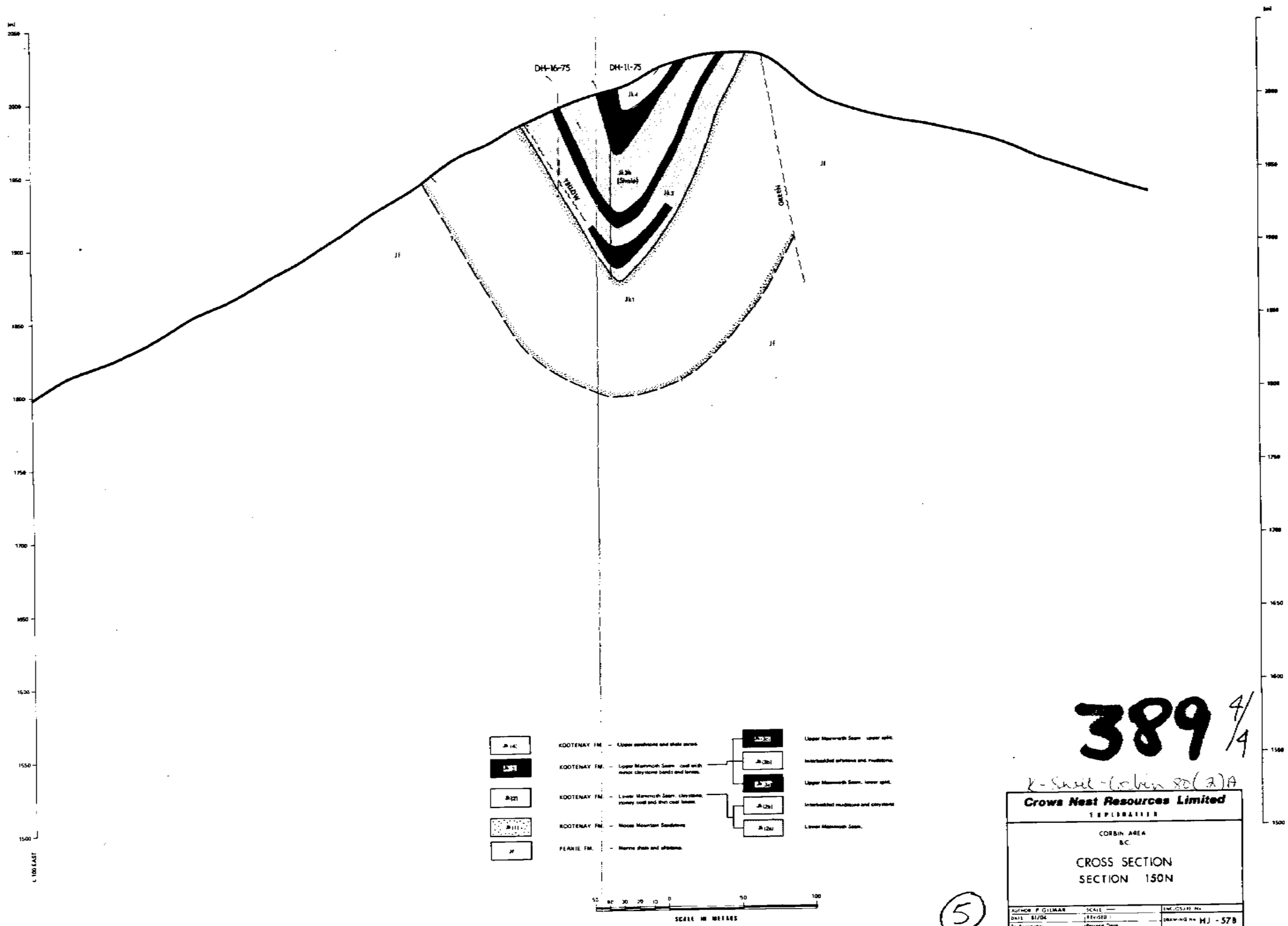
appendix I

SECTION 150N
WEST

SECTION 150N
EAST



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K-Sheet - Corbin 80(2)A

Crows Nest Resources Limited
EXPLORATION

CORBIN AREA
B.C.

CROSS SECTION
SECTION 150N

AUTHOR P. GILMAR	SCALE —	ENCLOSURE No.
DATE 81/04	REVISED :	DRAWING No. HJ - 578
To Accounts	Revised Date	

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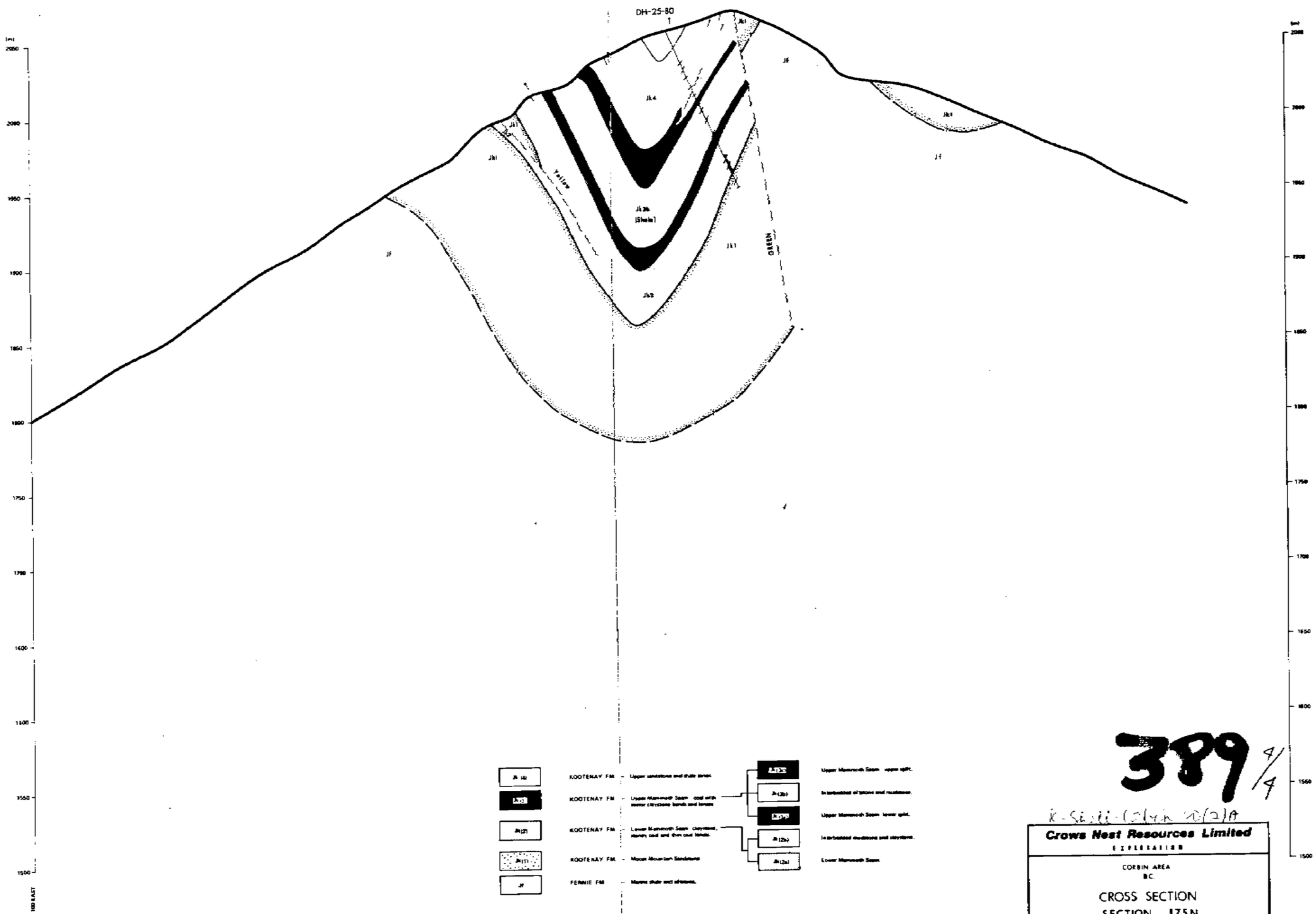
Appendix I

SECTION 175N
WEST

SECTION 175N
EAST



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K-SE-11-(5)(4)(h) 10/2/A

Crows Nest Resources Limited
EXPLORATION

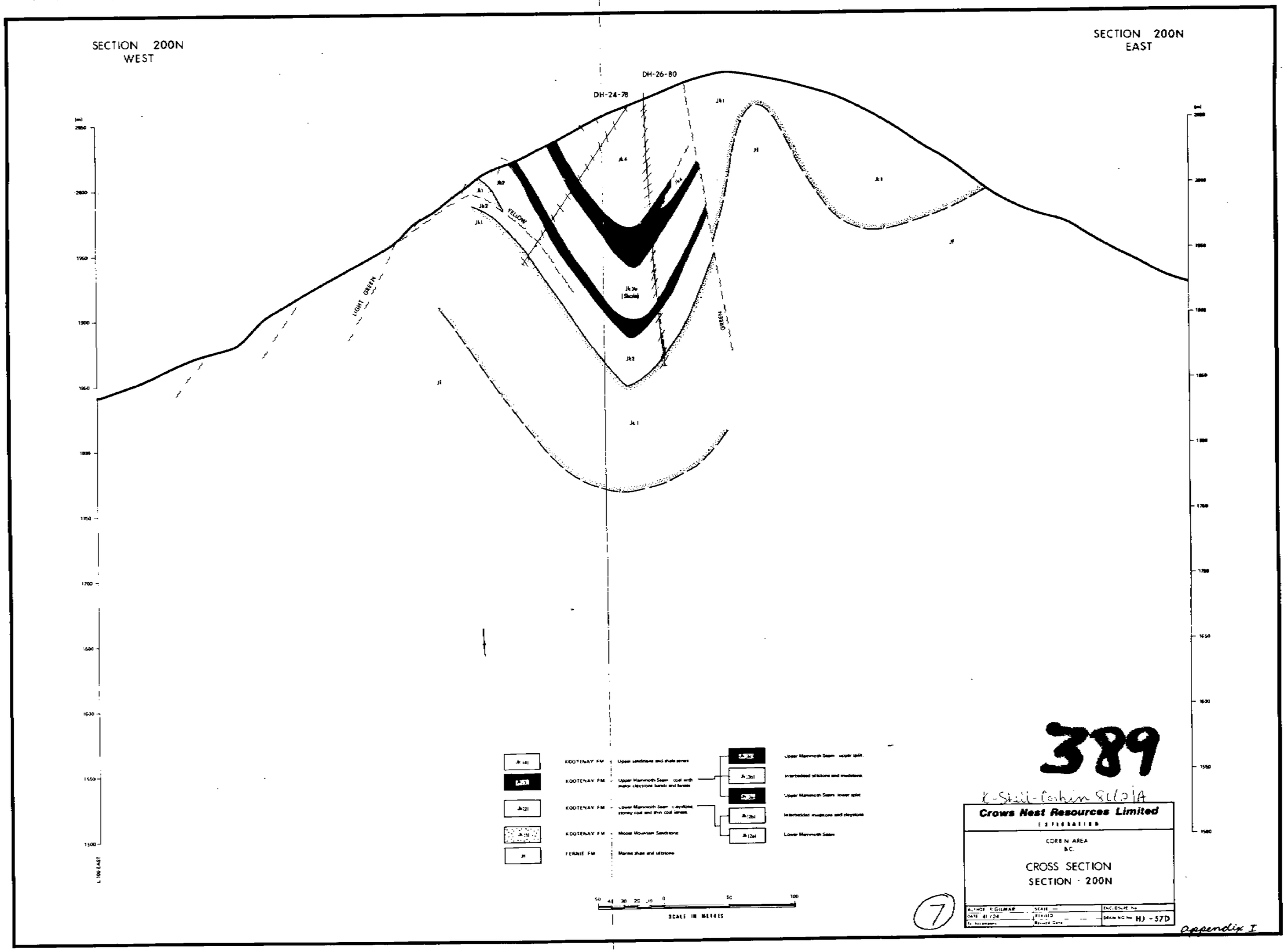
CORBIN AREA
B.C.

CROSS SECTION
SECTION 175N

AUTHOR P. GILMAR	SCALE —	ENCLOSURE No
DATE 81/06	REVISED	DRAWING No HJ - 57C
To Accompany	Revised Date	

(6)

Appendix I


SECTION 200N
WEST
SECTION 200N
EAST
DH-26-80
DH-24-78
LIGHT GREEN
YELLOW
GREEN
L 100 EAST
KOOTENAY FM
Upper sandstone and shale series
Upper Mammoth Seam coal with major claystone bands and lenses
Lower Mammoth Seam claystone, stoney coal and thin coal streak
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
SCALE IN METRES
Crows Nest Resources Limited
EXPLORATION
CORBIN AREA
B.C.
CROSS SECTION
SECTION - 200N
AUTHOR P.GILMAR
DATE 81/04
SCALE —
REVISED
DRAWING No HJ - 57D
ENCLOSURE No
389
K-Still-Corbin 81(2)A
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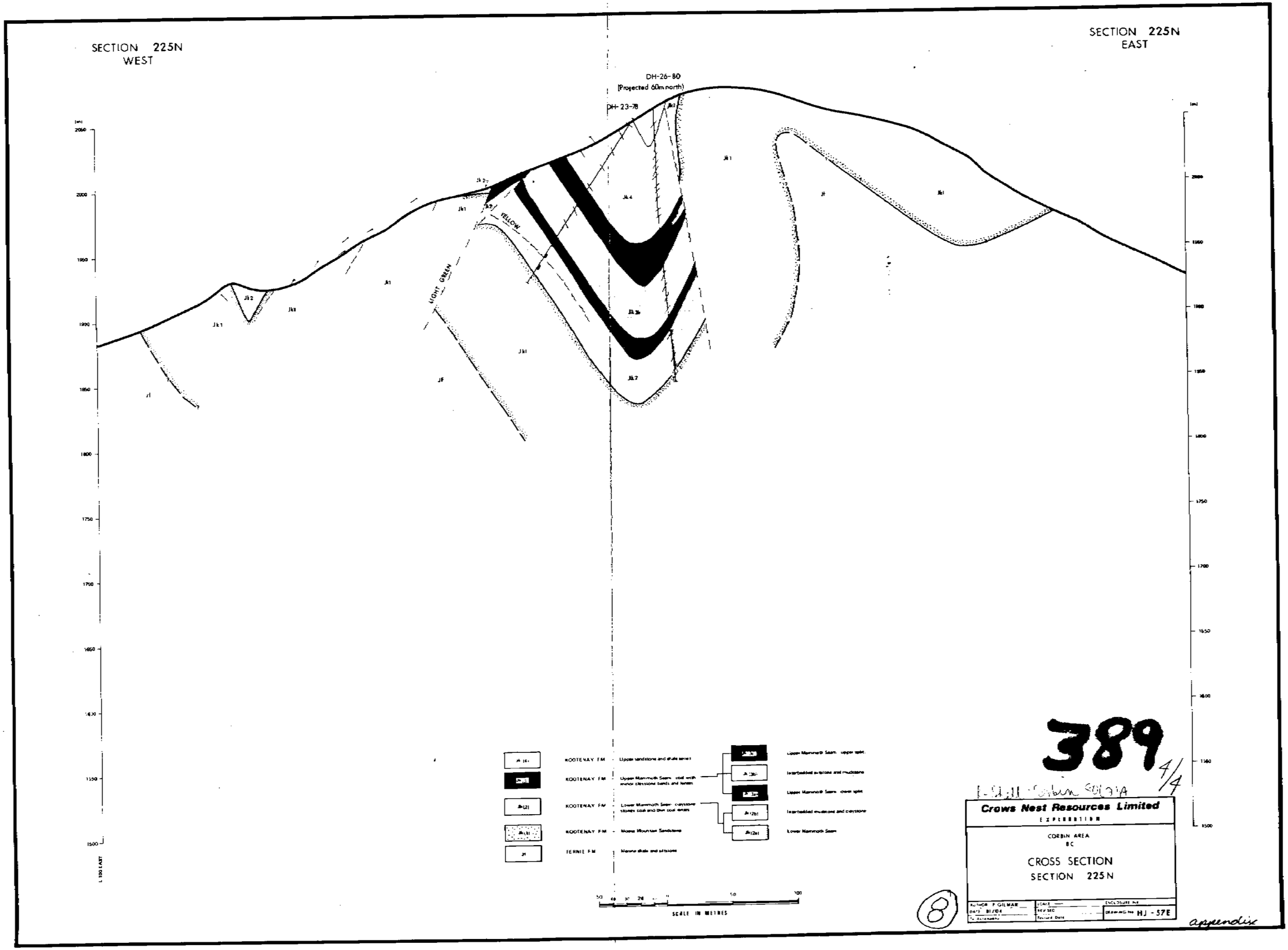
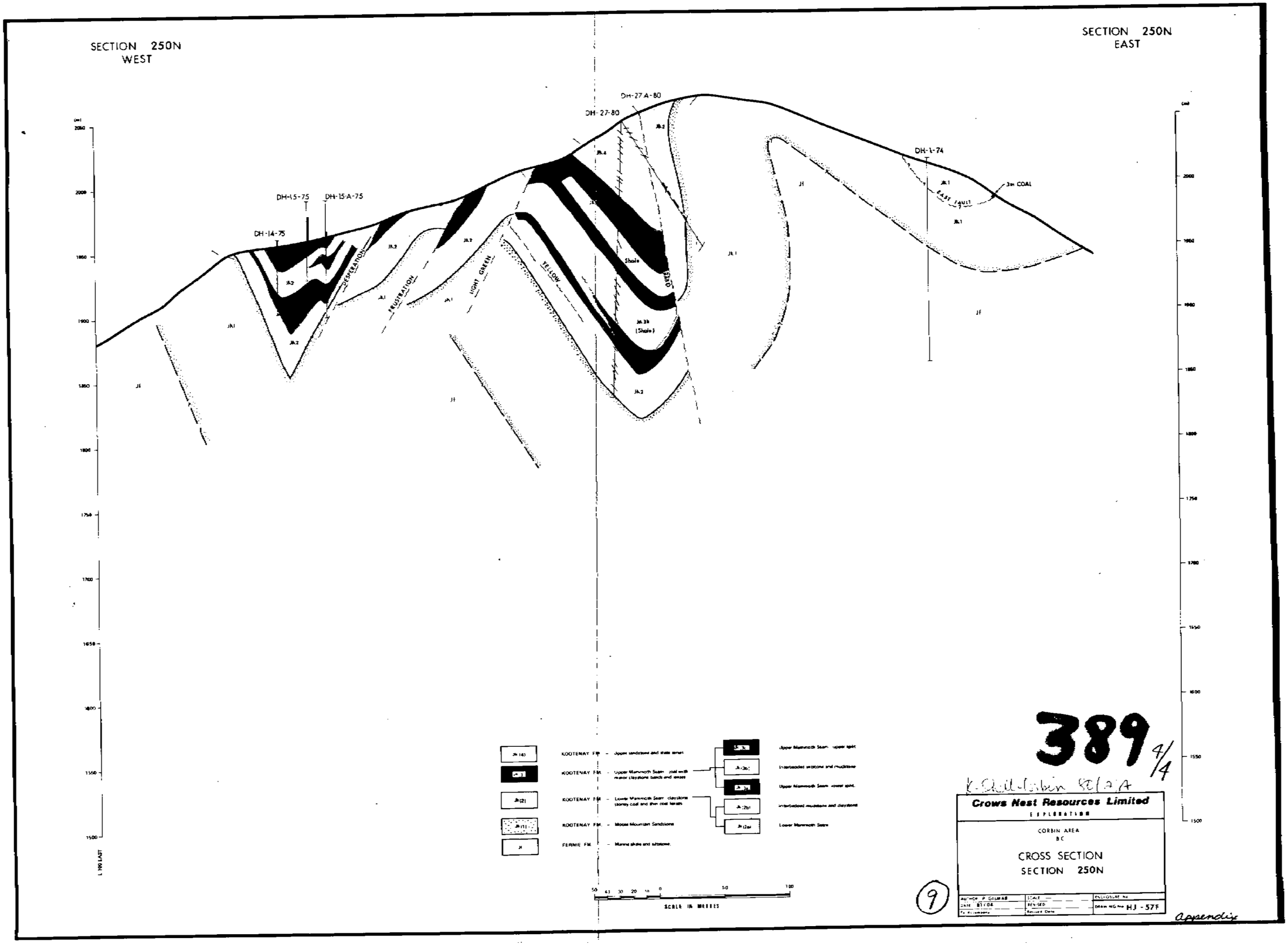
Appendix I


SECTION 225N
WEST
SECTION 225N
EAST
DH-26-80
(Projected 60m north)
DH-23-78
YELLOW
LIGHT GREEN
L 100 EAST
KOOTENAY FM
KOOTENAY FM
KOOTENAY FM
KOOTENAY FM
FERNIE FM
Upper sandstone and shale series
Upper Mammoth Seam coal with minor claystone bands and lenses
Lower Mammoth Seam claystone, stoney coal and thin coal seams
Moose Mountain Sandstone
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
SCALE IN METRES
389 4/4
Crows Nest Resources Limited
EXPLORATION
CORBIN AREA
BC
CROSS SECTION
SECTION 225N
AUTHOR P GILMAR
DATE 81/04
SCALE
REV SEC
Revised Date
ENCLOSURE No
DRAWING No HJ - 57E
8
appendix



389 4/4

K. Chillcabin 82/7A

Crows Nest Resources Limited
EXPLORATION

CORBIN AREA
B.C.

CROSS SECTION
SECTION 250N

AUTHOR P. GILMAR
DATE 81/04
SCALE
REVISED
Revised Date
ENCLOSURE No.
DRAWING No. HJ - 57F

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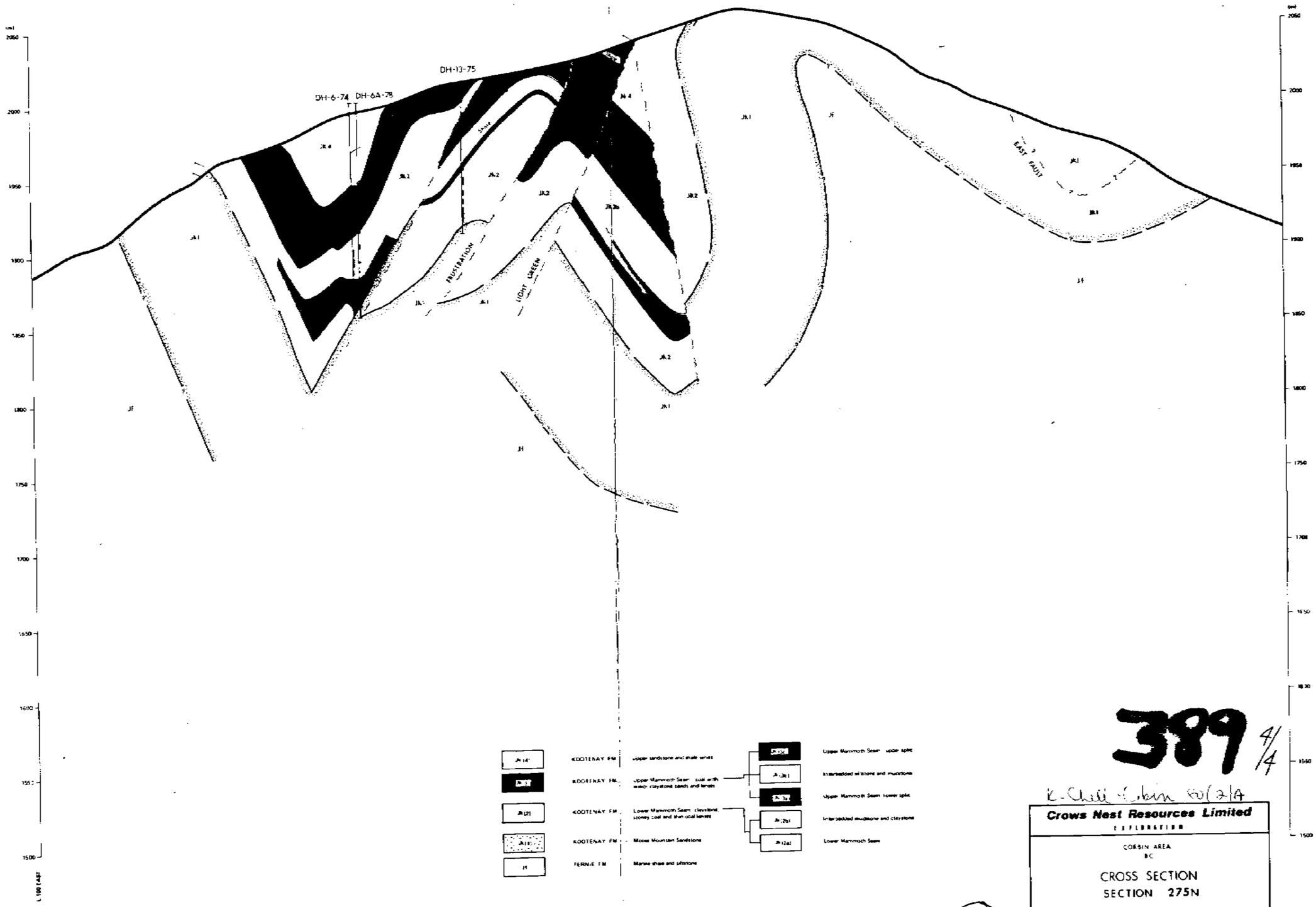
Appendix

SECTION 275N
WEST

SECTION 275N
EAST



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K-Chell-Cabin 60/2/A

Crows Nest Resources Limited
EXPLORATION

CORBIN AREA
BC

CROSS SECTION
SECTION 275N

DRAWN BY P. GERARE	SCALE —	INCLOSURE No.
DATE 81/2/4	REVISED	DRAWING No. HJ - 57G
To Accompany	Revised Date	

(10)

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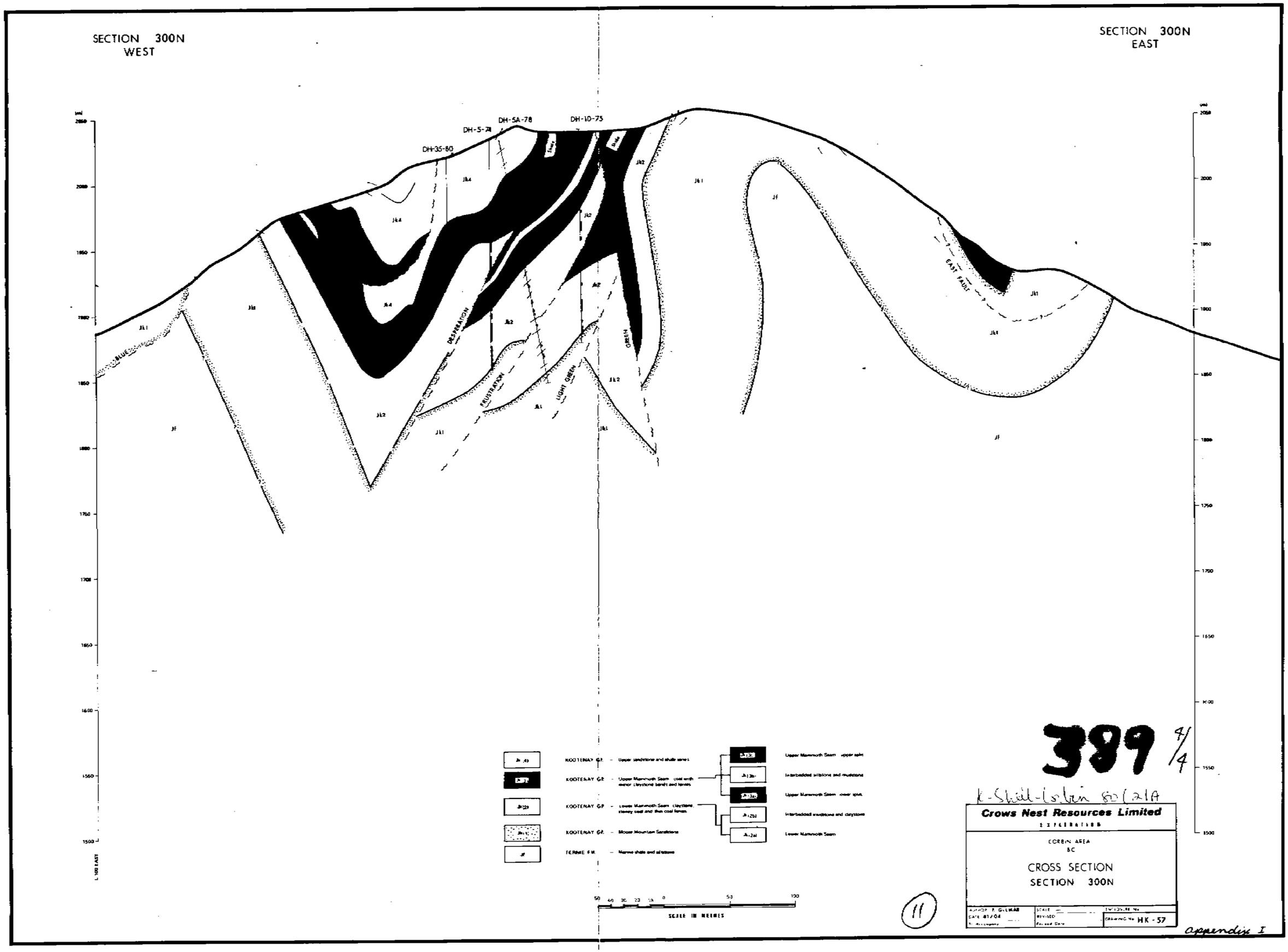
SECTION 300N
WEST
SECTION 300N
EAST
DH-35-80
DH-5-79
DH-5A-78
DH-10-75
BLUE
DEPRESSION
FRUSTRATION
LIGHT GREEN
GREEN
EAST FAULT
KOOTENAY GP. - Upper sandstone and shale series
KOOTENAY GP. - Upper Mammoth Seam coal with minor claystone bands and lenses
KOOTENAY GP. - Lower Mammoth Seam claystone, stoney coal and thin coal lenses
KOOTENAY GP. - 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
SCALE IN METRES
Crows Nest Resources Limited
EXPLORATION
CORBIN AREA
BC
CROSS SECTION
SECTION 300N
DRAWING No HK - 57
389 4/4
K-Shale-Corbin 80C21A
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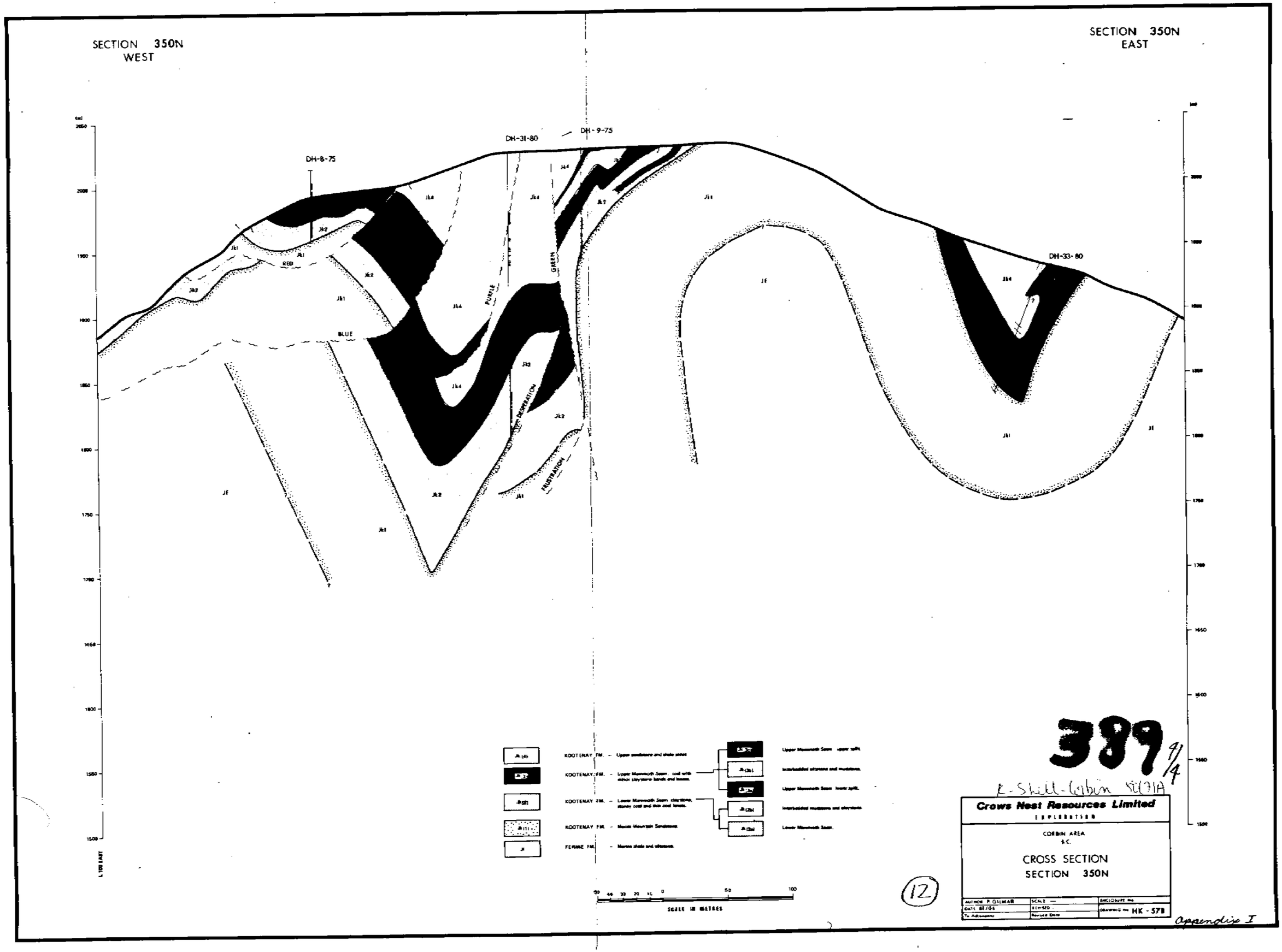
appendix I



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E-Shell-Corbin 5C/31A

SECTION 325N
WEST

SECTION 325N
EAST

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K. Shell - Corbin 82/21A

Crows Nest Resources Limited
EXPLORATION

CORBIN AREA
B.C.

CROSS SECTION
SECTION 325N

AUTHOR R. G. BAKER	SCALE —	ENCLOSURE No.
DATE 81/04	REVISED :	DRAWING No. HK - 57A
To accompany	Revised Date	

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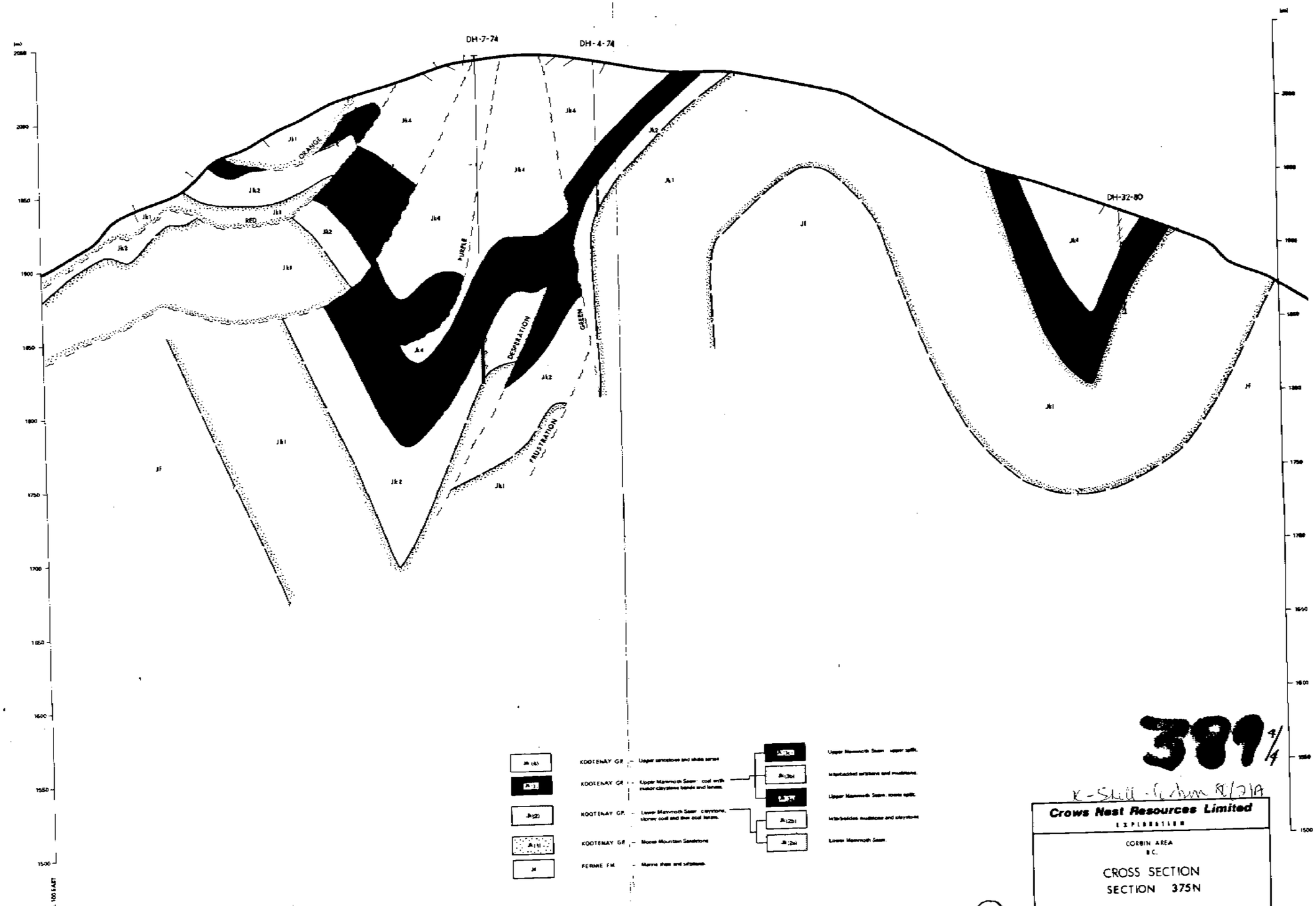
SECTION 375N
WEST

SECTION 375N
EAST



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K-Skill - Graham 81/91A

Crows Nest Resources Limited
EXPLORATION

CORBIN AREA
B.C.

CROSS SECTION
SECTION 375N

AUTHOR P. GILMAR	SCALE —	ENCLOSURE No.
DATE 81/04	REVISED	DRAWING No. HK - 57C
To Accompany	Revised Date	

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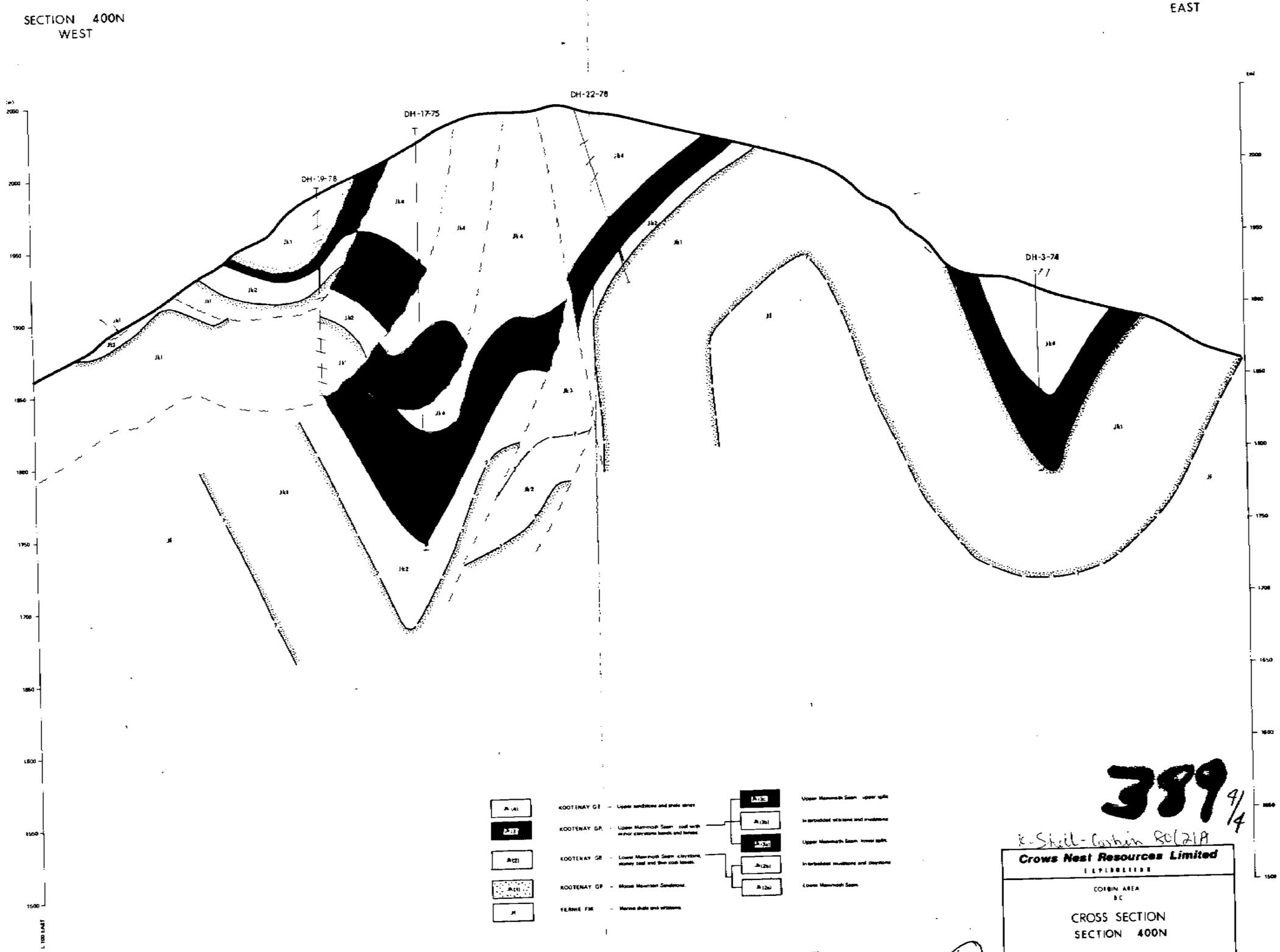

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K-Shell-Corbin 80/21A

Crows Nest Resources Limited

EXPLORATION

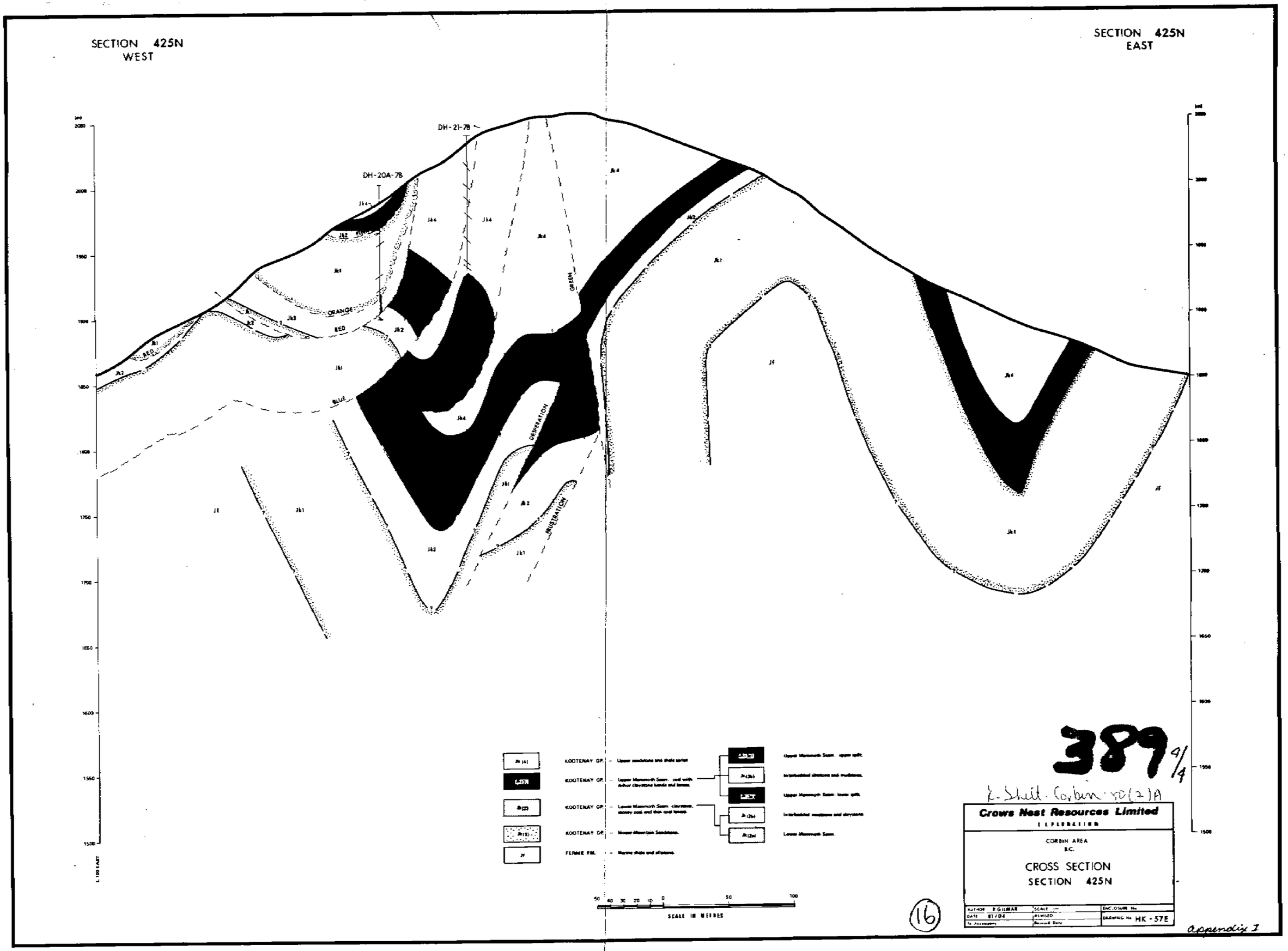
COBBIN AREA
B.C.

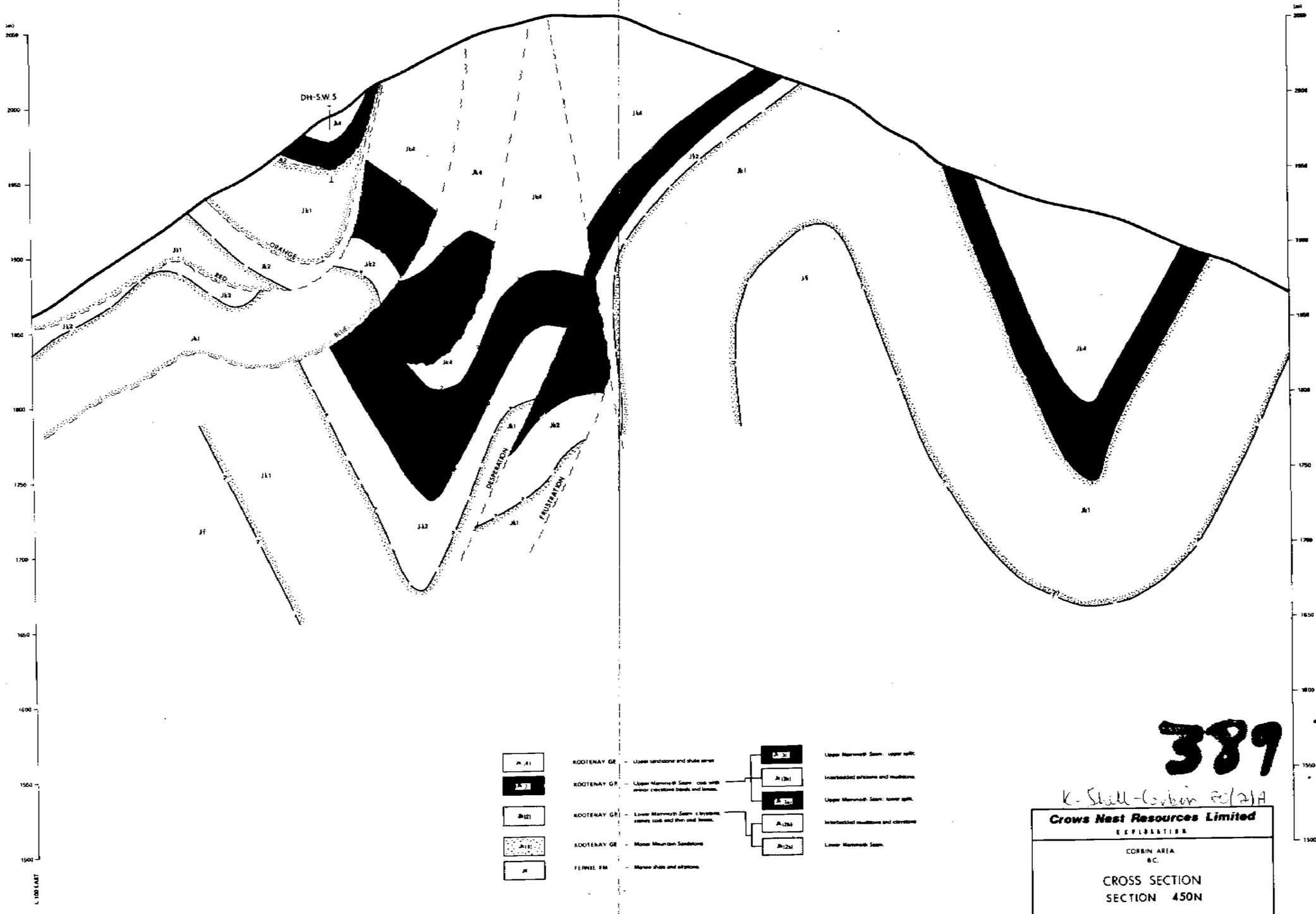
CROSS SECTION
SECTION 400N

AUTHOR P. GILMAR	SCALE —	ENCLOSURE No.
DATE 88/08	REVISED —	DRAWING No. HK-57D

(15)

Appendix I


SECTION 425N
WEST
SECTION 425N
EAST
DH-21-78
DH-20A-78
ORANGE
RED
BLUE
GREEN
DEMPERATION
PRUSTRATION
Jk1
Jk2
Jk3
Jk4
JF
KOOTENAY GP. – Upper sandstone and shale series
KOOTENAY GP. – Upper Mammoth Seam: coal with minor claystone bands and lenses.
KOOTENAY GP. – Lower Mammoth Seam: claystone, stoney coal and thin coal lenses.
KOOTENAY GP. – 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.
SCALE IN METRES
389 4/4
Crows Nest Resources Limited
EXPLORATION
CORBIN AREA
B.C.
CROSS SECTION
SECTION 425N
AUTHOR P.G.GILMAR
DATE 81/04
SCALE —
REVISED
DRAWING No HK-57E
16
appendix I



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K-Shell-Corbin 82/2/A

Crows Nest Resources Limited
EXPLORATION

CORBIN AREA
B.C.

CROSS SECTION
SECTION 450N

AUTHOR P.GEMMAR	SCALE —	ENCLOSURE No.
DATE 81 F 06	REVISED —	DRAWING No. HK - 57 F
Co. Accompany	Revised Date	

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Appendix I