

MOUNT KLAPPAN COAL PROJECT

LOST - FOX AREA

GEOLOGICAL REPORT

1985

APPENDIX I

COAL TRENCH DATA

MEASURED SECTIONS

ROTARY DRILL HOLE DATA



707

GULF CANADA LIMITED

COAL DIVISION

APPENDIX I

Lost-Fox Area

1985 Coal Trench Data CONFIDENTIAL DATA HAS BEEN  
Measured Sections REMOVED

1985 Rotary Drill Hole Data

DATA SOURCE  
SUMMARY

GULF CANADA RESOURCES INC. - COAL DIVISION  
 14/JAN/85 PROJECT DATA SOURCE SUMMARY PAGE 1

DATA SOURCE	LOCATION NORTHING	EASTING	ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
KPNLRTRC85004	6344010.0	507352.0	1645.0	3.5	15.0	115.0	
KPNLRTRC85006	6343785.0	507352.0	1645.0	5.0	60.0	10.0	
KPNLRTRC85007	6344028.0	507352.0	1645.0	2.7	15.0		
KPNLRTRC85008	6343338.0	506395.0	1679.0	4.3	10.0	6.0	
KPNKHTRC85013	6342815.0	511240.0	1733.0	2.9	34.0	60.0	
KPNKHTRC85014	6343415.0	510865.0	1673.0	2.5		20.0	
KPNKHTRC85015	6343655.0	510975.0	1645.0	1.5	28.0	245.0	
KPNKHTRC85016	6343700.0	511000.0	1643.0	1.4	35.0	285.0	
KPNKHTRC85017	6344085.0	511150.0	1585.0	2.9	55.0	348.0	
KPNLRTRC85030	6344297.2	506047.8	1809.2	6.3	0.0	95.0	
KPNLRTRC85031	6344290.4	506046.5	1807.4				
KPNLRTRC85032	6344255.7	506033.4	1798.7	4.9			
KPNLRTRC85033	6344263.0	506015.5	1798.5	4.9			
KPNLRTRC85034	6344267.5	505988.5	1796.1	4.9			
KPNLRTRC85035	6344321.0	505987.0	1807.6	4.9			
KPNLRTRC85036	6344312.1	505947.5	1802.1				

GULF CANADA RESOURCES INC. - COAL DIVISION  
 14/JAN/86 PROJECT DATA SOURCE SUMMARY PAGE 2

DATA SOURCE	LOCATION		ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
	NORTHING	EASTING					
KPNLRTRC85037	6344296.0	505892.1	1797.7	5.5			
KPNLRTRC85038	6344282.0	505892.3	1793.7	5.3			
KPNLRTRC85039	6344273.8	505932.2	1792.7	5.1			
KPNLRTRC85040	6344317.9	505899.0	1802.3	4.8			
KPNLRTRC85041	6344289.0	505843.6	1797.2				
KPNLRTRC85042	6344261.5	506019.0	1799.1				
KPNLRTRC85043	6344317.7	505799.0	1805.8	4.8			
KPNLRTRC85044	6344315.5	505819.8	1804.1	4.8			
KPNLRTRC85045	6344307.8	505853.6	1799.5	5.0			
KPNLRTRC85046	6344302.8	505875.4	1798.2	4.9			
KPNLRTRC85047	6344319.9	505778.5	1808.6	4.2			
KPNLRTRC85048	6344306.0	505862.1	1798.5	4.3			
KPNLRTRC85049	6344294.7	505807.8	1799.7	4.9			
KPNLRTRC85050	6344295.8	505751.6	1808.7	5.1			
KPNLRTRC85051	6344318.3	505791.5	1805.8	3.4			
KPNLRTRC85052	6344312.0	505834.4	1801.0				
KPNLRTRC85053	6344311.5	505704.0	1818.7				

SIMPLE SAMPLE  
SUMMARY

12/NOV/85 GULF CANADA RESOURCES INC. - COAL DIVISION  
 SIMPLE SAMPLE SUMMARY PAGE 1  
 TRUE THICKNESS  
 KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	ROCK	MISSING COAL	ROCK	TOTAL COAL	ROCK
TRC85004		5955	1.56	3.49	100.00	1.710	0.220			1.71	0.22
TRC85006		5954	0.40	3.82	100.00	2.100	1.320			2.10	1.32
TRC85007		5956	0.28	2.12	100.00	1.390	0.450			1.39	0.45
TRC85008											
TRC85013		5952	0.45	2.34	100.00	1.430	0.460			1.43	0.46
TRC85014		1	0.35	2.27	100.00	0.630	1.290			0.63	1.29
TRC85015		1	0.61	0.92	100.00	0.310				0.31	0.00
TRC85016		1	0.30	1.22	100.00	0.870	0.050			0.87	0.05
TRC85017		5951	1.00	2.93	100.00	1.930				1.93	0.00

13/JAN/86

GULF CANADA RESOURCES INC. - COAL DIVISION  
 SIMPLE SAMPLE SUMMARY  
 TRUE THICKNESS  
 KLAPPAN PROJECT

PAGE 2

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	ROCK	MISSING COAL	ROCK	TOTAL COAL - ROCK
TRC85030	I	7601	0.00	5.76	100.00	5.192	0.399			5.192- 0.399
TRC85032	I	7603	0.00	4.81	100.00	4.700	0.110			4.700- 0.110
TRC85033	I	7604	0.00	4.90	100.00	4.750	0.150			4.750- 0.150
TRC85034	I	7605	0.00	5.10	100.00	5.000	0.100			5.000- 0.100
TRC85035	I	7606	0.00	5.17	80.66	3.830	0.340	1.000		4.830- 0.340
TRC85037	I	7608	0.00	5.53	100.00	5.260	0.270			5.260- 0.270
TRC85038	I	7609	0.15	5.40	100.00	4.940	0.310			4.940- 0.310
TRC85039	I	7610	0.00	5.10	100.00	4.880	0.220			4.880- 0.220
TRC85040	I	7611	0.00	4.75	100.00	4.470	0.280			4.470- 0.280
TRC85041	I	7612	1.45	6.94	100.00	4.850	0.640			4.850- 0.640
TRC85042	I	7613	0.25	5.73	100.00	4.890	0.590			4.890- 0.590
TRC85043	I	7614	0.00	4.53	100.00	4.270	0.260			4.270- 0.260
TRC85044	I	7615	0.00	4.78	100.00	4.480	0.300			4.480- 0.300
TRC85045	I	7616	0.00	4.63	100.00	4.320	0.310			4.320- 0.310



13/JAN/86

GULF CANADA RESOURCES INC. - COAL DIVISION  
 SIMPLE SAMPLE SUMMARY  
 TRUE THICKNESS  
 KLAPPAN PROJECT

PAGE 3

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED		MISSING		TOTAL	
						COAL	ROCK	COAL	ROCK	COAL	ROCK
TRC85046	I	7617	0.00	4.60	100.00	4.290	0.310			4.290-	0.310
TRC85047	I	7618	0.00	4.23	100.00	4.060	0.170			4.060-	0.170
TRC85048	I	7632	0.00	1.39	100.00	1.250	0.140			1.250-	0.140
	I	7633	1.39	2.39	100.00	0.970	0.030			0.970-	0.030
	I	7634	2.39	4.25	100.00	1.800	0.060			1.800-	0.060
TRC85049	I	7635	0.00	1.91	100.00	1.740	0.170			1.740-	0.170
	I	7636	1.91	3.04	100.00	1.080	0.050			1.080-	0.050
	I	7637	3.04	4.85	100.00	1.810				1.810-	0.000
TRC85050	I	7638	0.25	2.44	100.00	1.950	0.240			1.950-	0.240
	I	7639	2.44	2.71	100.00	0.190	0.080			0.190-	0.080
	I	7640	2.71	5.21	100.00	2.500				2.500-	0.000
TRC85051	I	7641	0.00	1.28	100.00	1.130	0.150			1.130-	0.150
	I	7642	1.28	3.38	100.00	2.100				2.100-	0.000
TRC85052	I	7643	0.00	1.51	100.00	1.270	0.240			1.270-	0.240
	I	7644	1.51	2.73	100.00	1.160	0.060			1.160-	0.060
	I	7645	2.73	4.80	100.00	2.070				2.070-	0.000

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRTRC85004

DATE - 10/31/85

- HISTORY -

START DATE - 07/26/85

END DATE - 07/26/85

CONTRACTOR -

GEOLOGIST - MACLEOD

OPERATOR - GULF CANADA

SURVEYOR -

REMARKS - ALONG STRIKE WITH TRC85029; FLOOR NOT REACHED

- LOCATION -

PROVINCE - BC

ELEVATION - 1645.00

ZONE - 9

NORTHING - 6344010.00

EASTING - 507352.00

LICENCE/LEASE NUMBER - 7151

LATITUDE - 571428

LONGITUDE - 1285241

- ORIENTATION -

LENGTH - 3.49

INCLINATION - 15.0

AZIMUTH - 115.0

SIZE WIDTH - 0.9

SIZE HEIGHT - 2.0

ROOF STRIKE - 216

ROOF DIP - 16

ROOF DIR - W

FLOOR STRIKE - 0

FLOOR DIP - 0

FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

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85/11/07

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	0.00	1.26	1.26			MUDSTONE	BLK MINOR DISCONTINUOUS FE STAINED BANDS; M MINOR ORANGE STAINED COAL STRINGERS; SMC ARED MUDSTONE NEAR BASE
* 90	1.26	1.56	0.30			MUDSTONE	CARB. BLK SHEARED; MINOR FE STAINED BANDS; QTZ ST RINGERS AND COAL BANDS (DULL)
* 90	1.56	1.80	0.24	05955		COAL	C-3. BLK THIN MUDSTONE BANDS; COAL IS FE STAINED
* 90	1.80	2.01	0.21	05955		COAL	C-3. BLK MODERATELY WELL CLEATED; FE STAINED
* 90	2.01	2.19	0.18	05955		COAL	C-4. BLK SOFT; WEATHERED.
* 90	2.19	2.23	0.04	05955		MUDSTONE	M. GY SOFT; UNCONSOLIDATED
* 90	2.23	2.50	0.27	05955		COAL	C-5. BLK MODERATELY WEATHERED;
* 90	2.50	2.53	0.03	05955		MUDSTONE	DK. GY WELL CONSOLIDATED; C-4 COAL STRINGERS.
* 90	2.53	2.61	0.08	05955		COAL	C-6. BLK SOFT; WEATHERED.

\* DENOTES MEASURED BCA

85/11/07

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	2.61	2.66	0.05	05955		MUDSTONE	DK. GY SLIGHTLY CARBONACEOUS
* 90	2.66	2.84	0.18	05955		COAL	C-6. BLK
* 90	2.84	2.94	0.10	05955		MUDSTONE	DK. GY SOFT; UNCONSOLIDATED
* 90	2.94	3.49	0.55	05955		COAL	C-6. BLK HIGHLY WEATHERED; FLOOR NOT REACHED

\* DENOTES MEASURED BCA  
NEWPAGE

----- GULF CANADA RESOURCES INC. -----

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRTRC85006

DATE - 01/10/86

- HISTORY -

START DATE - 07/26/85

END DATE - 07/26/85

CONTRACTOR -

GEOLOGIST - MACLEOD

OPERATOR - GULF CANADA

SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC

ELEVATION - 1645.00

LICENCE/LEASE NUMBER - 7151

ZONE - 9

NORTHING - 6343785.00

EASTING - 507352.00

LATITUDE - 571420

LONGITUDE - 1285242

- ORIENTATION -

LENGTH - 5.00

INCLINATION - 60.0

AZIMUTH - 10.0

SIZE WIDTH - 0.7

SIZE HEIGHT - 0.9

ROOF STRIKE - 245

ROOF DIP - 25

ROOF DIR - N

FLOOR STRIKE - 0

FLOOR DIP - 0

FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

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85/11/07

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
*	90	0.00	0.20	0.20		MUDSTONE	M. BN MINOR FE STAIN; WELL CONSOLIDATED
*	90	0.20	0.40	0.20		MUDSTONE	M. GY MINOR FE STAIN
*	90	0.40	0.45	0.05	05954	COAL	C-3. BLK ABUNDANT FE STAIN
*	90	0.45	0.52	0.07	05954	COAL	C-6. BLK FE STAINED; WEATHERED.
*	90	0.52	0.87	0.35	05954	COAL	C-3 THIN QTZ BANDS; MODERATE FE STAIN TOMAR DS TOP; MODERATELY WEATHERED.
*	90	0.87	0.92	0.05	05954	MUDSTONE	DK. GY SOFT; UNCONSOLIDATED; SLIGHTLY CARBONAC EOUS
*	90	0.92	1.72	0.80	05954	MUDSTONE	CARB. BLK THIN COAL BANDS .5CM; HIGHLY SHEARED; M INOR QTZ LAMINAE
*	90	1.72	1.88	0.16	05954	COAL	C-4. BLK QTZ VEINS; MINOR FE STAIN
*	90	1.88	2.18	0.30	05954	COAL	C-3. BLK SOFT

\* DENOTES MEASURED BCA

85/11/07

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
*	90	2.18	2.36	0.18	05954	COAL	C-2. BLK WELL CONSOLIDATED; MINOR QTZ; WELL CLEA TED; MINOR FE STAIN
*	90	2.36	2.83	0.47	05954	MUDSTONE	BLK FINE COAL LAMINAE; SOFT; SHEARED
*	90	2.83	3.03	0.20	05954	COAL	C-2. BLK QTZ LAMINAE; WEATHERED.
*	90	3.03	3.23	0.20	05954	COAL	C-6. BLK QTZ LAMINAE; MINOR BANDS OF VITRAIN
*	90	3.23	3.39	0.16	05954	COAL	C-3. BLK QTZ LAMINAE
*	90	3.39	3.63	0.24	05954	COAL	C-6
*	90	3.63	3.72	0.09	05954	COAL	C-2. BLK MINOR FE STAIN; WELL CONSOLIDATED
*	90	3.72	3.82	0.10	05954	COAL	C-3. BLK MINOR QUARTZ; NO FLOOR REACHED.

\* DENOTES MEASURED BCA  
NEWPAGEP  
C  
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4  
0  
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1

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRTRC85007

DATE - 10/31/85

- HISTORY -

START DATE - 07/26/85

END DATE - 07/26/85

CONTRACTOR -

GEOLOGIST - MACLEOD

OPERATOR - GULF CANADA

SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC  
ELEVATION - 1645.00

ZONE - 9  
NORTHING - 6344028.00  
EASTING - 507352.00

LICENCE/LEASE NUMBER - 7151

LATITUDE - 571428  
LONGITUDE - 1285241

- ORIENTATION -

LENGTH - 2.66

INCLINATION - 15.0

AZIMUTH - 0.0

SIZE WIDTH - 0.3

SIZE HEIGHT - 0.2

ROOF STRIKE - 295

ROOF DIP - 83

ROOF DIR - S

FLOOR STRIKE - 285

FLOOR DIP - 78

FLOOR DIR - S

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

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85/11/07

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPM BLOCK: LR DATA SOURCE: TRC85007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	0.00	0.20	0.20			MUDSTONE	DK. GY FLOOR THINLY INTERLAMINATED WITH LT GREY FG SANDSTONE; WEATHERS TAN-YELLOW; CONTAINS BIVALVES.
* 90	0.20	0.28	0.08			MUDSTONE	ORNG HIGHLY FE STAINED; SOFT; POORLY CONSOLIDATED
* 90	0.28	0.48	0.20	05956		COAL	C-3. BLK HIGHLY FE STAINED; WELL CLEATED; PARTIALLY WEATHERED
* 90	0.48	0.49	0.01	05956		MUDSTONE	DK. GY HIGHLY FE STAINED
* 90	0.49	0.97	0.48	05956		COAL	C-3. BLK FE STAINING INCREASES TOWARDS ROOF; WELL CLEATED; MINOR THIN DARK MUDSTONE LAMINAE; WEATHERED
* 90	0.97	1.11	0.14	05956		MUDSTONE	CARB. DK. GY SOFT; HIGHLY WEATHERED; MINOR FE STAIN; PARTIALLY SHEARED
* 90	1.11	1.16	0.05	05956		QUARTZ	MINOR FE STAINING
* 90	1.16	1.41	0.25	05956		MUDSTONE	CARB. BLK SOFT; MINOR COAL LAMINAE AND QTZ

\* DENOTES MEASURED BCA

85/11/07

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPM BLOCK: LR DATA SOURCE: TRC85007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	1.41	1.43	0.02	05956		COAL	C-3. BLK WELL CONSOLIDATED
* 90	1.43	1.83	0.40	05956		COAL	C-5. BLK HIGHLY SHEARED; MODERATELY WEATHERED; VERY MINOR FE STAINING.
* 90	1.83	1.86	0.03	05956		COAL	C-6. BLK HIGHLY FE STAINED; HIGHLY SHEARED; ABUNDANT CONCAVE SLIP SURFACES.
* 90	1.86	1.96	0.10	05956		COAL	BLK HIGHLY SHEARED; INTERLAMINATED WITH BLACK CARBONACEOUS MUDSTONE
* 90	1.96	2.12	0.16	05956		COAL	C-2. BLK MINOR THIN BANDS OF (1CM THICK) BLACK CARBONACEOUS MUDSTONE
* 90	2.12	2.21	0.09			MUDSTONE	CARB. DK. GY WITH THIN (<.5CM) VITRINITE BANDS
* 90	2.21	2.66	0.45			MUDSTONE	CARB. H. GY ROOF SOFT; FE STAINED; WEATHERS LT GREY -ORANGE

\* DENOTES MEASURED BCA  
NEWPAGE

----- GULF CANADA RESOURCES INC. -----

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRTRC85008

DATE - 01/10/86

- HISTORY -

START DATE - 07/24/85

END DATE - 07/24/85

CONTRACTOR -

GEOLOGIST - MACLEOD

OPERATOR - GULF CANADA

SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC

ELEVATION - 1679.00

LICENCE/LEASE NUMBER - 7151

ZONE - 9

NORTHING - 6343338.00

EASTING - 506395.00

LATITUDE - 571406

LONGITUDE - 1285339

- ORIENTATION -

LENGTH - 4.30

INCLINATION - 10.0

AZIMUTH - 6.0

SIZE WIDTH - 0.1

SIZE HEIGHT - 1.0

ROOF STRIKE - 302

ROOF DIP - 76

ROOF DIR - N

FLOOR STRIKE - 304

FLOOR DIP - 82

FLOOR DIR - N

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

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85/11/07

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
• 90	0.00	1.00	1.00			SILTSTONE	M. BN. LAM
• 90	1.00	2.04	1.04	00001		MUDSTONE	CARB. BLK POORLY CONSOLIDATED; FE STAINED; CONTORTED BEDDING
• 90	2.04	2.08	0.04	00001		MUDSTONE	LT. BN SOFT UNCONSOLIDATED
• 90	2.08	2.18	0.10	00001		MUDSTONE	BLK. THNB MEDIUM GREY CLAY BEDS
• 90	2.18	2.25	0.07	00001		SILTSTONE	LT. BN. THNB
• 90	2.25	2.33	0.08	00001		MUDSTONE	DK. GY MINOR ORANGE WEATHERED LAMINAE MUDSTONE
• 90	2.33	2.71	0.38	00001		MUDSTONE	M. GY WELL CONSOLIDATED; MINOR FE STAINING
• 90	2.71	2.73	0.02	00001		COAL	C-3. BLK FE STAINED; WEATHERED.
• 90	2.73	3.13	0.40	00001		MUDSTONE	CARB. BLK THIN COAL LAMINAE; FE STAINED

• DENOTES MEASURED BCA

85/11/07

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
• 90	3.13	3.49	0.36	00001		MUDSTONE	M. GY. LAM FE STAINED
• 90	3.49	3.54	0.05	00001		MUDSTONE	CARB. BLK FE STAINED
• 90	3.54	3.65	0.11	00001		COAL	C-6. BLK THIN BAND (2M) OF C-2 COAL; DISCONTINUOUS QTZ LAMINAE; MINOR FE STAINED MUDSTONE BANDS
• 90	3.65	3.75	0.10	00001		MUDSTONE	M. GY
• 90	3.75	3.78	0.03	00001		COAL	C-2 FE STAINED
• 90	3.78	3.80	0.02	00001		MUDSTONE	M. BN
• 90	3.80	3.84	0.04	00001		COAL	C-3. BLK MINOR FE STAINED; POORLY CONSOLIDATED
• 90	3.84	4.04	0.20	00001		MUDSTONE	CARB. M. BN POOR CONSOLIDATED; COAL STRINGERS; SOME GREY BANDING

• DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: TRCB5008

DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90 4.04	4.06	0.02	00001		COAL	C-3, BLK FE STAINED; POORLY CONSOLIDATED
* 90 4.06	4.30	0.24	00001		MUDSTONE	CARB. M. BN GREY BANDING; ABUNDANT NILSSONIA tenuis and PTEROPHYLLUM rectangulare

\* DENOTES MEASURED BCA  
MEHPAGE

===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNKHTRC85013

DATE - 10/31/85

- HISTORY -

START DATE - 07/09/85

END DATE - 07/09/85

CONTRACTOR -

GEOLOGIST - MACLEOD

OPERATOR - GULF CANADA

SURVEYOR -

REMARKS - ROOF ATTITUDE IS QUESTIONABLE - MAY BE SLUMPED

- LOCATION -

PROVINCE - BC

ELEVATION - 1733.00

LICENCE/LEASE NUMBER - 7138

ZONE - 9

NORTHING - 6342815.00

EASTING - 511240.00

LATITUDE - 571349

LONGITUDE - 1284850

- ORIENTATION -

LENGTH - 2.85

SIZE WIDTH - 0.6

SIZE HEIGHT - 1.0

INCLINATION - 34.0

AZIMUTH - 60.0

ROOF STRIKE - 314

ROOF DIP - 29

ROOF DIR - S

FLOOR STRIKE - 200

FLOOR DIP - 46

FLOOR DIR - W

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

=====





85/11/07

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: KH DATA SOURCE: TRCB5013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	0.00	0.45	0.45			MUDSTONE	M.GY. THMB PARTIALLY OBSCURED BY SCREE; MINIMUM THICKNESS.
* 90	0.45	0.62	0.17	05952		COAL	C-6.BLK WEATHERED.
* 90	0.62	0.74	0.12	05952		MUDSTONE	BN. THMB HARD; WELL CONSOLIDATED; IRON STAINED
* 90	0.74	0.89	0.15	05952		MUDSTONE	CARB. BLK POORLY CONSOLIDATED
* 90	0.89	1.13	0.24	05952		COAL	C-6.BLK WEATHERED.
* 90	1.13	1.20	0.07	05952		MUDSTONE	LT. BN POORLY CONSOLIDATED
* 90	1.20	1.50	0.30	05952		COAL	C-6.BLK WEATHERED.
* 90	1.50	1.57	0.07	05952		MUDSTONE	LT. BN POORLY CONSOLIDATED
* 90	1.57	1.75	0.18	05952		COAL	C-6.BLK SOFT; WEATHERED.

\* DEMOTES MEASURED BCA

85/11/07

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: KH DATA SOURCE: TRCB5013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	1.75	1.80	0.05	05952		MUDSTONE	DK. BN SOFT
* 90	1.80	1.86	0.06	05952		COAL	C-6.BLK SOFT; WEATHERED.
* 90	1.86	1.90	0.04	05952		COAL	C-6.BLK WITH MINOR INTERLAMINAE OF LIGHT BROWN MUDSTONE
* 90	1.90	2.10	0.20	05952		COAL	C-6.BLK
* 90	2.10	2.34	0.24	05952		COAL	C-6.BLK WEATHERED.
* 90	2.34	2.54	0.20			SANDSTONE	MG. MOD. LT. BN IRON STAINED

\* DEMOTES MEASURED BCA  
NEWPAGE

GCRI COAL DIVISION HEAD PROJ KPN BLK KH DS TRC85013  
=====

SAMPLE ID 05952 DATA TYPE (REAL,BORO,AVER,CALC) REAL  
SPLIT SAMPLE ID HD1 DATE ANALYSED 15/10/85  
ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD  
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

TOP SIZE (MM)	----*--	TOTAL SULPHUR %	0.44
SURFACE MOISTURE %	---*---	PHOSPHOROUS %	---*---
TOTAL MOISTURE %	28.52	CHLORINE (PPM)	-----
EQUILIBRIUM MOISTURE %	---*---	SPECIFIC GRAVITY	---*---
RESIDUAL MOISTURE %	5.52	FSI	---*---
ASH %	18.88	HGI	---*---
VOLATILE MATTER %	25.68	CO2 %	---*---
FIXED CARBON %	49.92		

GROSS CALORIFIC VALUE (MJ/KG) 20.52  
NET CALORIFIC VALUE (MJ/KG) ---\*---

===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNKHTRC85014

DATE - 10/31/85

- HISTORY -

START DATE - 07/13/85

END DATE - 07/13/85

CONTRACTOR -

GEOLOGIST - MACLEOD

OPERATOR - GULF CANADA

SURVEYOR -

REMARKS - FLOOR NOT OBTAINABLE DUE TO EXCESSIVE OVERBURDEN

- LOCATION -

PROVINCE - BC

ELEVATION - 1673.00

ZONE - 9

NORTHING - 6343415.00

EASTING - 510865.00

LICENCE/LEASE NUMBER - 7143

LATITUDE - 571408

LONGITUDE - 1284912

- ORIENTATION -

LENGTH - 2.46

INCLINATION - 0.0

AZIMUTH - 20.0

SIZE WIDTH - 0.4

SIZE HEIGHT - 0.6

ROOF STRIKE - 318

ROOF DIP - 44

ROOF DIR - S

FLOOR STRIKE - 0

FLOOR DIP - 0

FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

=====



85/11/07

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: KH DATA SOURCE: TRC85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	0.00	0.35	0.35			SANDSTONE	M.G. M. GY HIGHLY FRACTURED; ORANGE AND GREY WEATHERING WITH LARGE ORANGE MODULES OVERLAIN BY MEDIUM GRAINED SANDSTONE - WEATHERS ORANGE GREY AND BROWN
* 90	0.35	0.42	0.07	00001		MUDSTONE	CARB. BLK. LAM WITH COAL LAMINAE; BEDDING HIGHLY CONTORTED; SOFT; WEATHERED
* 90	0.42	0.48	0.06	00001		COAL	C-4. BLK FE STAINED; HARD; WELL CONSOLIDATED
* 90	0.48	0.56	0.08	00001		COAL	C-6. BLK ABUNDANT THIN MUDSTONE LAMINAE <.25CM
* 90	0.56	0.61	0.05	00001		COAL	C-5. BLK WELL CLEATED FE STAINED; MODERATE TO WELL CONSOLIDATED
* 90	0.61	0.63	0.02	00001		MUDSTONE	BN SOFT; UNCONSOLIDATED
* 90	0.63	0.83	0.20	00001		MUDSTONE	CARB. BLK ABUNDANT THIN COAL LAMINAE
* 90	0.83	0.92	0.09	00001		COAL	C-4 YELLOW STAINED; WELL CLEATED

\* DENOTES MEASURED BCA

85/11/07

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: KH DATA SOURCE: TRC85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	0.92	1.02	0.10	00001		COAL	C-6. BLK WEATHERED; THIN MUDSTONE LENSES.
* 90	1.02	1.09	0.07	00001		COAL	C-6. BLK WEATHERED.
* 90	1.09	1.18	0.09	00001		MUDSTONE	BLK SOFT; UNCONSOLIDATED
* 90	1.18	1.22	0.04	00001		MUDSTONE	M. GY VERY FINE COAL LAMINAE <.25CM
* 90	1.22	1.38	0.16	00001		COAL	C-6. BLK WEATHERED; SOFT; MINOR CARB MUDSTONE.
* 90	1.38	1.45	0.07	00001		MUDSTONE	CARB. BLK SOFT; UNCONSOLIDATED
* 90	1.45	1.47	0.02	00001		COAL	C-5 YELLOW STAINED; HIGHLY FRACTURED
* 90	1.47	2.27	0.80	00001		MUDSTONE	CARB. BLK COAL LAMINAE; SOFT; FE STAINED
* 90	2.27	2.35	0.08			MUDSTONE	BN VERY SOFT; CONSOLIDATED; 1CM QUARTZ VEIN

\* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: KH DATA SOURCE: YRCB5014

ACA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	2.35	2.37	0.02			COAL	BLK WEATHERED.
* 90	2.37	2.46	0.09			MUDSTONE	BN VERY SOFT; CONSOLIDATED

\* DENOTES MEASURED BCA  
NEWPAGE

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNKHTRC85015

DATE - 10/31/85

- HISTORY -

START DATE - 07/13/85

END DATE - 07/13/85

CONTRACTOR -

GEOLOGIST - MACLEOD

OPERATOR - GULF CANADA

SURVEYOR -

REMARKS - NO ROOF STRIKE OBTAINABLE DUE TO EXCESSIVE OVERBUR  
DEN

- LOCATION -

PROVINCE - BC

ELEVATION - 1645.00

LICENCE/LEASE NUMBER - 7143

ZONE - 9

NORTHING - 6343655.00

EASTING - 510975.00

LATITUDE - 571416

LONGITUDE - 1284905

- ORIENTATION -

LENGTH - 1.50

INCLINATION - 28.0

AZIMUTH - 245.0

SIZE WIDTH - 0.9

SIZE HEIGHT - 0.8

ROOF STRIKE - 0

ROOF DIP - 0

ROOF DIR -

FLOOR STRIKE - 231

FLOOR DIP - 43

FLOOR DIR - S

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

=====





85/11/07

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: KH DATA SOURCE: TRC85015

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	0.00	0.11	0.11			MUDSTONE	M. BN WELL CONSOLIDATED; GREY-BROWN WEATHERIN G (FLOOR)
* 90	0.11	0.55	0.44			MUDSTONE	BLK SOFT; HIGHLY SHEARED WITH CONCAVE SLIP SURFACES; MINOR COAL LAMINAE
* 90	0.55	0.61	0.06			MUDSTONE	DK. BN UNCONSOLIDATED
* 90	0.61	0.92	0.31	00001		COAL	C-6. BLK NUMEROUS DISCONTINUOUS MUD LAMINAE; MIN OR FE STAINING
* 90	0.92	1.07	0.15			MUDSTONE	BN POORLY CONSOLIDATED; MINOR THIN COAL LA MINAE; TRUE ROOF THICKNESS NOT ATTAINAB LE

\* DENOTES MEASURED BCA  
NEWPAGE

===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNKHTRC85016

DATE - 10/31/85

- HISTORY -

START DATE - 07/13/85

END DATE - 07/13/85

CONTRACTOR -

GEOLOGIST - MACLEOD

OPERATOR - GULF CANADA

SURVEYOR -

REMARKS - ROOF UNOBTAINABLE DUE TO EXCESSIVE OVERBURDEN

- LOCATION -

PROVINCE - BC

ELEVATION - 1643.00

ZONE - 9

NORTHING - 6343700.00

EASTING - 511000.00

LICENCE/LEASE NUMBER - 7143

LATITUDE - 571417

LONGITUDE - 1284904

- ORIENTATION -

LENGTH - 1.40

INCLINATION - 35.0

AZIMUTH - 285.0

SIZE WIDTH - 0.6

SIZE HEIGHT - 0.8

ROOF STRIKE - 0

ROOF DIP - 0

ROOF DIR -

FLOOR STRIKE - 331

FLOOR DIP - 12

FLOOR DIR - E

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

=====



85/11/07

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPH BLOCK: KH DATA SOURCE: TRCB5016

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	0.00	0.10	0.10			MUDSTONE	LT. GR FLOOR ORANGE WEATHERED; FLOOR WELL CONSOLIDATED AND COMPETENT
* 90	0.10	0.30	0.20			MUDSTONE	BLK WITH NUMEROUS CLOSELY SPACED VERY FINE COAL LAMINAE; MODERATE TO WELL CONSOLIDATED
* 90	0.30	0.36	0.06	00001		COAL	C-3, BLK VERY FE STAINED
* 90	0.36	0.40	0.04	00001		COAL	C-5, BLK MODERATELY CONSOLIDATED
* 90	0.40	0.63	0.23	00001		COAL	SPOIL; WEATHERED; ABUNDANT COAL AND CARBONACEOUS MUDSTONE.
* 90	0.63	0.68	0.05	00001		MUDSTONE	DK. BN UNCONSOLIDATED
* 90	0.68	1.03	0.35	00001		COAL	SPOIL; HIGHLY WEATHERED WITH ABUNDANT HIGHLY SHEARED CARBONACEOUS MUDSTONE.
* 90	1.03	1.22	0.19	00001		COAL	C-4 HIGHLY FE STAINED; WITH THIN QUARTZ VEINS <1CM THICK; THIN MUDSTONE BANDS; ROOF IS UNATTAINABLE

\* DENOTES MEASURED BCA  
NEWPAGE

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNKHTRC85017

DATE - 10/31/85

- HISTORY -

START DATE - 07/13/85

END DATE - 07/13/85

CONTRACTOR -

GEOLOGIST - MACLEOD

OPERATOR - GULF CANADA

SURVEYOR -

REMARKS - ROOF NOT REACHED DUE TO EXCESSIVE OVERBURDEN

- LOCATION -

PROVINCE - BC

ELEVATION - 1585.00

LICENCE/LEASE NUMBER - 7143

ZONE - 9

NORTHING - 6344085.00

EASTING - 511150.00

LATITUDE - 571430

LONGITUDE - 1284855

- ORIENTATION -

LENGTH - 2.93

INCLINATION - 55.0

AZIMUTH - 348.0

SIZE WIDTH - 0.3

SIZE HEIGHT - 0.7

ROOF STRIKE - 0

ROOF DIP - 0

ROOF DIR -

FLOOR STRIKE - 244

FLOOR DIP - 36

FLOOR DIR - N

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

=====

# GULF CANADA RESOURCES INC.

COAL DIVISION  
MOUNT KLAPPAN PROJECT

SEAM DETAIL

TRUE THICKNESS

DATA SOURCE: XPN KH TRC85017 SEAM : INTERVAL(M) : 0.00 - 2.93 ELEVATION(M) : 1585.0  
 GEOLOGIST : MACLEOD SCALE: 1:47 DATE : NOV 07/85 DRAWING NO. :

SEAM COMP.	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES		% REC.	SAMPLE ID		COAL/ROCK TOTAL		COAL QUALITY A.D.B.							
			ROCK	COAL		SIMP	COMP	COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL. VAL MJ/KG		
	1.00	↑															
	2.93	↓		1.93	100.0	5951	5951	1.93 / 0.00		5.75	16.01	14.13	84.11	0.52	24.26		

85/11/07

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: KH DATA SOURCE: TRCB5017

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
• 90	0.00	1.00	1.00			MUDSTONE	DK.GY FLOOR ROCK; WELL CONSOLIDATED; RHYTHMIC ALLY ORANGE BANDED (FE STAINED)
• 90	1.00	1.50	0.50	05951		COAL	BLK SOFT; HIGHLY WEATHERED NATURE DOES NOT ALLOW DETAILED LOGGING
• 90	1.50	2.93	1.43	05951		COAL	C-3.BLK WELL CLEATED; WELL CONSOLIDATED; MINOR FE STAINING

• DENOTES MEASURED BCA  
NEWPAGE

GCRI COAL DIVISION HEAD PROJ KPN BLK KH DS TRC85017

=====

SAMPLE ID	05951	DATA TYPE (REAL,BORO,AVER,CALC)	REAL
SPLIT SAMPLE ID	HD1	DATE ANALYSED 15/10/85	
		ANALYSIS BASIS TYPE (AD,DB,AR,EM)	AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO)		ASTM	

TOP SIZE (MM)	-----		
SURFACE MOISTURE %	-----	TOTAL SULPHUR %	0.52
TOTAL MOISTURE %	13.13	PHOSPHOROUS %	-----
EQUILIBRIUM MOISTURE %	-----	CHLORINE (PPM)	-----
		SPECIFIC GRAVITY	-----
RESIDUAL MOISTURE %	5.75	FSI	-----
ASH %	16.01	HGI	-----
VOLATILE MATTER %	14.13	CO2 %	-----
FIXED CARBON %	64.11		
GROSS CALORIFIC VALUE (MJ/KG)	24.26		
NET CALORIFIC VALUE (MJ/KG)	-----		



===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRTRC85030

DATE - 12/17/85

- HISTORY -

START DATE - 08/22/85  
END DATE - / /

CONTRACTOR -  
GEOLOGIST - CARPENTER

OPERATOR -  
SURVEYOR -

REMARKS - CHANNEL SAMPLE TAKEN FROM COAL FACE IN TRIAL CARGO  
PIT LOST RIDGE. ROOF HAS BEEN STRIPPED SECTION TA  
KEN ALONG FACE PREPARED BY DOZER

- LOCATION -

PROVINCE - BC  
ELEVATION - 1809.19

ZONE - 9  
NORTHING - 6344297.00  
EASTING - 506047.75

LICENCE/LEASE NUMBER -

LATITUDE - 571437  
LONGITUDE - 1285359

- ORIENTATION -

LENGTH - 6.26  
SIZE WIDTH - 3.0  
SIZE HEIGHT - 0.3

INCLINATION - 0.0  
AZIMUTH - 95.0

ROOF STRIKE - 0  
ROOF DIP - 0  
ROOF DIR -

FLOOR STRIKE - 280  
FLOOR DIP - 16  
FLOOR DIR - S

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

=====



85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC89030

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 76	0.00	0.44	0.44	07601	I	COAL	C-3.BLK DISTURBED MATERIAL CAUSED FROM STRIPPIN G OFF OF OVERBURDEN
* 76	0.44	0.47	0.03	07601	I	MUDSTONE	CARB.BLK SOFT MALLEABLE
* 76	0.47	0.49	0.02	07601	I	COAL	C-1.BLK ABUNDANT CALCITE ON CLEAT
* 76	0.49	0.76	0.27	07601	I	COAL	C-2.BLK ABUNDANT CALCITE; MODERATELY SOFT; BREA KS EASILY WITH HAMMER.
* 76	0.76	0.80	0.04	07601	I	COAL	C-5.BLK
* 76	0.80	0.81	0.01	07601	I	MUDSTONE	DK.BN SOFT
* 76	0.81	1.86	1.05	07601	I	COAL	C-2.BLK OCCASIONAL MM. THICK CLAY BANDS
* 76	1.86	1.87	0.01	07601	I	ICE	CONTINUOUS BAND AT BASE OF COAL PARALLE L BEDDING
* 76	1.87	1.96	0.09	07601	I	MUDSTONE	DK.BN SOFT; MOIST; MASSIVE

\* DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LW DATA SOURCE: TRC89030

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 76	1.96	2.19	0.23	07601	I	COAL	C-3.BLK SOFT
* 76	2.19	2.30	0.11	07601	I	MUDSTONE	CARB.DK.BN ABUNDANT COAL STRINGERS
* 76	2.30	2.99	0.69	07601	I	COAL	C-1.BLK MODERATE SOFT ABUNDANT IRON STAIN AT UP PER & LOWER LIMITS
* 76	2.99	3.03	0.04	07601	I	MUDSTONE	CARB.BN SOFT FLAKY
* 76	3.03	3.24	0.21	07601	I	COAL	C-2.BN SOFT; FRIABLE
* 76	3.24	3.29	0.05	07601	I	MUDSTONE	DK.BN VERY IRREGULAR ALONG BEDDING; LENSING C MARACTERISTICS; HIGHLY IRON STAINED
* 76	3.29	3.49	0.20	07601	I	COAL	C-2.BLK
* 76	3.49	3.51	0.02	07601	I	MUDSTONE	DK.BN SOFT CLAYEY
* 76	3.51	3.59	0.08	07601	I	COAL	C-2

\* DENOTES MEASURED BCA

PROJECT: KPH BLOCK: LR DATA SOURCE: YRCB8030

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 76	3.59	3.64	0.05	07601	I	MUDSTONE	DK.BN
* 76	3.64	4.19	0.55	07601	I	COAL	C-1 HARD, MASSIVE
* 76	4.19	5.76	1.57	07601	I	COAL	C-1 HARD, MASSIVE OCCASSIONAL BANDS OF MUST STAINING; NOT CONTINUOUS
* 76	5.76	6.26	0.50		I	MUDSTONE	M.GY CARBONACEOUS; ABUNDANT PLANT FOSSILS; M MODERATELY HARD; WHITE STREAK

\* DENOTES MEASURED BCA  
NEWPAGE

===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPMLRTRC85031

DATE - 12/17/85

- HISTORY -

START DATE - / /  
END DATE - / /

CONTRACTOR -  
GEOLOGIST - BC

OPERATOR -  
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC  
ELEVATION - 1807.44

ZONE - 9  
NORTHING - 6344290.00  
EASTING - 506046.50

LICENCE/LEASE NUMBER -

LATITUDE - 571437  
LONGITUDE - 1285359

- ORIENTATION -

LENGTH - 0.00  
SIZE WIDTH - 0.0  
SIZE HEIGHT - 0.0

INCLINATION - 0.0  
AZIMUTH - 0.0

ROOF STRIKE - 0  
ROOF DIP - 0  
ROOF DIR -

FLOOR STRIKE - 0  
FLOOR DIP - 0  
FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

=====

GCRI COAL DIVISION	HEAD	PROJ	KPN	BLK	LR	DS	TRC85031	
=====		=====		=====		=====		
SAMPLE ID	07602	DATA TYPE (REAL,BORO,AVER,CALC)				REAL		
SPLIT SAMPLE ID	HD1	DATE ANALYSED 20/09/85						
		ANALYSIS BASIS TYPE (AD,DB,AR,EM)				AD		
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO)		ASTM						
TOP SIZE (MM)		----						
SURFACE MOISTURE %		----			TOTAL SULPHUR %			0.40
TOTAL MOISTURE %		----			PHOSPHOROUS %			----
EQUILIBRIUM MOISTURE %		----			CHLORINE (PPM)			----
					SPECIFIC GRAVITY			----
RESIDUAL MOISTURE %			5.26		FSI			----
ASH %			15.07		HGI			----
VOLATILE MATTER %			12.35		CO2 %			----
FIXED CARBON %			67.32					----
GROSS CALORIFIC VALUE (MJ/KG)			25.09					
NET CALORIFIC VALUE (MJ/KG)			----					

===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRTRC85032

DATE - 12/17/85

- HISTORY -

START DATE - 09/01/85

END DATE - / /

CONTRACTOR - 0

OPERATOR - 1

GEOLOGIST - VANDENBUSSCH

SURVEYOR - J MORTIMER

REMARKS - SECTION ALONG HIGHWALL IN TRIAL CARGO PIT. NO SAMP  
LE TAKEN DUE TO FALLING ROCKS OFF OF UNSTABLE HIGH  
WALL.

- LOCATION -

PROVINCE - BC

ZONE - 9

ELEVATION - 1798.71

NORTHING - 6344255.00

EASTING - 506033.37

LICENCE/LEASE NUMBER -

LATITUDE - 571436

LONGITUDE - 1285400

- ORIENTATION -

LENGTH - 4.90

INCLINATION - 0.0

AZIMUTH - 0.0

SIZE WIDTH - 0.0

SIZE HEIGHT - 0.0

ROOF STRIKE - 0

FLOOR STRIKE - 0

ROOF DIP - 0

FLOOR DIP - 0

ROOF DIR -

FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

=====





85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85032

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	1.20	1.20	07603	I	COAL	C-2 COMBINATION OF C1 AND C2.
00	1.20	1.21	0.01	07603	I	MUDSTONE	CARB
00	1.21	1.56	0.35	07603	I	COAL	C-1
00	1.56	1.66	0.10	07603	I	MUDSTONE	SLTY SOFT
00	1.66	1.71	0.05	07603	I	COAL	C-5
00	1.71	2.41	0.70	07603	I	COAL	C-1 COMBINATION OF C1 AND C2.
00	2.41	2.51	0.10	07603	I	COAL	C-5
00	2.51	4.81	2.30	07603	I	COAL	C-1 C2 BANDS THROUGHOUT. UPPER PORTION (.40 M DOWN UNIT) CONTAINS 2 - 3 CM MUDST BA NDS.

\* DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85032

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	4.81	5.06	0.25		I	MUDST	CARB. DK. GY MINOR COALY STRINGERS AND ABUNDANT PLAN T FOSSILS THROUGHOUT, BECOMES MORE SILT Y. WITH DEPTH.

\* DENOTES MEASURED BCA  
NEWPAGE

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRTRC85033

DATE - 12/17/85

- HISTORY -

START DATE - 09/01/85

END DATE - / /

CONTRACTOR -

GEOLOGIST - VANDENBUSSCH

OPERATOR -

SURVEYOR - J. MORTIMER

REMARKS - SECTION ALONG HIGHWALL IN TRIAL CARGO PIT. SAMPLE  
TAKEN (CHIP)

- LOCATION -

PROVINCE - BC

ELEVATION - 1798.50

LICENCE/LEASE NUMBER -

ZONE - 9

NORTHING - 6344263.00

EASTING - 506015.50

LATITUDE - 571436

LONGITUDE - 1285401

- ORIENTATION -

LENGTH - 4.90

SIZE WIDTH - 0.0

SIZE HEIGHT - 0.0

ROOF STRIKE - 0

ROOF DIP - 0

ROOF DIR -

INCLINATION - 0.0

AZIMUTH - 0.0

FLOOR STRIKE - 0

FLOOR DIP - 0

FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

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85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85033

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	0.30	0.30	07604	I	COAL	C-2 COMBINATION OF C1 AND C2.
00	0.30	0.35	0.05	07604	I	MUDSTONE	CARB
00	0.35	0.40	0.05	07604	I	COAL	C-3
00	0.40	1.50	1.10	07604	I	COAL	C-1 C1 AND C2, MINOR MUDSTONE BANDS WITHIN.
00	1.50	1.80	0.30	07604	I	COAL	C-2 ALTERNATING SCM, BANDS OF COAL (C2) AND MUDSTONE.
00	1.80	2.90	1.10	07604	I	COAL	C-1 C1 AND C2.
00	2.90	2.95	0.05	07604	I	MUDSTONE	CARB
00	2.95	3.00	0.05	07604	I	COAL	C-2 MUDDY
00	3.00	3.05	0.05	07604	I	MUDSTONE	SLTY

\* DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85033

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	3.05	4.90	1.85	07604	I	COAL	C-1 UPPER PORTION CONTAINS ABUNDANT C2 WITH MINOR CM MUDSTONE BANDS.
00	4.90	5.15	0.25		I	MUDST	CARB. DK. GY MINOR COALY STRINGERS AND ABUNDANT PLAN T FOSSILS THROUGHOUT. BECOMES MORE SILTY WITH DEPTH.

\* DENOTES MEASURED BCA  
NEWPAGE

JCRI COAL DIVISION HEAD PROJ KPN BLK LR IS TRC85033  
 =====

SAMPLE ID 07604 DATA TYPE (REAL,BORO,AVER,CALC) REAL  
 SPLIT SAMPLE ID HD1 DATE ANALYSED 15/09/85  
 ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD  
 NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

TOP SIZE (MM)	----.---	TOTAL SULPHUR %	0.43
SURFACE MOISTURE %	----.---	PHOSPHOROUS %	----.---
TOTAL MOISTURE %	----.---	CHLORINE (PPM)	-----
EQUILIBRIUM MOISTURE %	----.---	SPECIFIC GRAVITY	----.---
RESIDUAL MOISTURE %	2.37	FSI	----.---
ASH %	19.62	HGI	----.---
VOLATILE MATTER %	6.36	CO2 %	----.---
FIXED CARBON %	71.65		

GROSS CALORIFIC VALUE (MJ/KG) 26.35  
 NET CALORIFIC VALUE (MJ/KG) ----.---

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRTRC85034

DATE - 12/17/85

- HISTORY -

START DATE - 09/01/85

END DATE - / /

CONTRACTOR -

GEOLOGIST - VANDENBUSSCH

OPERATOR -

SURVEYOR - J MORTIMER

REMARKS - SECTION ALONG HIGHWALL IN TRIAL CARGO PIT. SAMPLE  
TAKEN (CHIP)

- LOCATION -

PROVINCE - BC

ELEVATION - 1796.10

ZONE - 9

NORTHING - 6344267.00

EASTING - 505988.50

LICENCE/LEASE NUMBER -

LATITUDE - 571436

LONGITUDE - 1285403

- ORIENTATION -

LENGTH - 4.90

INCLINATION - 0.0

AZIMUTH - 0.0

SIZE WIDTH - 0.0

SIZE HEIGHT - 0.0

ROOF STRIKE - 0

ROOF DIP - 0

ROOF DIR -

FLOOR STRIKE - 0

FLOOR DIP - 0

FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

=====



85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85034

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	1.40	1.40	07605	I	COAL	C-2 COMBINATION OF C1 AND C2.
00	1.40	1.50	0.10	07605	I	MUDSTONE	
00	1.50	1.70	0.20	07605	I	COAL	C-3
00	1.70	2.30	0.60	07605	I	COAL	C-1 COMBINATION OF C1 AND C2, MINOR MUDSTON E BANDS WITHIN.
00	2.30	2.35	0.05	07605	I	COAL	C-5
00	2.35	2.75	0.40	07605	I	COAL	C-1 C1 AND C2.
00	2.75	2.95	0.20	07605	I	COAL	C-2 CONTAINS CM MUDST BANDS THROUGHOUT.
00	2.95	5.10	2.15	07605	I	COAL	C-1 VERY MINOR MUDDY BANDS IN UPPER PORTION

\* DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85034

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	5.10	5.35	0.25		I	MUDST	CARB. DK. GY MINOR COALY STRINGERS AND ABUNDANT PLAN ? FOSSILS THROUGHOUT, BECOMES MORE SILT Y WITH DEPTH.

\* DENOTES MEASURED BCA  
NEWPAGE



WORLD COAL DIVISION HEAD PROJ KPN BLK LR DS TRC85034

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SAMPLE ID	07605	DATA TYPE (REAL,BORO,AVER,CALC)	REAL
SPLIT SAMPLE ID	HD1	DATE ANALYSED	15/09/85
		ANALYSIS BASIS TYPE (AD,DB,AR,EM)	AD

NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

TOP SIZE (MM)	-----		
SURFACE MOISTURE %	-----	TOTAL SULPHUR %	0.44
TOTAL MOISTURE %	-----	PHOSPHOROUS %	-----
EQUILIBRIUM MOISTURE %	-----	CHLORINE (PPM)	-----
		SPECIFIC GRAVITY	-----
RESIDUAL MOISTURE %	2.61	FSI	-----
ASH %	19.11	HGI	-----
VOLATILE MATTER %	6.56	CO2 %	-----
FIXED CARBON %	71.72		

GROSS CALORIFIC VALUE (MJ/KG) 26.80  
NET CALORIFIC VALUE (MJ/KG) -----

- DATA SOURCE SUMMARY -

DATA SOURCE - KPnlRTRC85035

DATE - 12/17/85

- HISTORY -

START DATE - 09/06/85

END DATE - / /

CONTRACTOR -

GEOLOGIST - BC & BVDB

OPERATOR -

SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC

ELEVATION - 1807.57

LICENCE/LEASE NUMBER -

ZONE - 9

NORTHING - 6344321.00

EASTING - 505987.00

LATITUDE - 571438

LONGITUDE - 1285403

- ORIENTATION -

LENGTH - 4.90

INCLINATION - 0.0

AZIMUTH - 0.0

SIZE WIDTH - 0.0

SIZE HEIGHT - 0.0

ROOF STRIKE - 0

ROOF DIP - 0

ROOF DIR -

FLOOR STRIKE - 0

FLOOR DIP - 0

FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

=====



85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: YRC85035

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	1.00	1.00	07606	I	COAL LOSS	REMOVED DURING OVERBURDEN REMOVAL.
00	1.00	1.30	0.30	07606	I	COAL	C-2 SOFT, EASILY BROKEN DUE TO THAWING PROC ESS.
00	1.30	1.34	0.04	07606	I	CLAY	CARB. DK. BN SOFT
00	1.34	2.16	0.82	07606	I	COAL	C-2 ABUNDANT ICE POCKETS UP TO 2 CM THICK W ITHIN BEDDING PLANES & CLEAVAGE SURFACE S. ABUNDANT ANKERITE AND RUST STAINING. MODERATELY HARD.
00	2.16	2.19	0.03	07606	I	MUDSTONE	COALY. TRANSITIONAL CONTACT INTO MUDST BELOW.
00	2.19	2.28	0.09	07606	I	MUDSTONE	DK. BN SOFT.
00	2.28	2.31	0.03	07606	I	COAL	C-4
00	2.31	2.33	0.02	07606	I	MUDSTONE	CARB. DK. BN
00	2.33	2.49	0.16	07606	I	COAL	C-2 SOFT

\* DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: YRC85035

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	2.49	2.60	0.11	07606	I	SANDSTONE	FG VARIES IN THICKNESS ALONG COAL FACE, CO NTAINS ABUNDANT COALY INCLUSIONS.
00	2.60	2.77	0.17	07606	I	COAL	C-1 CLEAT IS VERY APPARENT
00	2.77	2.96	0.19	07606	I	COAL	C-3
00	2.96	3.00	0.04	07606	I	MUDSTONE	W. GN GREENISH-BROWN, MODERATELY HARD
00	3.00	3.25	0.25	07606	I	COAL	C-3 SOFT, ABUNDANT ICE POCKETS.
00	3.25	4.05	0.80	07606	I	COAL	C-2 HIGHLY SHEARED, POLISHED, SLICKENSIDED SURFACES. SOFT. ABUNDANT ICE PARTICLES.
00	4.05	4.31	0.26	07606	I	COAL	C-2 GOOD CLEAVAGE. RUST STAINING.
00	4.31	4.32	0.01	07606	I	MUDSTONE	DK. BN
00	4.32	5.17	0.85	07606	I	COAL	C-1 VERY HARD. NO ICE IS APPARENT.

\* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85035

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. TO	SEAM TO	LITHOLOGY	DESCRIPTION
00	5.17	5.42	0.25		1	MUDST	CARB. DK. GY MINOR COALY STRINGERS AND ABUNDANT PLANT FOSSILS THROUGHOUT, BECOMES MORE SILTY WITH DEPTH.

\* DENOTES MEASURED BCA  
NEWPAGE

GCRI COAL DIVISION HEAD PROJ KPN BLK LR DS TRC85035

=====

SAMPLE ID	07606	DATA TYPE (REAL,BORO,AVER,CALC)	REAL
SPLIT SAMPLE ID	HD1	DATE ANALYSED 15/09/85	
		ANALYSIS BASIS TYPE (AD,DB,AR,EM)	AD

NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

TOP SIZE (MM)	-----		
SURFACE MOISTURE %	-----	TOTAL SULPHUR %	0.42
TOTAL MOISTURE %	-----	PHOSPHOROUS %	-----
EQUILIBRIUM MOISTURE %	-----	CHLORINE (PPM)	-----
		SPECIFIC GRAVITY	-----
RESIDUAL MOISTURE %	3.35	FSI	-----
ASH %	19.92	HGI	-----
VOLATILE MATTER %	7.84	CO2 %	-----
FIXED CARBON %	68.89		

GROSS CALORIFIC VALUE (MJ/KG) 25.77  
NET CALORIFIC VALUE (MJ/KG) -----

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRTRC85036

DATE - 12/17/85

- HISTORY -

START DATE - / /  
 END DATE - / /

CONTRACTOR -  
 GEOLOGIST - BC & BVDB

OPERATOR -  
 SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC  
 ELEVATION - 1802.13

ZONE - 9  
 NORTHING - 6344312.00  
 EASTING - 505947.50

LICENCE/LEASE NUMBER -

LATITUDE - 571438  
 LONGITUDE - 1285405

- ORIENTATION -

LENGTH - 0.00  
 SIZE WIDTH - 0.0  
 SIZE HEIGHT - 0.0

INCLINATION - 0.0  
 AZIMUTH - 0.0

ROOF STRIKE - 0  
 ROOF DIP - 0  
 ROOF DIR -

FLOOR STRIKE - 0  
 FLOOR DIP - 0  
 FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

=====

===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPMLRTRC85037

DATE - 12/17/85

- HISTORY -

START DATE - 09/15/85

END DATE - / /

CONTRACTOR -

GEOLOGIST - BC & BVDB

OPERATOR -

SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC

ELEVATION - 1797.73

LICENCE/LEASE NUMBER -

ZONE - 9

NORTHING - 6344296.00

EASTING - 505892.06

LATITUDE - 571437

LONGITUDE - 1285409

- ORIENTATION -

LENGTH - 5.52

INCLINATION - 0.0

AZIMUTH - 0.0

SIZE WIDTH - 0.0

SIZE HEIGHT - 0.0

ROOF STRIKE - 0

ROOF DIP - 0

ROOF DIR -

FLOOR STRIKE - 0

FLOOR DIP - 0

FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

=====





85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85037

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	0.35	0.35	07608	I	COAL	C-1 MIXED WITH OVERBURDEN 70% COAL, 30% SILTSTONE, COAL BADLY BROKEN.
00	0.35	0.56	0.21	07608	I	COAL	C-3 SOFT
00	0.56	0.58	0.02	07608	I	MUDSTONE	DK. BN SOFT - APPEARS TO BE CONTINUOUS ALONG D IP.
00	0.58	0.62	0.04	07608	I	COAL	C-5 SOFT
00	0.62	1.52	0.90	07608	I	COAL	C-2 MODERATELY HARD, INCREASING IN COMPETENCY DOWNWARD
00	1.52	1.62	0.10	07608	I	SILTSTONE	DK. BN SOFT, CLAYEY, ALMOST MALLIABLE, VERY HARD, OCC. SHALEY STRINGERS.
00	1.62	1.68	0.06	07608	I	COAL	C-4 VERY HARD, OCC. SHALEY STRINGERS.
00	1.68	1.70	0.02	07608	I	MUDSTONE	VERY HARD, OCC. SHALEY STRINGERS.
00	1.70	1.91	0.21	07608	I	COAL	C-3 MODERATELY HARD.

\* DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85037

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	1.91	1.95	0.04	07608	I	MUDSTONE	DK. BN MODERATELY HARD, LENTICULAR BEDDING.
00	1.95	2.77	0.82	07608	I	COAL	C-3 MODERATELY SOFT.
00	2.77	3.28	0.51	07608	I	COAL	C-2 MODERATELY HARD, MINOR SHEAR ZONES.
00	3.28	3.31	0.03	07608	I	MUDSTONE	DK. BN SOFT
00	3.31	3.43	0.12	07608	I	COAL	C-2
00	3.43	3.47	0.04	07608	I	MUDSTONE	DK. BN SOFT
00	3.47	3.64	0.17	07608	I	COAL	C-1 VERY HARD
00	3.64	3.70	0.06	07608	I	COAL	C-1 VERY HARD, OXIDIZED, IRON STAINING.
00	3.70	3.78	0.08	07608	I	COAL	C-2 HARD
00	3.78	3.79	0.01	07608	I	MUDSTONE	CARBONACIOUS

\* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85037

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	3.79	4.49	0.70	07608	I	COAL	C-1 VERY HARD
00	4.49	4.50	0.01	07608	I	MUDSTONE	DK. BN CLAY
00	4.50	5.53	1.03	07608	I	COAL	C-1 VERY HARD
00	5.53	5.78	0.25		I	MUDSTONE	CARB. DK. BN SOFT THINLY LAMINATED, ABUNDANT RUST STAINING

• DENOTES MEASURED BCA  
NEWPAGE

GCRI COAL DIVISION	HEAD	PROJ	KPN	BLK	LR	DS	TRC85037		
=====									
SAMPLE ID	07608	DATA TYPE (REAL,BORO,AVER,CALC)					REAL		
SPLIT SAMPLE ID	HD1	DATE ANALYSED 15/09/85							
		ANALYSIS BASIS TYPE (AD,DB,AR,EM)					AD		
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO)		ASTM							
TOP SIZE (MM)		---	---						
SURFACE MOISTURE %		---		TOTAL SULPHUR %		0.45			
TOTAL MOISTURE %		10.67		PHOSPHOROUS %		---			
EQUILIBRIUM MOISTURE %		---		CHLORINE (PPM)		---			
				SPECIFIC GRAVITY		---			
RESIDUAL MOISTURE %		1.30		FSI		---			
ASH %		18.12		HGI		---			
VOLATILE MATTER %		6.77		CO2 %		---			
FIXED CARBON %		73.81							
GROSS CALORIFIC VALUE (MJ/KG)		28.01							
NET CALORIFIC VALUE (MJ/KG)		---							

ICRI COAL DIVISION HEAD PROJ KPN BLK LR DS TRC85037

=====

SAMPLE ID	07608	DATA TYPE (REAL,BORO,AVER,CALC)	REAL
SPLIT SAMPLE ID	HD2	DATE ANALYSED	26/11/85
		ANALYSIS BASIS TYPE (AD,DB,AR,EM)	AD

NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

TOP SIZE (MM)	-----		
SURFACE MOISTURE %	-----	TOTAL SULPHUR %	0.46
TOTAL MOISTURE %	-----	PHOSPHOROUS %	-----
EQUILIBRIUM MOISTURE %	-----	CHLORINE (PPM)	-----
		SPECIFIC GRAVITY	-----
RESIDUAL MOISTURE %	1.09	FSI	-----
ASH %	17.60	HGI	-----
VOLATILE MATTER %	6.94	CO2 %	-----
FIXED CARBON %	74.37		

GROSS CALORIFIC VALUE (MJ/KG) 27.59  
NET CALORIFIC VALUE (MJ/KG) -----

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRTRC85038

DATE - 12/17/85

- HISTORY -

START DATE - 09/15/85

END DATE - / /

CONTRACTOR -

GEOLOGIST - BC & BVDB

OPERATOR -

SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC

ELEVATION - 1793.65

LICENCE/LEASE NUMBER -

ZONE - 9

NORTHING - 6344282.00

EASTING - 505892.25

LATITUDE - 571437

LONGITUDE - 1285409

- ORIENTATION -

LENGTH - 5.25

SIZE WIDTH - 0.0

SIZE HEIGHT - 0.0

ROOF STRIKE - 0

ROOF DIP - 0

ROOF DIR -

INCLINATION - 0.0

AZIMUTH - 0.0

FLOOR STRIKE - 0

FLOOR DIP - 0

FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

=====



85/12/12

## GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85038

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	0.15	0.15		I	MUDSTONE	DK. BN CARBONACEOUS, COALY STRINGERS THROUGHOUT, MOD. HARD, LAMINATED, ZONE OF ROOF ROCK NOT STRIPPED.
00	0.15	0.41	0.26	07609	I	COAL	C-1 MINOR FE. MINERAL STAINING.
00	0.41	0.45	0.04	07609	I	MUDSTONE	DK. BN SOFT, CARBONACEOUS.
00	0.45	0.55	0.10	07609	I	COAL	C-2
00	0.55	0.56	0.01	07609	I	MUDSTONE	DK. BN CARBONACEOUS
00	0.56	0.88	0.32	07609	I	COAL	C-2
00	0.88	0.90	0.02	07609	I	MUDSTONE	BLK CARBONACEOUS
00	0.90	1.73	0.83	07609	I	COAL	C-2 MOD. HARD.
00	1.73	1.85	0.12	07609	I	MUDSTONE	H. BN SOFT, SILTY, MASSIVE.

\* DENOTES MEASURED BCA

85/12/12

## GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85038

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	1.85	1.89	0.04	07609	I	COAL	C-5 HARD, SHALEY
00	1.89	1.99	0.10	07609	I	COAL	C-2
00	1.99	2.08	0.09	07609	I	COAL	C-3
00	2.08	2.12	0.04	07609	I	MUDSTONE	BLK CARBONACEOUS
00	2.12	2.14	0.02	07609	I	COAL	C-1
00	2.14	2.15	0.01	07609	I	MUDSTONE	BLK CARBONACEOUS
00	2.15	2.84	0.69	07609	I	COAL	C-1 MOD. HARD
00	2.84	2.88	0.04	07609	I	CLAY	BLK CARBONACEOUS, VERY SOFT.
00	2.88	3.29	0.41	07609	I	COAL	C-1 VERY HARD
00	3.29	3.32	0.03	07609	I	MUDSTONE	CARBONACEOUS, ABUNDANT FE STAIN.

\* DENOTES MEASURED BCA



PROJECT: KPH BLOCK: LR DATA SOURCE: TRC85038

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	3.32	4.05	0.73	07609	1	COAL	C-1 INT. OF SUB VERTICAL SHEAR PLANE TRENDING 194 DEGREES SOUTH, DIP 77 DEGREES WEST WITH TRANSVERSE MOVEMENT ALONG TREND
00	4.05	5.40	1.35	07609	1	COAL	C-1 VERY HARD, OCC. SLICKENSIDES.
00	5.40	5.65	0.25		1	MUDSTONE	DK. BN CARBONACEOUS, ABUNDANT FE STAINING, MOD. HARD.

\* DENOTES MEASURED BCA  
NEWPAGE

GCRI COAL DIVISION	HEAD	PROJ	KPN	BLK	LR	DS	TRC85038
=====							
SAMPLE ID	07609	DATA TYPE (REAL,BORO,AVER,CALC)				REAL	
SPLIT SAMPLE ID	HD1	DATE ANALYSED 15/09/85					
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO)						ASTM	
=====							
TOP SIZE (MM)	----	TOTAL SULPHUR %				0.43	
SURFACE MOISTURE %	----	PHOSPHOROUS %				----	
TOTAL MOISTURE %	8.36	CHLORINE (PPM)				----	
EQUILIBRIUM MOISTURE %	----	SPECIFIC GRAVITY				----	
RESIDUAL MOISTURE %	1.88	FSI				----	
ASH %	24.10	HGI				----	
VOLATILE MATTER %	6.19	CO2 %				----	
FIXED CARBON %	67.83						
=====							
GROSS CALORIFIC VALUE (MJ/KG)	25.39						
NET CALORIFIC VALUE (MJ/KG)	----						

ICRI COAL DIVISION HEAD PROJ KPN BLK LR DS TRC85038

SAMPLE ID 07609 DATA TYPE (REAL,BORO,AVER,CALC) REAL  
SPLIT SAMPLE ID HD2 DATE ANALYSED 26/11/85  
ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD  
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

TOP SIZE (MM)	-----		
SURFACE MOISTURE %	-----	TOTAL SULPHUR %	0.42
TOTAL MOISTURE %	-----	PHOSPHOROUS %	-----
EQUILIBRIUM MOISTURE %	-----	CHLORINE (PPM)	-----
		SPECIFIC GRAVITY	-----
RESIDUAL MOISTURE %	1.81	FSI	-----
ASH %	24.39	HGI	-----
VOLATILE MATTER %	6.32	CO2 %	-----
FIXED CARBON %	67.48		

GROSS CALORIFIC VALUE (MJ/KG) 24.86  
NET CALORIFIC VALUE (MJ/KG) -----

- DATA SOURCE SUMMARY -

DATA SOURCE - KPnlRTRC85039

DATE - 12/17/85

- HISTORY -

START DATE - 09/15/85  
END DATE - / /

CONTRACTOR -  
GEOLOGIST - BC & BVDB

OPERATOR -  
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC  
ELEVATION - 1792.70

ZONE - 9  
NORTHING - 6344273.00  
EASTING - 505932.19

LICENCE/LEASE NUMBER -

LATITUDE - 571436  
LONGITUDE - 1285406

- ORIENTATION -

LENGTH - 5.10  
SIZE WIDTH - 0.0  
SIZE HEIGHT - 0.0

INCLINATION - 0.0  
AZIMUTH - 0.0

ROOF STRIKE - 0  
ROOF DIP - 0  
ROOF DIR -

FLOOR STRIKE - 0  
FLOOR DIP - 0  
FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

=====



85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85039

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	0.67	0.67	07610	I	COAL	C-3 VERY HARD
00	0.67	0.70	0.03	07610	I	MUDSTONE	
00	0.70	1.63	0.93	07610	I	COAL	C-2 VERY HARD
00	1.63	1.78	0.15	07610	I	MUDSTONE	
00	1.78	1.97	0.19	07610	I	COAL	C-1 VERY HARD
00	1.97	2.01	0.04	07610	I	MUDSTONE	
00	2.01	5.10	3.09	07610	I	COAL	C-1 VERY HARD
00	5.10	5.35	0.25		I	MUDST	CARB. OK. GY MINOR COALY STRINGERS AND ABUNDANT PLANT FOSSILS THROUGHOUT, BECOMES MORE SILT Y. WITH DEPTH.

\* DENOTES MEASURED BCA  
NEWPAGE

Empty table area for additional data or notes.

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRTRC85040

DATE - 12/17/85

- HISTORY -

START DATE - 09/15/85

END DATE - / /

CONTRACTOR -

OPERATOR -

GEOLOGIST - BC & BVDB

SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC

ZONE - 9

ELEVATION - 1802.25

NORTHING - 6344317.00

EASTING - 505899.00

LICENCE/LEASE NUMBER -

LATITUDE - 571438

LONGITUDE - 1285408

- ORIENTATION -

LENGTH - 4.77

INCLINATION - 0.0

AZIMUTH - 0.0

SIZE WIDTH - 0.0

SIZE HEIGHT - 0.0

ROOF STRIKE - 0

FLOOR STRIKE - 0

ROOF DIP - 0

FLOOR DIP - 0

ROOF DIR -

FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

=====





85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85040

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	0.24	0.24	07611	I	COAL	COMPLETE ROOF MATERIAL STRIPPED OFF, DISTORTED, COAL CRUSHED, LESS THAN 20% VISIBLE ROOF ROCK MIXED IN WITH IT.
00	0.24	0.28	0.04	07611	I	MUDSTONE	DK. BN CLAYEY, SOFT
00	0.28	0.40	0.12	07611	I	COAL	C-2
00	0.40	0.42	0.02	07611	I	CLAY	BLK SOFT, CARBONACEOUS
00	0.42	0.73	0.31	07611	I	COAL	C-1
00	0.73	0.74	0.01	07611	I	CLAY	DK. BN SOFT, CARBONACEOUS
00	0.74	1.57	0.83	07611	I	COAL	C-2
00	1.57	1.68	0.11	07611	I	MUDSTONE	M. BN SOFT
00	1.68	1.73	0.05	07611	I	COAL	C-4

\* DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85040

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	1.73	1.82	0.09	07611	I	COAL	C-1
00	1.82	1.92	0.10	07611	I	MUDSTONE	DK. BN CARBONACEOUS, ABUNDANT COALY STRINGERS, FE STRINGERS
00	1.92	2.52	0.60	07611	I	COAL	C-1
00	2.52	2.55	0.03	07611	I	COAL	C-3 SHEAR ZONE
00	2.55	4.75	2.20	07611	I	COAL	C-1 OCCASSIONAL SHEARED BEDDING PLANE SURFACES, VERY HARD, FE STAINING THROUGHOUT.
00	4.75	5.00	0.25		I	MUDSTONE	DK. BN FLOOR, CARBONACEOUS.

\* DENOTES MEASURED BCA  
NEWPAGE

CRI COAL DIVISION	HEAD	PROJ KPN	BLK LR	DS TRC85040
=====				
SAMPLE ID	07611	DATA TYPE (REAL,BORO,AVER,CALC)		REAL
SPLIT SAMPLE ID	HD1	DATE ANALYSED 15/09/85		
		ANALYSIS BASIS TYPE (AD,DB,AR,EM)		AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO)		ASTM		
TOP SIZE (MM)	----			
SURFACE MOISTURE %	----	TOTAL SULPHUR %		0.45
TOTAL MOISTURE %	10.55	PHOSPHOROUS %		----
EQUILIBRIUM MOISTURE %	----	CHLORINE (PPM)		----
		SPECIFIC GRAVITY		----
RESIDUAL MOISTURE %	1.84	FSI		----
ASH %	19.94	HGI		----
VOLATILE MATTER %	5.94	CO2 %		----
FIXED CARBON %	72.28			
GROSS CALORIFIC VALUE (MJ/KG)	26.93			
NET CALORIFIC VALUE (MJ/KG)	----			

GCRI COAL DIVISION	HEAD	PROJ	KPN	BLK	LR	DS	TRC85040		
=====									
SAMPLE ID	07611	DATA TYPE (REAL,BORO,AVER,CALC)					REAL		
SPLIT SAMPLE ID	HD2	DATE ANALYSED 26/11/85							
ANALYSIS BASIS TYPE (AD,DB,AR,EM)							AD		
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO)							ASTM		
TOP SIZE (MM)	-----								
SURFACE MOISTURE %	-----	TOTAL SULPHUR %					0.45		
TOTAL MOISTURE %	-----	PHOSPHOROUS %					-----		
EQUILIBRIUM MOISTURE %	-----	CHLORINE (PPM)					-----		
		SPECIFIC GRAVITY					-----		
RESIDUAL MOISTURE %	1.98	FSI					-----		
ASH %	18.52	HGI					-----		
VOLATILE MATTER %	5.84	CO2 %					-----		
FIXED CARBON %	73.66								
GROSS CALORIFIC VALUE (MJ/KG)	27.90								
NET CALORIFIC VALUE (MJ/KG)	-----								

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRTRC85041

DATE - 12/17/85

- HISTORY -

START DATE - / /  
 END DATE - / /

CONTRACTOR -  
 GEOLOGIST - BC & BVDB

OPERATOR -  
 SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC  
 ELEVATION - 1797.15

ZONE - 9  
 NORTHING - 6344289.00  
 EASTING - 505843.56

LICENCE/LEASE NUMBER -

LATITUDE - 571437  
 LONGITUDE - 1285411

- ORIENTATION -

LENGTH - 0.00

INCLINATION - 0.0  
 AZIMUTH - 0.0

SIZE WIDTH - 0.0  
 SIZE HEIGHT - 0.0

ROOF STRIKE - 0  
 ROOF DIP - 0  
 ROOF DIR -

FLOOR STRIKE - 0  
 FLOOR DIP - 0  
 FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE





85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85041

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	1.45	1.45		I	SLTST	CLYY. H. GY. LAM FINELY LAMINATED SILTYSTONE AND MUDSTONE , BECOMES MORE MUDDY TOWARDS BASE.
00	1.45	1.47	0.02	07612	I	COAL	C-5
00	1.47	1.60	0.13	07612	I	COAL	C-2
00	1.60	1.72	0.12	07612	I	MUDST	CARB. H-DK. GY. MAS
00	1.72	2.07	0.35	07612	I	COAL	C-1
00	2.07	2.08	0.01	07612	I	COAL	C-2
00	2.08	2.10	0.02	07612	I	COAL	C-1

\* DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85041

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	2.10	2.48	0.38	07612	I	COAL	C-1
00	2.48	2.49	0.01	07612	I	MUDST	CARB. H-DK. GY. MAS
00	2.49	2.97	0.48	07612	I	COAL	C-1
00	2.97	3.03	0.06	07612	I	MUDST	CLYY. H. GY. MAS
00	3.03	3.13	0.10	07612	I	COAL	C-3
00	3.13	3.24	0.11	07612	I	COAL	C-1
00	3.24	3.27	0.03	07612	I	COAL	C-3

\* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85041

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	3.27	3.30	0.03	07612 I		MUDST	CLYY.M.GY.MAS
00	3.30	4.08	0.78	07612 I		COAL	C-1
00	4.08	4.27	0.19	07612 I		MUDST	CLYY.M.GY.MAS
00	4.27	4.50	0.23	07612 I		COAL	C-1
00	4.50	4.68	0.18	07612 I		MUDST	CARB.M-DK.GY.MAS
00	4.68	4.86	0.18	07612 I		COAL	C-2
00	4.86	4.88	0.02	07612 I		MUDST	CARB.M-DK.GY.MAS

\* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85041

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	4.88	5.10	0.22	07612 I		COAL	C-2
00	5.10	5.12	0.02	07612 I		MUDST	CLYY.M-DK.GY.MAS
00	5.12	5.37	0.25	07612 I		COAL	C-1
00	5.37	5.72	0.35	07612 I		COAL	C-2
00	5.72	6.02	0.30	07612 I		COAL	C-1
00	6.02	6.03	0.01	07612 I		MUDST	CARB.M-DK.GY.MAS
00	6.03	6.35	0.32	07612 I		COAL	C-1

\* DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPM BLOCK: LR DATA SOURCE: TRC85041

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK	SAMP ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	6.38	6.60	0.25	07612 I		COAL	C-2
00	6.60	6.81	0.21	07612 I		COAL	C-1
00	6.81	6.94	0.13	07612 I		COAL	C-2
00	6.94	7.19	0.25	I		SILTST	CLYY.M.GY.LAM LAMINATED SILTSTONE AND MUDSTONE NEAR TOP GRADING TO INTERBEDDED SILTSTONE.

• DENOTES MEASURED BCA  
NEWPAGE



- DATA SOURCE SUMMARY -

DATA SOURCE - KPnlRTRC85042

DATE - 12/17/85

- HISTORY -

START DATE - / /  
END DATE - / /

CONTRACTOR -  
GEOLOGIST - BC & BVDB

OPERATOR -  
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC  
ELEVATION - 1799.08

ZONE - 9  
NORTHING - 6344261.00  
EASTING - 506019.00

LICENCE/LEASE NUMBER -

LATITUDE - 571436  
LONGITUDE - 1285401

- ORIENTATION -

LENGTH - 0.00

INCLINATION - 0.0  
AZIMUTH - 0.0

SIZE WIDTH - 0.0  
SIZE HEIGHT - 0.0

ROOF STRIKE - 0  
ROOF DIP - 0  
ROOF DIR -

FLOOR STRIKE - 0  
FLOOR DIP - 0  
FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE





85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85042

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	0.25	0.25		I	MUDST	CARB.M-DK.GY.MAS
00	0.25	0.61	0.36	07613	I	COAL	C-2
00	0.61	0.64	0.03	07613	I	MUDST	CLYY.M-DK.GY.MAS
00	0.64	0.69	0.05	07613	I	COAL	C-2
00	0.69	0.91	0.22	07613	I	COAL	C-1
00	0.91	1.18	0.27	07613	I	MUDST	CARB.M.GY.MAS
00	1.18	1.68	0.50	07613	I	COAL	C-1

• DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85042

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	1.68	1.85	0.17	07613	I	COAL	C-1
00	1.85	2.09	0.24	07613	I	MUDST	CLYY.M.GY.MAS
00	2.09	2.10	0.01	07613	I	COAL	C-2
00	2.10	2.11	0.01	07613	I	MUDST	CLYY.M.GY.MAS
00	2.11	2.29	0.18	07613	I	COAL	C-1
00	2.29	2.31	0.02	07613	I	MUDST	CLYY.M.GY.MAS
00	2.31	2.42	0.11	07613	I	COAL	C-2

• DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: LR DATA SOURCE: YRC85042

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	2.42	3.34	0.92	07613	I	COAL	C-1
00	3.34	3.36	0.02	07613	I	COAL	C-6
00	3.36	3.46	0.10	07613	I	COAL	C-1
00	3.46	3.47	0.01	07613	I	MUDST	CARB. M-DK. GY. MAS.
00	3.47	3.98	0.11	07613	I	COAL	C-1
00	3.98	3.63	0.05	07613	I	COAL	C-2
00	3.63	3.64	0.01	07613	I	MUDST	CLY. M-DK. GY. MAS.

\* DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 4

PROJECT: KPN BLOCK: LR DATA SOURCE: YRC85042

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	3.64	3.94	0.30	07613	I	COAL	C-1 MINOR THIN MUDDY BANDS WITHIN
00	3.94	5.59	1.65	07613	I	COAL	C-1 MINOR THIN MUDDY BANDS WITHIN, FE STAIN ED AT BASE
00	5.59	5.73	0.14	07613	I	COAL	C-6
00	5.73	5.98	0.25		I	MUDST	CARB. M-DK. GY. ABUNDANT PLANT FOSSILS THROUGHOUT. BECO. MES MORE SILTY WITH DEPTH.

\* DENOTES MEASURED BCA  
NEWPAGEFORM  
4001

- DATA SOURCE SUMMARY -

DATA SOURCE - KPMLRTRC85043

DATE - 12/17/85

- HISTORY -

START DATE - 09/27/85

END DATE - / /

CONTRACTOR -

GEOLOGIST - BC & BVOB

OPERATOR -

SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC

ELEVATION - 1805.83

ZONE - 9

NORTHING - 6344317.00

EASTING - 505799.00

LICENCE/LEASE NUMBER -

LATITUDE - 571438

LONGITUDE - 1285414

- ORIENTATION -

LENGTH - 4.81

INCLINATION - 0.0

AZIMUTH - 0.0

SIZE WIDTH - 0.0

SIZE HEIGHT - 0.0

ROOF STRIKE - 0

ROOF DIP - 0

ROOF DIR -

FLOOR STRIKE - 0

FLOOR DIP - 0

FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE



85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85043

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.09	0.12	0.12	07614	I	COAL	C-2 FRIABLE, MINOR FE STAIN.
00	0.12	0.14	0.02	07614	I	MUDSTONE	M.GY SOFT
00	0.14	0.31	0.37	07614	I	COAL	C-2 FRIABLE, MINOR MUDDY BANDS WITHIN.
00	0.31	0.54	0.03	07614	I	MUDSTONE	CARB. DK. GY SOFT (THICKNESS VARIES; 1 - 5 CM)
00	0.54	0.97	0.43	07614	I	COAL	C-2 ABUNDANT C-1 BANDS THROUGHOUT, MINOR FE STAIN.
00	0.97	1.31	0.34	07614	I	COAL	C-1 HARD, MINOR BANDS OF C2.
00	1.31	1.33	0.02	07614	I	COAL	C-4 BANDED
00	1.33	1.43	0.10	07614	I	MUDSTONE	GY SOFT, UNCONSOLIDATED
00	1.43	1.50	0.07	07614	I	COAL	C-1

\* DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85043

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	1.50	1.54	0.04	07614	I	SILTSTONE	M.GY CONSOLIDATED, HARD
00	1.54	2.26	0.72	07614	I	COAL	C-2 HIGHLY SHEARED, GRADE OF COAL IS APPROXIMATE.
00	2.26	2.29	0.03	07614	I	MUDSTONE	BN H. HARD, FE STAINED.
00	2.29	2.34	0.05	07614	I	COAL	C-2
00	2.34	2.36	0.02	07614	I	MUDSTONE	M.GY SOFT
00	2.36	2.51	0.15	07614	I	COAL	C-1 PARTIALLY SHEARED, FRIABLE
00	2.51	2.53	0.02	07614	I	MUDSTONE	M.GY HARD
00	2.53	3.13	0.60	07614	I	COAL	C-1 HARD, FE STAIN, SHEARED IN PLACES.
00	3.13	4.43	1.30	07614	I	COAL	C-1 HARD, SHEARED IN PLACES.

\* DENOTES MEASURED BCA

PROJECT: KPH BLOCK: LR DATA SOURCE: TRC85043

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	4.43	4.53	0.10	07614	I	COAL	C-4 INTENSELY SHEARED ZONE, POWDERS, VARIES A GREAT DEAL IN THICKNESS.
00	4.53	4.78	0.25		I	MUDST	CARB. DK. GY MINOR COALY STRINGERS AND ABUNDANT PLAN T FOSSILS THROUGHOUT, BECOMES MORE SILTY WITH DEPTH.

\* DENOTES MEASURED BCA  
NEWPAGE



===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPMLRTRC85044

DATE - 12/17/85

- HISTORY -

START DATE - 09/26/85  
END DATE - / /

CONTRACTOR -  
GEOLOGIST - BC & BVOB

OPERATOR -  
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC  
ELEVATION - 1804.08

ZONE - 9  
NORTHING - 6344315.00  
EASTING - 505819.75

LICENCE/LEASE NUMBER -

LATITUDE - 571438  
LONGITUDE - 1285413

- ORIENTATION -

LENGTH - 4.78  
SIZE WIDTH - 0.0  
SIZE HEIGHT - 0.0

INCLINATION - 0.0  
AZIMUTH - 0.0

ROOF STRIKE - 0  
ROOF DIP - 0  
ROOF DIR -

FLOOR STRIKE - 0  
FLOOR DIP - 0  
FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

=====



85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPH BLOCK: LR DATA SOURCE: TRC83044

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	0.40	0.40	07615	I	COAL	C-2 2 OR 3 1CM MUDSTONE BANDS WITHIN, COVERED AND DISTURBED, HARD TO SEE.
00	0.40	1.20	0.80	07615	I	COAL	C-2 GOOD CLEAT, MINOR FE STAIN, FRIABLE IN PLACES. APPROACHING GI. IN PLACES.
00	1.20	1.29	0.09	07615	I	MUDSTONE	GY SOFT, GREY - BROWN.
00	1.29	1.32	0.03	07615	I	COAL	E-1 FE STAINING.
00	1.32	1.33	0.01	07615	I	MUDSTONE	DK. GY M. HARD.
00	1.33	1.37	0.04	07615	I	COAL	C-4 VERY SOFT.
00	1.37	1.51	0.14	07615	I	SILTSTONE	M. GY HARD, CONSOLIDATED, LOCALLY THICKENED.
00	1.51	1.67	0.16	07615	I	COAL	C-3 FRIABLE, SOFT.
00	1.67	1.70	0.03	07615	I	COAL	C-4 MUDDY, FE STAINED.

\* DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPH BLOCK: LR DATA SOURCE: TRC83044

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	1.70	2.05	0.35	07615	I	COAL	C-2 PARTIALLY SHEARED, FE STAINED.
00	2.05	2.07	0.02	07615	I	COAL	C-6 MUDDY, SPOIL APPEARANCE.
00	2.07	2.30	0.23	07615	I	COAL	C-2
00	2.30	2.34	0.04	07615	I	MUDSTONE	CARB. M. GY COALY, M. HARD
00	2.34	2.67	0.33	07615	I	COAL	C-2 SHEARED, FE STAINED, APPEARS LOWER QUALITY DUE TO SHEARING, MINOR MUDDY BANDS.
00	2.67	2.71	0.04	07615	I	COAL	C-2
00	2.71	2.73	0.02	07615	I	MUDSTONE	BN M. HARD, FE STAINED.
00	2.73	3.65	0.92	07615	I	COAL	C-2 SHEARED PERIODICALLY, FRIABLE, MINOR MUDSTONE BANDS WITHIN, POSSIBLY LOWER C V ALUE WHERE HIGHLY SHEARED.

\* DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85044

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	3.65	4.78	1.13	07615	I	COAL	C-1 VERY HARD, FE STAINING.
00	4.78	5.03	0.25		I	MUDST	CARB. OK. GY MINOR COALY STRINGERS AND ABUNDANT PLANT FOSSILS THROUGHOUT, BECOMES MORE SILTY WITH DEPTH.

\* DENOTES MEASURED BCA  
NEWPAGE

===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRTRC85045

DATE - 12/17/85

- HISTORY -

START DATE - 09/26/85  
END DATE - / /

CONTRACTOR -  
GEOLOGIST - BC & BVDB

OPERATOR -  
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC  
ELEVATION - 1799.53

ZONE - 9  
NORTHING - 6344307.00  
EASTING - 505853.56

LICENCE/LEASE NUMBER -

LATITUDE - 571437  
LONGITUDE - 1285411

- ORIENTATION -

LENGTH - 5.03  
SIZE WIDTH - 0.0  
SIZE HEIGHT - 0.0

INCLINATION - 0.0  
AZIMUTH - 0.0

ROOF STRIKE - 0  
ROOF DIP - 0  
ROOF DIR -

FLOOR STRIKE - 0  
FLOOR DIP - 0  
FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

=====



85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: TNCB5045

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	0.15	0.15	07616	I	COAL	C-2 FRIABLE
00	0.15	0.17	0.02	07616	I	MUDSTONE	CARB. DK. GY VERY SOFT
00	0.17	0.20	0.03	07616	I	COAL	C-2 FRIABLE
00	0.20	0.22	0.02	07616	I	MUDSTONE	CARB. DK. GY HARD, SILTY
00	0.22	0.97	0.75	07616	I	COAL	C-1 C2 IN PLACES, WELL DEVELOPED CLEAT.
00	0.97	1.05	0.08	07616	I	MUDSTONE	CLY. M. BN SOFT
00	1.05	1.16	0.11	07616	I	COAL	C-2
00	1.16	1.17	0.01	07616	I	MUDSTONE	DK, GY MED. HARDNESS
00	1.17	1.23	0.06	07616	I	COAL	C-2
00	1.23	1.31	0.08	07616	I	SILTSTONE	M. GY HARD, CONSOLIDATED

\* DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: TNCB5045

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	1.31	1.45	0.14	07616	I	COAL	C-2 GOOD CLEAT
00	1.45	1.51	0.06	07616	I	COAL	C-4 SHEARED & POWDERY, SOFT.
00	1.51	1.92	0.41	07616	I	COAL	C-2 GOOD CLEAT, MINOR MUDDY BANDS WITHIN.
00	1.92	2.00	0.08	07616	I	COAL	C-2 VERY SHEARED, POWDERY AND SOFT.
00	2.00	2.01	0.01	07616	I	MUDSTONE	CARB. DK. GY SOFT, COALY
00	2.01	2.42	0.41	07616	I	COAL	C-2 MINOR MUDDY BANDS
00	2.42	2.50	0.08	07616	I	MUDSTONE	CARB COALY BANDS WITHIN.
00	2.50	2.57	0.07	07616	I	COAL	C-3 SOFT, FRIABLE
00	2.57	2.58	0.01	07616	I	MUDSTONE	M. BN MEDIUM HARDNESS

\* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85045

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	2.58	2.94	0.36	07616	I	COAL	C-2 SLIGHTLY SHEARED IN PLACES. MINOR FE STAIN. SHEAR PLANE 180 DEGREES / 55 DEGREES WEST. SHEAR CONTAINS MUD AND C-6. AND IS 3CM WIDE.
00	2.94	3.59	0.65	07616	I	COAL	C-1 GOOD CLEAT (SPACED WIDER), VERY HARD, RUSTY.
00	3.59	3.61	0.02	07616	I	COAL	C-1 SHEAR PLANE, AS ABOVE
00	3.61	4.63	1.02	07616	I	COAL	C-1 VERY HARD, RUSTY.
00	4.63	4.88	0.25		I	MUDST	CARB. DK. GR. MINOR COALY STRINGERS AND ABUNDANT PLANT FOSSILS THROUGHOUT. BECOMES MORE SILTY WITH DEPTH.

\* DENOTES MEASURED BCA  
NEWPAGE



- DATA SOURCE SUMMARY -

DATA SOURCE - KPnlRTRC85046

DATE - 12/17/85

- HISTORY -

START DATE - 09/24/85  
END DATE - / /

CONTRACTOR -  
GEOLOGIST - BC & BVDB

OPERATOR -  
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC  
ELEVATION - 1798.20

ZONE - 9  
NORTHING - 6344302.00  
EASTING - 505875.37

LICENCE/LEASE NUMBER -

LATITUDE - 571437  
LONGITUDE - 1285410

- ORIENTATION -

LENGTH - 4.90

INCLINATION - 0.0  
AZIMUTH - 0.0

SIZE WIDTH - 0.0  
SIZE HEIGHT - 0.0

ROOF STRIKE - 0  
ROOF DIP - 0  
ROOF DIR -

FLOOR STRIKE - 0  
FLOOR DIP - 0  
FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE



85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPM BLOCK: LR DATA SOURCE: TRC85044

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	0.10	0.10	07617	I	COAL	C-1
00	0.10	0.12	0.02	07617	I	MUDSTONE	CARB
00	0.12	0.39	0.27	07617	I	COAL	C-2 VERY GOOD CLEAT
00	0.39	0.59	0.20	07617	I	COAL	C-2 BANDS OF MUDDY MATERIAL THROUGHOUT, PARTIALLY SHEARED.
00	0.59	1.09	0.50	07617	I	COAL	C-2 SLIGHTLY SHEARED IN PLACES.
00	1.09	1.14	0.05	07617	I	MUDSTONE	CARB. DK. GY MED. SOFTNESS
00	1.14	1.22	0.08	07617	I	MUDSTONE	CARB. LT. BN MED. SOFTNESS
00	1.22	1.25	0.03	07617	I	COAL	C-4 THIN VITRINITE BANDS WITHIN.

\* DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPM BLOCK: LR DATA SOURCE: TRC85044

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	1.25	1.26	0.01	07617	I	MUDSTONE	LT. GY HARD
00	1.26	1.41	0.15	07617	I	COAL	C-1
00	1.41	1.45	0.04	07617	I	SILTSTONE	M. GY HARD, CONSOLIDATED
00	1.45	1.47	0.02	07617	I	COAL	C-4
00	1.47	1.49	0.02	07617	I	SILTSTONE	M. GY MUDDY, HARD
00	1.49	1.59	0.10	07617	I	COAL	C-2
00	1.59	1.62	0.03	07617	I	COAL	C-5
00	1.62	2.02	0.40	07617	I	COAL	C-2 PARTIALLY SHEARED, MINOR MUDDY BANDS WITHIN.
00	2.02	2.04	0.02	07617	I	MUDSTONE	CARB. DK. GY COALY

\* DENOTES MEASURED BCA

85/12/12

## GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85046

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	2.04	2.19	0.15	07617	I	COAL	C-1 VERY HARD
00	2.19	2.23	0.04	07617	I	COAL	C-2
00	2.23	2.28	0.05	07617	I	MUDSTONE	CARB. DK. GY COALY
00	2.28	2.58	0.30	07617	I	COAL	C-2 QUITE SHEARED IN PLACES.
00	2.58	3.03	0.45	07617	I	COAL	C-1 VERY HARD, ABUNDANT FE STAIN.
00	3.03	3.05	0.02	07617	I	MUDSTONE	M. GY.
00	3.05	3.45	0.40	07617	I	COAL	C-1 VERY HARD
00	3.45	3.50	0.05	07617	I	COAL	C-3 FINE MUDSTONE BANDS
00	3.50	4.60	1.10	07617	I	COAL	C-1 VERY HARD, MINOR FE STAINING.

\* DENOTES MEASURED BCA

85/12/12

## GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 4

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85046

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	4.60	4.85	0.25		I	MUDST.	CARB. DK. GY MINOR COALY STRINGERS AND ABUNDANT PLANT F FOSSILS THROUGHOUT, BECOMES MORE SILT Y. WITH DEPTH.

\* DENOTES MEASURED BCA  
NEWPAGE

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRTRC85047

DATE - 12/17/85

- HISTORY -

START DATE - 09/28/85

END DATE - / /

CONTRACTOR -

GEOLOGIST - BC & BVDB

OPERATOR -

SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC

ELEVATION - 1808.63

LICENCE/LEASE NUMBER -

ZONE - 9

NORTHING - 6344319.00

EASTING - 505778.50

LATITUDE - 571438

LONGITUDE - 1285415

- ORIENTATION -

LENGTH - 4.15

INCLINATION - 0.0

AZIMUTH - 0.0

SIZE WIDTH - 0.0

SIZE HEIGHT - 0.0

ROOF STRIKE - 0

ROOF DIP - 0

ROOF DIR -

FLOOR STRIKE - 0

FLOOR DIP - 0

FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

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85/12/12

## GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85047

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	0.03	0.03	07618	I	COAL	C-3
00	0.03	0.15	0.12	07618	I	COAL	C-2 GOOD CLEAT, FRIABLE
00	0.15	0.17	0.02	07618	I	MUDSTONE	CARB. DK. GY SOFT
00	0.17	0.49	0.32	07618	I	COAL	C-2 SLIGHTLY FRIABLE, GOOD CLEAT
00	0.49	0.51	0.02	07618	I	MUDSTONE	CARB. DK. GY SOFT
00	0.51	1.26	0.75	07618	I	COAL	C-2 HIGHLY FE STAINED IN PLACES, SOLID. C-1 BANDS WITHIN.
00	1.26	1.34	0.08	07618	I	COAL	C-3 BANDS OF COAL AND MUD, CONTORTED.
00	1.34	1.40	0.06	07618	I	MUDSTONE	M. GY SOFT, UNCONSOLIDATED

# DENOTES MEASURED BCA

85/12/12

## GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85047

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	1.40	1.85	0.45	07618	I	COAL	C-2 HIGHLY SHEARED & POWDERED, VERY SOFT & BREAKABLE, C DESIGNATION DIFFICULT.
00	1.85	1.90	0.05	07618	I	MUDSTONE	M. GY MED. HARDNESS, FE STAINED IN PLACES.
00	1.90	2.08	0.18	07618	I	COAL	C-2 VERY FE STAINED
00	2.08	2.10	0.02	07618	I	COAL	C-4
00	2.10	2.34	0.24	07618	I	COAL	C-2 VERY FINE CLEAT
00	2.34	4.04	1.70	07618	I	COAL	C-1 VERY HARD, ABUNDANT FE STAIN, ONE SHEAR SURFACE (5CM WIDE) AT 200 DEGREES / 6 5 DEGREES EAST.
00	4.04	4.06	0.02	07618	I	MUDSTONE	M. GY HARD
00	4.06	4.23	0.17	07618	I	COAL	C-1 FE STAINED.

# DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85047

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	4.23	4.48	0.25		1	MUDST	CARB. DK. GY MINOR COALY STRINGERS AND ABUNDANT PLANT FOSSILS THROUGHOUT, BECOMES MORE SILTY WITH DEPTH.

\* DENOTES MEASURED BCA  
NEWPAGE

1004  
R  
M



===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRTRC85048

DATE - 12/17/85

- HISTORY -

START DATE - 10/05/85

END DATE - / /

CONTRACTOR -

GEOLOGIST - BC & BVDB

OPERATOR -

SURVEYOR -

REMARKS - INCRIMENTAL SAMPLE

- LOCATION -

PROVINCE - BC

ELEVATION - 1798.45

LICENCE/LEASE NUMBER -

ZONE - 9

NORTHING - 6344306.00

EASTING - 505862.06

LATITUDE - 571437

LONGITUDE - 1285410

- ORIENTATION -

LENGTH - 4.25

SIZE WIDTH - 0.0

SIZE HEIGHT - 0.0

ROOF STRIKE - 0

ROOF DIP - 0

ROOF DIR -

INCLINATION - 0.0

AZIMUTH - 0.0

FLOOR STRIKE - 0

FLOOR DIP - 0

FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

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85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPW BLOCK: LR DATA SOURCE: TRC85048

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	0.15	0.15	07632	I	COAL	C-3
00	0.15	0.16	0.01	07632	I	COAL	C-6
00	0.16	0.96	0.80	07632	I	COAL	C-2 ABUNDANT RUST. INCREASES TOWARDS BASE, MINERAL STAIN ON CLEFT.
00	0.96	1.08	0.12	07632	I	MUDSTONE	M-DK. GY SOFT. (MODERATELY)
00	1.08	1.15	0.07	07632	I	COAL	C-6 ABUNDANT THIN C1 BANDS.
00	1.15	1.21	0.06	07632	I	COAL	C-1
00	1.21	1.23	0.02	07632	I	MUDSTONE	CARB
00	1.23	1.30	0.07	07632	I	COAL	C-1

\* DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPW BLOCK: LR DATA SOURCE: TRC85048

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	1.30	1.39	0.09	07632	I	COAL	C-6 MINOR MUDSTONE IN BANDS WITH OCC C1 STR INGERS.
00	1.39	1.99	0.60	07633	I	COAL	C-1 MODERATELY HARD
00	1.99	2.02	0.03	07633	I	MUDSTONE	HIGHLY SHEARED, SOFT.
00	2.02	2.39	0.37	07633	I	COAL	C-1 HIGHLY SHEARED, SOFT.
00	2.39	2.41	0.02	07634	I	MUDSTONE	CARB MOD. SOFT.
00	2.41	2.71	0.30	07634	I	COAL	C-1
00	2.71	2.72	0.01	07634	I	MUDSTONE	LT. BN LENTICULAR
00	2.72	2.91	0.19	07634	I	COAL	C-1
00	2.91	2.94	0.03	07634	I	HEMATITE	
00	2.94	3.56	0.62	07634	I	COAL	C-1 VERY HARD, OCC. MINERAL STAIN

\* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85048

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	3.56	3.60	0.04	07634	I	COAL	C-1 ABUNDANT FE STAIN (ALMOST ORANGE), ABUN DANT MINERAL STAIN ON CONTORTED FRACTUR ES.
00	3.60	4.25	0.65	07634	I	COAL	C-1
00	4.25	4.50	0.25		I	MUDST	CARB. DK. GY MINOR COALY STRINGERS AND ABUNDANT PLAN T FOSSILS THROUGHOUT. BECOMES MORE SILT Y WITH DEPTH.

\* DENOTES MEASURED BCA  
MENPAGE

- DATA SOURCE SUMMARY -

DATA SOURCE - KPnlRTRC85049

DATE - 12/17/85

- HISTORY -

START DATE - 10/05/85  
 END DATE - / /

CONTRACTOR -  
 GEOLOGIST - BC & BVDB

OPERATOR -  
 SURVEYOR -

REMARKS - INCRIMENTAL SAMPLE.

- LOCATION -

PROVINCE - BC  
 ELEVATION - 1799.65

ZONE - 9  
 NORTHING - 6344294.00  
 EASTING - 505807.75

LICENCE/LEASE NUMBER -

LATITUDE - 571437  
 LONGITUDE - 1285414

- ORIENTATION -

LENGTH - 4.85  
 SIZE WIDTH - 0.0  
 SIZE HEIGHT - 0.0

INCLINATION - 0.0  
 AZIMUTH - 0.0

ROOF STRIKE - 0  
 ROOF DIP - 0  
 ROOF DIR -

FLOOR STRIKE - 0  
 FLOOR DIP - 0  
 FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

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85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85049

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	0.23	0.23	07635	I	COAL	C-1 FE STAIN
00	0.23	0.27	0.04	07635	I	MUDSTONE	CARB. BLK SOFT
00	0.27	0.61	0.34	07635	I	COAL	C-2 FE STAIN
00	0.61	0.64	0.03	07635	I	COAL	C-6
00	0.64	0.65	0.01	07635	I	CLAY	LT. BN SOFT
00	0.65	0.68	0.03	07635	I	COAL	C-6 MINOR THIN C1 BANDS
00	0.68	0.96	0.28	07635	I	COAL	C-1
00	0.96	0.98	0.02	07635	I	COAL	C-5
00	0.98	1.47	0.49	07635	I	COAL	C-2
00	1.47	1.59	0.12	07635	I	MUDSTONE	DK. GR. SOFT, CONTORTED BEDDING

\* DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85049

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	1.59	1.62	0.03	07635	I	COAL	C-5 VERY HARD
00	1.62	1.76	0.14	07635	I	COAL	C-1
00	1.76	1.91	0.15	07635	I	COAL	C-6 COAL (C6) TO CARB MUDSTONE, ABUNDANT C1 STRINGERS.
00	1.91	2.13	0.22	07636	I	COAL	C-2
00	2.13	2.28	0.15	07636	I	COAL	C-3
00	2.28	2.30	0.02	07636	I	COAL	C-6 SOFT, CLAY MIXTURE
00	2.30	2.65	0.35	07636	I	COAL	C-2 MOD. SOFT.
00	2.65	2.70	0.05	07636	I	MUDSTONE	LT. BN SOFT

\* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: YRC85049

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	2.70	2.89	0.19	07636	I	COAL	C-2 HIGHLY SHEARED, POWDERY POLISHED SURFACE.
00	2.89	3.04	0.15	07636	I	COAL	C-1 MOD. HARD
00	3.04	4.85	1.81	07637	I	COAL	C-1 VERY HARD, ABUNDANT FE STAIN.
00	4.85	5.10	0.25		I	MUDST	CARB. DK. GY MINOR COALY STRINGERS AND ABUNDANT PLAN T FOSSILS THROUGHOUT. BECOMES MORE SILTY Y WITH DEPTH.

\* DENOTES MEASURED BCA  
NEWPAGE



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRTRC85050

DATE - 12/17/85

- HISTORY -

START DATE - 10/05/85  
END DATE - / /

CONTRACTOR -  
GEOLOGIST - BC & BVDB

OPERATOR -  
SURVEYOR -

REMARKS - INCREMENTAL SAMPLE

- LOCATION -

PROVINCE - BC  
ELEVATION - 1808.66

ZONE - 9  
NORTHING - 6344295.00  
EASTING - 505751.56

LICENCE/LEASE NUMBER -

LATITUDE - 571437  
LONGITUDE - 1285417

- ORIENTATION -

LENGTH - 5.10  
SIZE WIDTH - 0.0  
SIZE HEIGHT - 0.0

INCLINATION - 0.0  
AZIMUTH - 0.0

ROOF STRIKE - 0  
ROOF DIP - 0  
ROOF DIR -

FLOOR STRIKE - 0  
FLOOR DIP - 0  
FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

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85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85050

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	0.25	0.25		I	MUDST	DK.GY MODERATELY HARD, CONCOIDAL FRACTURE AS RUPT CONTACT WITH UNDERLYING COAL SEAM.
00	0.25	0.41	0.16	07638	I	COAL	C-2
00	0.41	0.45	0.04	07638	I	COAL	C-4
00	0.45	0.48	0.03	07638	I	MUDSTONE	CLY, DK.GY CLAYEY
00	0.48	0.58	0.10	07638	I	COAL	C-2 APPROACHING C-1.
00	0.58	0.60	0.02	07638	I	CLAY	LT.GY SOFT
00	0.60	0.90	0.30	07638	I	COAL	C-2
00	0.90	0.91	0.01	07638	I	CLAY	M.GY

\* DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85050

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.91	1.73	0.82	07638	I	COAL	C-1 MINOR FE STAIN ON CLEAT MAINLY LOWER 0.3M, NO MINERALS APP.
00	1.73	1.82	0.09	07638	I	MUDSTONE	CARB SOFT, OCC. COAL STRINGERS, LENTICULAR APPEARANCE.
00	1.82	1.86	0.04	07638	I	COAL	C-2 CONTAINS ABUNDANT VERTICAL CALCITE INFILL FRACTURE
00	1.86	1.87	0.01	07638	I	COAL	C-6
00	1.87	1.96	0.09	07638	I	COAL	C-1 AS ABOVE WITH ANKERITE AND/OR SIDERITE ON CLEAT.
00	1.96	2.05	0.09	07638	I	MUDSTONE	CARB, DK.GY ABUNDANT VERY THIN COAL STRINGERS.
00	2.05	2.34	0.29	07638	I	COAL	C-2
00	2.34	2.44	0.10	07638	I	COAL	C-2 HIGHLY SHEARED, POLISHED.

\* DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85050

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	2.44	2.46	0.02	07639	I	SILTSTONE	LT. BN LENTICULAR LESS THAN 15CM DIAMETER, VERY HARD.
00	2.46	2.50	0.04	07639	I	COAL	C-2
00	2.50	2.51	0.01	07639	I	MUDSTONE	DK. BN
00	2.51	2.58	0.07	07639	I	COAL	C-2 SHEARED
00	2.58	2.62	0.04	07639	I	COAL	C-6, DK. BN MUDDY
00	2.62	2.66	0.04	07639	I	COAL	C-1
00	2.66	2.71	0.05	07639	I	MUDSTONE	CARB. DK. GY MOD. SOFT
00	2.71	2.81	0.10	07640	I	COAL	C-2 HIGHLY OXIDIZED, ABUNDANT FE STAIN, MODERATELY SOFT.

\* DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 4

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85050

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	2.81	5.21	2.40	07640	I	COAL	C-1 VERY HARD, ABUNDANT RUST STAIN.
00	5.21	5.46	0.25		I	MUDST.	CARB. DK. GY MINOR COALY STRINGERS AND ABUNDANT PLANT FOSSILS THROUGHOUT, BECOMES MORE SILTY WITH DEPTH.

\* DENOTES MEASURED BCA  
NEWPAGE

===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRTRC85051

DATE - 12/17/85

- HISTORY -

START DATE - 10/05/85  
END DATE - / /

CONTRACTOR -  
GEOLOGIST - BC & BVDB

OPERATOR -  
SURVEYOR -

REMARKS - INCRIMENTAL SAMPLE

- LOCATION -

PROVINCE - BC  
ELEVATION - 1805.78

ZONE - 9  
NORTHING - 6344318.00  
EASTING - 505791.50

LICENCE/LEASE NUMBER -

LATITUDE - 571438  
LONGITUDE - 1285415

- ORIENTATION -

LENGTH - 3.36  
SIZE WIDTH - 0.0  
SIZE HEIGHT - 0.0

INCLINATION - 0.0  
AZIMUTH - 0.0

ROOF STRIKE - 0  
ROOF DIP - 0  
ROOF DIR -

FLOOR STRIKE - 0  
FLOOR DIP - 0  
FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

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85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85051

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	0.25	0.25	07641	I	COAL	C-2 MINOR RUST ON CLEAVAGE AND BEDDING, OCC MINERAL STAINING (APPEARS MORE CONTAI NED IN VITRINITE BANDS), MODERATELY HAR D.
00	0.25	0.30	0.05	07641	I	MUDSTONE	CARB SOFT, OCCASIONAL THIN VITRINITE BANDS, MINOR CLAY PARTINGS, BEDDING APPEARS TO BE LENTICULAR.
00	0.30	0.62	0.32	07641	I	COAL	C-2 TO C1, AS ABOVE.
00	0.62	0.65	0.03	07641	I	MUDSTONE	CARB MINOR ICE PARTICLES, LENSES OUT LATERAL LY, MODERATELY SOFT, OCC. C-1 BANDS.
00	0.65	1.10	0.45	07641	I	COAL	C-2 TO C1, AS ABOVE.
00	1.10	1.17	0.07	07641	I	MUDSTONE	MUDSTONE & COAL INTERBEDDED, LIGHTLY CO NTORTED BEDDING, APPEARS AS SHEAR ZONE, LENSES OF MUDSTONE.
00	1.17	1.28	0.11	07641	I	COAL	C-3 SHEARED, HIGHLY POLISHED.

\* DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85051

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	1.28	1.76	0.48	07642	I	COAL	C-1 HARD, MINOR FE STAIN AND ANKERITE ON CL EATS.
00	1.76	1.77	0.01	07642	I	COAL	APPEARS TO HAVE AN OOLITIC TEXTURE (HEM ATITE)
00	1.77	3.38	1.61	07642	I	COAL	C-1 ABUNDANT VEINS TOP 10CM, FE STAIN INCRE ASES DOWN, TWO STEEP (55 DEGREES - 75 D EGREES) FRACTURE PLANES WITHIN COAL (LE SS THAN 1CM THICK), CLAY FILLED.
00	3.38	3.63	0.25		I	MUDSTONE	CARB ABUNDANT PLANT MATERIAL, OCC. THIN COAL Y STRINGERS MOD. SOFT.

\* DENOTES MEASURED BCA  
NEWPAGE

===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRTRC85052

DATE - 12/17/85

- HISTORY -

START DATE - / /  
END DATE - / /

CONTRACTOR -  
GEOLOGIST - BC & BVDB

OPERATOR -  
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC  
ELEVATION - 1801.00

ZONE - 9  
NORTHING - 6344312.00  
EASTING - 505834.37

LICENCE/LEASE NUMBER -

LATITUDE - 571438  
LONGITUDE - 1285412

- ORIENTATION -

LENGTH - 0.00  
SIZE WIDTH - 0.0  
SIZE HEIGHT - 0.0

INCLINATION - 0.0  
AZIMUTH - 0.0

ROOF STRIKE - 0  
ROOF DIP - 0  
ROOF DIR -

FLOOR STRIKE - 0  
FLOOR DIP - 0  
FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

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# GULF CANADA RESOURCES INC.

## SEAM DETAIL

## COAL DIVISION MOUNT KLAPPAN PROJECT

TRUE THICKNESS

DATA SOURCE: KPN LR TRC85052 SEAM : 1 INTERVAL(M) : 0.00 - 4.80 ELEVATION(M) : 1801.0  
 GEOLOGIST : BC & BVDB SCALE: DATE : JAN 06/86 DRAWING NO. :

SEAM COMP.	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES		% REC.	SAMPLE ID		COAL/ROCK TOTAL	COAL QUALITY A.D.B.							
			ROCK	COAL		SIMP	COMP		COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL. VAL MJ/KG
	0.00	↑														
				1.20	100.0	7843	7843	1.27 / 0.24 1.51	1.41	28.32	8.91	83.38	0.41	23.07	—	
	1.51			0.79	100.0	7844	7844	1.18 / 0.08 1.22	0.88	24.04	8.22	88.88	0.45	25.48	—	
	2.73			0.37												
	4.80	↓		2.07	100.0	7845	7845	2.07 / 0.00 2.07	3.21	10.89	7.49	78.61	0.49	29.48	—	

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPW BLOCK: LR DATA SOURCE: TRC85052

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	0.40	0.40	07643	I	COAL	C-2 2 OR 3 1CM MUDSTONE BANDS WITHIN, COVERED AND DISTURBED, HARD TO SEE.
00	0.40	1.20	0.80	07643	I	COAL	C-2 GOOD CLEAT, MINOR FE STAIN, FRIABLE IN PLACES, APPROACHING CI IN PLACES.
00	1.20	1.29	0.09	07643	I	MUDSTONE	GY SOFT, GREY - BROWN.
00	1.29	1.32	0.03	07643	I	COAL	C-1 FE STAINING.
00	1.32	1.33	0.01	07643	I	MUDSTONE	DK. GY M. HARD.
00	1.33	1.37	0.04	07643	I	COAL	C-4 VERY SOFT.
00	1.37	1.51	0.14	07643	I	SILTSTONE	M. GY HARD, CONSOLIDATED, LOCALLY THICKENED.
00	1.51	1.67	0.16	07644	I	COAL	C-3 FRIABLE, SOFT.
00	1.67	1.70	0.03	07644	I	COAL	C-6 MUDDY, FE STAINED.

\* DENOTES MEASURED BCA

85/12/12

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPW BLOCK: LR DATA SOURCE: TRC85052

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	1.70	2.05	0.35	07644	I	COAL	C-2 PARTIALLY SHEARED, FE STAINED.
00	2.05	2.07	0.02	07644	I	COAL	C-6 MUDDY, SPOIL APPEARANCE.
00	2.07	2.30	0.23	07644	I	COAL	C-2
00	2.30	2.34	0.04	07644	I	MUDSTONE	CARB. M. GY COALY, MODERATELY HARD.
00	2.34	2.67	0.33	07644	I	COAL	C-2 SHEARED, FE STAINED, APPEARS LOWER QUALITY DUE TO SHEARING, MINOR MUDDY BANDS.
00	2.67	2.71	0.04	07644	I	COAL	C-2
00	2.71	2.73	0.02	07644	I	MUDSTONE	BN MODERATELY HARD, FE STAINED.
00	2.73	3.65	0.92	07645	I	COAL	C-2 SHEARED PERIODICALLY, FRIABLE, MINOR MUDSTONE BANDS WITHIN; POSSIBLY LOWER QUALITY WHERE HIGHLY SHEARED.

\* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: TRC85052

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	3.65	4.80	1.15	07645	1	COAL	C-1 FE STAINING, VERY HARD.
00	4.80	5.05	0.25		1	MUDST	CARB. DK. GY MINOR COALY STRINGERS AND ABUNDANT PLANT FOSSILS THROUGHOUT, BECOMES MORE SILTY WITH DEPTH.

\* DENOTES MEASURED BCA  
NEWPAGE

APPENDIX I

LOST-FOX AREA  
1985 MEASURED SECTIONS

GULF CANADA RESOURCES INC. - COAL DIVISION  
11/NOV/85 PROJECT DATA SOURCE SUMMARY PAGE 1

DATA SOURCE	LOCATION		ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
	NORTHING	EASTING					
KPNLROTC85001	6345650.0	506550.0	1478.0	32.0			
KPNLROTC85002	6344650.0	506730.0	1737.0	24.0			
KPNKHOTC85004	6342370.0	510895.0	1943.0	98.0			
KPNKHOTC85005	6342465.0	511155.0	1870.0	93.0			
KPNLROTC85014	6342650.0	506550.0	1645.0	61.0			

----- GULF CANADA RESOURCES INC. -----

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLROTC85001

DATE - 10/15/85

- HISTORY -

START DATE - 06/29/85  
END DATE - 06/29/85

CONTRACTOR -  
GEOLOGIST - MACLEOD

OPERATOR - GULF CANADA  
SURVEYOR -

REMARKS - KLAPPAN SEQUENCE

- LOCATION -

PROVINCE - BC  
ELEVATION - 1478.00

ZONE - 9  
NORTHING - 6345650.00  
EASTING - 506550.00

LICENCE/LEASE NUMBER - 7169

LATITUDE - 571521  
LONGITUDE - 1285329

- ORIENTATION -

LENGTH - 32.00

INCLINATION - 0.0  
AZIMUTH - 0.0

SIZE WIDTH - 0.0  
SIZE HEIGHT - 0.0

ROOF STRIKE - 0  
ROOF DIP - 0  
ROOF DIR -

FLOOR STRIKE - 0  
FLOOR DIP - 0  
FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

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85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: OTC85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	0.00	4.00	4.00			SANDSTONE	MG BEDDING 050/30SE 031/25SE
* 90	4.00	6.00	2.00			MUDSTONE	INTERBEDDED; 12CM BED FINE LAMINAE SS; NO CONCRETIONS; MUDST FINE LAMINATED C ONCRETIONARY (BN WEATHERING); TOPS UP I NDICATORS (UPRIGHT)
* 90	6.00	16.00	10.00			MUDSTONE	TIGER STRIPE ORANGE BROWN CONCRETIONARY BANDS (MORE CONTINUOUS DOWNSECTION); A T TOP BANDS CLOSE TOGETHER THINNER; MID DLE BANDS 30CM THICK FURTHER APART; BAS E THINNER CLOSER SPACED; CONTINUOUS BAN DS
* 90	16.00	17.00	1.00			COAL	SM CARBONACEOUS BANDS; 1CM VITRAIN BAN DS; 10-20CM BN WEATHERED MUD; 10CM MUDS T WITH PLANT FOSSILS: MILSONNIS PTEROPH YLLUM rectanfare PITYPHYLLUM nordenskiöldii CLADOPHLEBIS virginianensis CZEKANOW SKIA rigida BAIERA furcata
* 90	17.00	17.60	0.60			MUDSTONE	CARB

\* DENOTES MEASURED BCA

85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: OTC85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	17.60	17.65	0.05			MUDSTONE	ORANGE WEATHERED; BEDDING 060/36SE 060/ 28SE
* 90	17.65	17.68	0.03			MUDSTONE	GY GREY-BROWN
* 90	17.68	17.73	0.05			MUDSTONE	ORANGE-GREY WEATHERING; PARTLY COVERED
* 90	17.73	17.74	0.01			SANDSTONE	
* 90	17.74	20.74	3.00			SANDSTONE	MG.MAS.XBDC CROSS BEDDING INDICATES UP RIGHT BEDS; REDDISH BROWN WEATHERING; NO MUDSTONE C LASTS; SHARP LOWER CONTACT
* 90	20.74	30.74	10.00			SANDSTONE	SLTY.LAM ALTERNATING ORANGE GREY WEATHERING; BEC OMES FINE GRAINED SS THEN MUDST WITH NO DULES (DIFFERENTIAL WEATHERING) DOWNSEC TION; BEDDING 050/30SE 085/40SE; AT BAS E FINER NO MODULES IN MUDST WORMBURROWS (UPRIGHT BEDS)
* 90	30.74	32.74	2.00			OVERBURDEN	TRUE THICKNESS NOT MEASURED

\* DENOTES MEASURED BCA

NEWPAGE

----- GULF CANADA RESOURCES INC. -----

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLROTC85002

DATE - 10/15/85

- HISTORY -

START DATE - 06/30/85  
END DATE - 06/30/85

CONTRACTOR -  
GEOLOGIST - BUHAY

OPERATOR - GULF CANADA  
SURVEYOR -

REMARKS - KLAPPAN SEQUENCE

- LOCATION -

PROVINCE - BC  
ELEVATION - 1737.00

ZONE - 9  
NORTHING - 6344650.00  
EASTING - 506730.00

LICENCE/LEASE NUMBER - 7151

LATITUDE - 571448  
LONGITUDE - 1285319

- ORIENTATION -

LENGTH - 24.00

INCLINATION - 0.0  
AZIMUTH - 0.0

SIZE WIDTH - 0.0  
SIZE HEIGHT - 0.0

ROOF STRIKE - 0  
ROOF DIP - 0  
ROOF DIR -

FLOOR STRIKE - 0  
FLOOR DIP - 0  
FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

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85/11/01

## GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: OTC85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
• 90	0.00	4.00	4.00			SANDSTONE	FG. BN. LAM ALTERNATING SS AND MDST; FLASER BEDDING ; MUD DRAPES; HIGHLY FRACTURED; SHARP C CONTACT WITH OVER AND UNDERLYING UNITS; FOSSILS: NILSSONIA CZEKANOWSKIA SPHENOP TERSIS CONTOPTERIS
• 90	4.00	7.00	3.00			SANDSTONE	FG. BN. LAM ALTERNATING SS AND MDST; FLASER BEDDING ; MUD DRAPES; DOMINANT LITHOLOGY IS COM PETENT BROWN AND ORANGE WEATHERED SANDS TONE
• 90	7.00	11.00	4.00			SANDSTONE	FG. BN. LAM SAME AS ABOVE
• 90	11.00	11.63	0.63			COAL	MAY BE J SEAM; COAL VERY CARBONACEOUS
• 90	11.63	16.63	5.00			MUDSTONE	FG. BLK. LAM TIGER STRIPE UNIT-ALTERNATING ORANGE AN D BLACK LAMINATIONS; NO CONCRETIONS SEE N IN ORANGE BANDS
• 90	16.63	19.63	3.00			SANDSTONE	MAS THIN LAMINATIONS OF MUD; ORANGE BROWN M EATHERING; ARKOSIC SANDSTONE

• DENOTES MEASURED BCA

85/11/01

## GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: OTC85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
• 90	19.63	22.13	2.50			MUDSTONE	FG. BLK. LAM TIGER STRIPE UNIT- STRIPES GET THICKER TOWARDS TOP AND BOTTOM; MOST IS COVERED UP
• 90	22.13	23.63	1.50			SANDSTONE	MG. GY

• DENOTES MEASURED BCA  
NEWPAGE

----- GULF CANADA RESOURCES INC. -----

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNKHOTC85004

DATE - 10/15/85

- HISTORY -

START DATE - 07/07/85

END DATE - 07/07/85

CONTRACTOR -

GEOLOGIST - MACLEOD

OPERATOR - GULF CANADA

SURVEYOR -

REMARKS - EAST END OF KNOOPH HILL ABOVE THE ANTICLINE; MIDDLE MALLOCH SEQUENCE

- LOCATION -

PROVINCE - BC

ELEVATION - 1943.00

LICENCE/LEASE NUMBER - 7138

ZONE - 9

NORTHING - 6342370.00

EASTING - 510895.00

LATITUDE - 571334

LONGITUDE - 1284910

- ORIENTATION -

LENGTH - 98.00

INCLINATION - 0.0

AZIMUTH - 0.0

SIZE WIDTH - 0.0

SIZE HEIGHT - 0.0

ROOF STRIKE - 0

ROOF DIP - 0

ROOF DIR -

FLOOR STRIKE - 0

FLOOR DIP - 0

FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

-----

85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPM BLOCK: KH DATA SOURCE: OTC85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	0.00	1.00	1.00			MUDSTONE	CARB. BLK MINOR COAL SPOIL; TRUE THICKNESS NOT MEASURED
* 90	1.00	1.83	0.83			SANDSTONE	FG. MAS FRESH SURFACE LIGHT GREY-BROWN; WEATHERED SURFACE BROWN-GREY; LOWER PART OF UNIT BECOMES FINELY LAMINATED WITH DARK GREY MUDSTONE LAMINAE
* 90	1.83	2.26	0.43			MUDSTONE	M. GY. LAM ALTERNATING ORANGE AND BROWN WEATHERED SURFACE AND DISCONTINUOUS THICK ORANGE WEATHERED LENSES; ABUNDANT CZEKANOWSKIA C.F. RIGIDA
* 90	2.26	3.23	0.97			SANDSTONE	FG. MAS WEATHERED SURFACE BROWN-GREY; FRESH SURFACE LIGHT GREY-BROWN; BLOCKY FRACTURE PATTERN
* 90	3.23	4.16	0.93			MUDSTONE	LAM WEATHERS DISCONTINUOUSLY ORANGE AND BLACK; HIGHLY FRACTURED; BEDS 1CM THICK; FRESH SURFACE IS MOTTLED ORANGE-BROWN; SHARP LOWER CONTACT

\* DENOTES MEASURED BCA

85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPM BLOCK: KH DATA SOURCE: OTC85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	4.16	4.75	0.59			SANDSTONE	FG. MAS WEATHERS BROWN-GREY; FRESH SURFACE LIGHT GREY-BROWN; BLOCK FRACTURE PATTERN
* 90	4.75	6.15	1.40			MUDSTONE	M. GY. LAM ALTERNATING ORANGE BROWN WEATHERING WITH DISCONTINUOUS THICK ORANGE LENSES UP TO 14CM; VERY RICH IN CZEKANOWSKIA C.F. RIGIDA; SHARP LOWER CONTACT
* 90	6.15	9.65	3.50			SANDSTONE	FG. MAS FRESH SURFACE LIGHT GREY BROWN; WEATHERED SURFACE BROWN-GREY; UPPER PART OF UNIT HAS THIN BEDS OF ALTERNATING ORANGE BROWN SANDSTONE
* 90	9.65	19.65	10.00			OVERBURDEN	
* 90	19.65	20.65	1.00			COAL	BLK SPOIL; ACTUAL THICKNESS NOT MEASURED; OVERBURDEN CONSISTS OF SPOIL
* 90	20.65	26.99	6.34			OVERBURDEN	OVERBURDEN CONSISTS OF SPOIL AND CARBONACEOUS MUDSTONE; HIGHLY FRACTURED

\* DENOTES MEASURED BCA

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85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: KH DATA SOURCE: OTCB5004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	26.99	27.09	0.10			SANDSTONE	MG.MOD FRESH AND WEATHERED SURFACE IS GREY BROWN; BEDDING 208/24W; BEDDING THINS TO 0.5CM NEAR BASE
* 90	27.09	27.68	0.59			SILTSTONE	M.GY SHARP UPPER CONTACT
* 90	27.68	31.68	4.00			OVERBURDEN	OVERBURDEN CONSISTS OF ORANGE WEATHERED HIGHLY FRACTURED SILTSTONE AND CARBONACEOUS MUDSTONE
* 90	31.68	35.68	4.00			SANDSTONE	MG.MAS WEATHERS ORANGE-BROWN; FRESH SURFACE IS GREY-BROWN; MID-UNIT HAS 8CM CHERT PEBBLE BAND WITH PEBBLES .5CM; DOWNSECTION THE CHERT PEBBLES BECOME DISCONTINUOUS; QTZ AND ANKERITE; ABUNDANT PLANT FOSSILS
* 90	35.68	38.88	3.20			CONGLOMERATE	PR.XBDG PATCHY DISTRIB. OF VARIOUS SIZED CLASTS; WELL ROUNDED GREY GREEN BLACK CLASTS; NO ORIENTATION AXIS; CLASTS INC SIZE DOWNSECT.; MED SCALE LOW ANGLE XBEDS; GRADES GRANULE TO PEBBLE DOWNSECT.; TOPS UP; CLAST TO MATRIX SUPPORTED

\* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 4

PROJECT: KPN BLOCK: KH DATA SOURCE: OTCB5004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	38.88	39.13	0.25			SANDSTONE	YCG.PR PEBBLY SANDSTONE (MATRIX SUPPORTED); GR ADADITIONAL UPPER CONTACT; LARGE TREES 15 CM DIAMETER
* 90	39.13	49.66	10.53			CONGLOMERATE	PR AS ABOVE; RANGES BETWEEN MATRIX AND CLAST SUPPORTED; IN LOW PART OF UNIT CLASTS ARE RELATIVELY WELL SORTED; MATRIX IS FE STAINED MED GRAINED SS; CLASTS AVG 1CM; SUBROUNDED BLK CHERT ALSO WHITE AND GREEN
* 90	49.66	52.66	3.00			OVERBURDEN	LOOKS LIKE CONGLOMERATE AS ABOVE
* 90	52.66	54.66	2.00			OVERBURDEN	M.GY.LAM OVERBURDEN CONSISTS OF SILTSTONE; WEATHERED ORANGE; ABUNDANT PLANTS ESPECIALLY CZEKANOWSKIA CF. RIGIDA AND NILSSONIA SP.
* 90	54.66	57.66	3.00			OVERBURDEN	NOT MEASURED; LOOKS LIKE HIGHLY FRACTURED ORANGE BLACK WEATHERED MUDSTONE SILTSTONE AND FINE GRAINED SANDSTONE

\* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 5

PROJECT: KPH BLOCK: KH DATA SOURCE: OTCB5004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	57.66	61.16	3.50			SANDSTONE	FG.M.GY WEATHERS GREY; MINOR THIN LAMINAE OF ORANGE WEATHERING MUDSTONE (GREY FRESH); BEDDING 200/28H; LAMINAE INCREASE IN THICKNESS UPWARDS TO 2CM
* 90	61.16	65.16	4.00			OVERBURDEN	OVERBURDEN CONSISTS OF MEDIUM-FINE GRAINED SANDSTONE; MED GREY; WEATHERS GREY-BROWN
* 90	65.16	70.16	5.00			OVERBURDEN	HIGHLY FRACTURED MEDIUM GREY SANDSTONE
* 90	70.16	70.66	0.50			COAL	SPOIL; TRUE THICKNESS NOT MEASURED
* 90	70.66	76.66	6.00			OVERBURDEN	NOT MEASURED; OVERBURDEN IS BROWN GREY SILTSTONE AND FINE GRAINED SANDSTONE
* 90	76.66	79.66	3.00			MUDSTONE	INTERLAMINATED WITH GREY BROWN SILTSTONE; AVERAGE BEDDING .5CM; NO PLANT FOSSILS
* 90	79.66	80.11	0.45			SANDSTONE	FG.MAS GREY BROWN WEATHERED AND FRESH; SHARP LOWER CONTACT
* 90	80.11	80.41	0.30			SILTSTONE	M.GY.MAS WEATHERS ORANGE

\* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 6

PROJECT: KPH BLOCK: KH DATA SOURCE: OTCB5004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	80.41	84.41	4.00			SANDSTONE	FG.MAS WEATHERS GREY BROWN
* 90	84.41	88.41	4.00			MUDSTONE	THIN INTERLAMINAE OF BLACK MUDSTONE GREY SILTSTONE AND GREY BROWN FINE GRAINED SANDSTONE WITH MINOR FE BANDING ESP. OF MUDSTONE ALL BEDS <.5CM; SOME ORANGE WEATHERED MODULES; BEDDING 126/25S
* 90	88.41	89.41	1.00			SANDSTONE	FG.GY.MAS WEATHERS GREY
* 90	89.41	92.41	3.00			OVERBURDEN	OVERBURDEN CONSISTS OF ORANGE WEATHERED BROWN GREY MUDSTONE SILTSTONE AND SANDSTONE
* 90	92.41	95.41	3.00			SANDSTONE	FG.GY WITH MINOR THIN ORANGE WEATHERED PALE BROWN MUDSTONE BANDS EVERY .1CM TO .5CM
* 90	95.41	95.56	0.15			SANDSTONE	VFG.GY WEATHERS ORANGE; SHARP UPPER CONTACT; DISCONTINUOUS BANDING; INTERLAMINATED WITH ORANGE WEATHERING GREY SILTSTONE
* 90	95.56	97.56	2.00			SANDSTONE	FG.M.GY.MAS SHARP LOWER CONTACT

\* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: KH DATA SOURCE: 07C85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
*	90	97.56	97.66	0.10		SILTSTONE	M.GY WEATHERS ORANGE; VERY COMPETENT
*	90	97.66	99.66	2.00		SANDSTONE	YFG,M.GY
*	90	99.66	99.74	0.08		SANDSTONE	YFG,M.GY.LAM WEATHERS ORANGE
*	90	99.74	99.94	0.20		SANDSTONE	YFG,M.GY.LAM WEATHERS GREY

\* DENOTES MEASURED BCA  
NEWPAGE

===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNKHOTC85005

DATE - 10/15/85

- HISTORY -

START DATE - 07/08/85

END DATE - 07/08/85

CONTRACTOR -

GEOLOGIST - MACLEOD

OPERATOR - GULF CANADA

SURVEYOR -

REMARKS - SECTION DIRECTLY BELOW ANTICLINE; LOWER MALLOCH SE  
QUENCE

- LOCATION -

PROVINCE - BC

ELEVATION - 1870.00

LICENCE/LEASE NUMBER - 7138

ZONE - 9

NORTHING - 6342465.00

EASTING - 511155.00

LATITUDE - 571337

LONGITUDE - 1284855

- ORIENTATION -

LENGTH - 93.00

INCLINATION - 0.0

AZIMUTH - 0.0

SIZE WIDTH - 0.0

SIZE HEIGHT - 0.0

ROOF STRIKE - 0

ROOF DIP - 0

ROOF DIR -

FLOOR STRIKE - 0

FLOOR DIP - 0

FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

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## GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: KH DATA SOURCE: OTCB5005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	0.00	6.00	6.00			SANDSTONE	MG. M. GY. MAS WEATHERS BROWN-GREY; FE STAINING 5%; QY Z ALONG FRACTURES; MINOR ORANGE WEATHER ING BANDS; FOSSILS: CLADOPHLEBIS virgin iensis CZEKANOWSKIA rigida PODOZAMITES GINGKO lepida PTEROPHYLLUM rectangulare
* 90	6.00	6.80	0.80			MUDSTONE	M. GY. MAS VERY COMPETENT; THINLY LAMINATED IN SOME SPOTS; WEATHERS ORANGE; SHARP LOWER CO NTACT; MANY PLANT FOSSILS AS LISTED ABO VE
* 90	6.80	7.05	0.25			SILTSTONE	GY. VTHNB MINOR DISCONTINUOUS; ORANGE MOTTLED WEA THERING; BANDS .25 TO 2CM THICK MANY PL ANT FOSSILS AS LISTED ABOVE
* 90	7.05	7.58	0.53			SANDSTONE	FG WEATHERS ORANGE GREY-BROWN; FRESH SURFA CE GREY-BROWN; BEDDING THINS TO 1CM TOM ARDS BASE; AMOUNT ORANGE WEATHERING INC REASES TOWARDS BASE; NO PLANTS NOTED
* 90	7.58	8.08	0.50			SILTSTONE	M. GY. MAS COMPETENT; WEATHERS MOTTLED ORANGE BROW N-GREY

\* DENOTES MEASURED BCA

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## GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: KH DATA SOURCE: OTCB5005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	8.08	9.88	1.80			SANDSTONE	FG. LT. GY. THNB WEATHERS GREY-BROWN; FE STAIN 5-10%; MI NOR ORANGE WEATHERING BANDS OF SAME LIT HOLOGY 1CM THICK; MANY PLANTS AS LISTED ABOVE
* 90	9.88	13.38	3.50			OVERBURDEN	
* 90	13.38	14.78	1.40			MUDSTONE	CARB SPDIL WITH COAL FLECKS.
* 90	14.78	15.66	0.88			MUDSTONE	SLTY. VTHNB DARK GREY-BROWN; WEATHERS DARK SAME MIT H ORANGE BANDING; VERY FINE INTERBEDS O F SILTSTONE AND MUDSTONE; SHARP LOWER C ONTACT
* 90	15.66	23.66	8.00			SANDSTONE	SLTY. FG. BN. XBDG WEATHERS BROWN WITH ORANGE BANDS; BEDDI NG VARIES; MASSIVE WEATHERED ORANGE THI N BEDDED 12CM CLOSE SPACED AT TOP IN MI DOLE 1.5M THIN AND MORE SILTSTONE AT BA SE

\* DENOTES MEASURED BCA



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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: KH DATA SOURCE: OTC85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	23.66	25.66	2.00			MUDSTONE	SSY.GY WEATHERS STRIPED ORANGE 1CM THICK SPACE D AT 5CM WITH GREY SANDSTONE INCREASES TOWARDS BOTTOM; SHARP LOWER CONTACT
* 90	25.66	25.99	0.33			MUDSTONE	BLK RECESSIVE; WEATHERS BLACK; HIGHLY FRACTURED WHICH OBSCURES BEDDING; AT BASE MUDSTONE BAND WEATHERED ORANGE
* 90	25.99	26.39	0.40			SANDSTONE	FG.BN.THNB SAME AS SANDSTONE ABOVE
* 90	26.39	26.69	0.30			SANDSTONE	VFG.M.GY.MAS WEATHERS ORANGE; NO PLANT FOSSILS NOTED
* 90	26.69	28.29	1.60			SANDSTONE	VFG.LY.GY WEATHERS UNEVEN ORANGE AND GREY; MANY PLANTS; CZEKANOWSKIA CLADOPHLEBIS VIRGINIENSIS SOME COALIFIED SOME WITH IRRIDESCENT BLUE SHEEN
* 90	28.29	38.29	10.00			OVERBURDEN	NOT MEASURED
* 90	38.29	42.29	4.00			MUDSTONE	CARB SPOIL WITH MINOR COAL FLECKS; ROOF OF MUDSTONE NOT REACHED.

\* DENOTES MEASURED BCA

85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 4

PROJECT: KPN BLOCK: KH DATA SOURCE: OTC85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	42.29	47.29	5.00			SANDSTONE	FG.M.GY WEATHERS GREY-BROWN; SAME AS GREY SANDSTONE ABOVE; VERY LARGE TREE BRANCHES
* 90	47.29	57.29	10.00			OVERBURDEN	NOT MEASURED
* 90	57.29	58.29	1.00			MUDSTONE	CARB SPOIL; MINOR COAL FLECKS.
* 90	58.29	58.49	0.20			MUDSTONE	SSY.LAM VERY THINLY LAMINATED; FISSILE; WEATHERED AND FRESH GREY-BROWN; MINOR ORANGE STAINED LAMINAE; INTERLAMINATED MUDSTONE AND LIGHT GREY SANDSTONE; PLANTS
* 90	58.49	62.99	4.50			SANDSTONE	MG.M.GY WEATHERS GREY-BROWN; MASSIVE TOWARDS TOP MORE THINLY BEDDED TOWARDS BOTTOM WHICH IS ORANGE FE STAINED; MANY CZEKANOWSKIA ALIGNED PARALLEL TO BEDDING PLANES
* 90	62.99	63.29	0.30			MUDSTONE	M.GY WEATHERS ORANGE; HIGHLY FOSSILIFEROUS WITH PLANT HASH

\* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 5

PROJECT: KPN BLOCK: KH DATA SOURCE: OTC85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	63.29	67.09	3.80			SANDSTONE	FG.M.GY.THNB INTERBEDDED WITH GREY-BROWN MUDSTONE (W HIGH WEATHERS ORANGE WITH FISSILE RECESSIVE GREY MUDSTONE WITH GREY SILTSTONE ; FE BANDING MOSTLY IRREGULAR AMOUNT SANDSTONE INCREASES TOWARDS BASE; HIGHLY FRACTURED; PLANTS AND HASH
* 90	67.09	77.09	10.00			OVERBURDEN	NOT MEASURED
* 90	77.09	77.16	0.07			MUDSTONE	CARB. BLK TWO SMALL BANDS OF SUCH SEEN IN COVERED INTERVAL
* 90	77.16	83.16	6.00			OVERBURDEN	NOT MEASURED
* 90	83.16	87.16	4.00			SANDSTONE	FG.M.GY WEATHERS GREY-BROWN; MASSIVE AT TOP; TH IN BEDS TOWARDS BASE; AT BASE .5CM ORANGE WEATHERED BANDS
* 90	87.16	87.66	0.50			MUDSTONE	BLK HIGHLY FRACTURED; PARTLY COVERED
* 90	87.66	88.66	1.00			SANDSTONE	FG.GY.THNB SOME MINOR ORANGE WEATHERED BANDS
* 90	88.66	90.66	2.00			OVERBURDEN	

\* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: KH DATA SOURCE: OTC85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	90.66	93.20	2.54			COAL	BLK TFC85013; WITH INTERSPERSED BEDS OF CARBONACEOUS MUDSTONE AND LIGHT BROWN MUDSTONE

\* DENOTES MEASURED BCA  
 WEMPAGE

----- GULF CANADA RESOURCES INC. -----

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLROTC85014

DATE - 10/15/85

- HISTORY -

START DATE - 08/05/85  
END DATE - 08/05/85

CONTRACTOR -  
GEOLOGIST - STEWART

OPERATOR - GULF CANADA  
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC  
ELEVATION - 1645.00  
LICENCE/LEASE NUMBER - 7147

ZONE - 9  
NORTHING - 6342650.00  
EASTING - 506550.00  
LATITUDE - 571344  
LONGITUDE - 1285329

- ORIENTATION -

LENGTH - 61.00  
SIZE WIDTH - 0.0  
SIZE HEIGHT - 0.0

INCLINATION - 0.0  
AZIMUTH - 0.0

ROOF STRIKE - 0  
ROOF DIP - 0  
ROOF DIR -

FLOOR STRIKE - 0  
FLOOR DIP - 0  
FLOOR DIR -

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

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85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: OTC85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	0.00	0.24	0.24			SILTSTONE	GY.VTHNB WEATHERS RED-BROWN; BOUDINAGE NODULAR W EATHERING; TOP AND BOTTOM COVERED; INCR IN FOSSILS TO TOP; MUCH HASH; SM WOOD WITHIN BEDS; LG BRANCHES; PITYOPHYLLUM AIERA furcata MILSSONIA tenuicaulis
* 90	0.24	1.74	1.50			SILTSTONE	DK.GY.THNB INTERBEDDED SILTSTONE AND MUDSTONE, WEIT HER PREDOMINATES; BANDS 5-20CM THICK; S ILTSTONE WTHRS ORANGE; NODULAR; MINOR P LANT AND WOOD HASH PODOZAMITES AND M. T ENUICAULIS; MUDSTONE: TREE TRUNKS 15-50C M DIAMETER UPRIGHT THROUGH BEDS
* 90	1.74	2.09	0.35			SILTSTONE	DK.GY.THNB WTHRS ORANGE; BRANCHES AND ONE UPRIGHT TREE TRUNK APPROX 50CM BY 50CM
* 90	2.09	2.57	0.48			MUDSTONE	M.GY.VTHNB WTHRS GREY-BROWN; MINOR SURFICIAL FE ST AINING; PLANTS NOT OBSERVED
* 90	2.57	2.69	0.12			SILTSTONE	DK.GY WTHRS BROWN-RED; BOUDINAGE; NODULAR WEA THERING.

\* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: OTC85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	2.69	2.79	0.10			MUDSTONE	M.GY WTHRS W GREY; HIGHLY WEATHERED RECESSIV E
* 90	2.79	2.89	0.10			SILTSTONE	M.GY WTHRS ORANGE-BROWN; BOUDINAGE; NODULAR WEATHERING.
* 90	2.89	3.49	0.60			MUDSTONE	DK.GY DK GREY-BROWN; WTHRS ORANGE-GREY; MANY PLANTS AND HASH; MILSSONIA tenuicaulis PITYOPHYLLUM
* 90	3.49	4.99	1.50			MUDSTONE	M.GY.THNB WTHRS GREY-BROWN; MINOR FE STAINING; VE RY MINOR PLANTS; INCREASE IN SILTSTONE TOWARDS TOP; SILTSTONE WTHRS ORANGE;
* 90	4.99	5.24	0.25			SILTSTONE	DK.GY WITH DISTINCT MUDSTONE LAMINAE; SOME BO UDINAGE FEATURES; MAINLY PITYOPHYLLUM I N MUCH PLANT HASH
* 90	5.24	5.84	0.60			MUDSTONE	DK.GY.THNB WTHRS ORANGE-GREY; NO PLANTS SEEN; GRAD ES INTO UPPER SILTSTONE UNIT

\* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: OTC85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	5.84	5.99	0.15			SILTSTONE	M. GY. WTHRS ORANGE; MORE THICKLY BEDDED; MING R PLANT HASH
* 90	5.99	6.14	0.15			MUDSTONE	DK. GY. VTHNB BOTH FRESH AND WEATHERED SURFACES M-DK GREY-BROWN
* 90	6.14	8.64	2.50			SILTSTONE	M. GY. THNB INTERBEDDED WITH MUDSTONE (VERY THIN BEDS); SILTSTONE WTHRS ORANGE-RED; MUDSTONE WTHRS BROWN-GREY; SILTSTONE SHOWS BEDDING MORE THAN MUDSTONE; FINE PLANT HASH AT TOP; MINOR MOOD.
* 90	8.64	12.64	4.00			OVERBURDEN	COVERED INTERVAL; SURFICIAL M. GREY. MUDS TONE SHARDS SEEN
* 90	12.64	13.14	0.50			SANDSTONE	FG. M. GY. MAS WTHRS DUSTY BROWN; MODERATE FE STAINING OF GRAINS; MINOR QTZ IN FRACTURES; TOP AND BOTTOM NOT SEEN
* 90	13.14	13.64	0.50			OVERBURDEN	COVERED INTERVAL
* 90	13.64	13.94	0.30			MUDSTONE	CARB. BLK QUITE SHEARED; SURFICIAL SPOIL CONTAINS MUDSTONE WITH THIN COAL LAMINAE; C-4. T C-C-6 COAL; UNIT THICKNESS ESTIMATED

\* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: OTC85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	13.94	14.44	0.50			OVERBURDEN	COVERED INTERVAL
* 90	14.44	15.44	1.00			SANDSTONE	MG. M. GY. THNB WTHRS RUST; INTERBEDDED WITH SILTST (WTHRS BRIGHT ORANGE); SILTST (1-4CM) EVERY 2-20CM SOME DISCONTINUOUS; ASYMETRIC SS RIPPLES LOAD CASTS HRMBUR X-BEDDING SILTST RIP UP CLASTS SILTST DRAPES; TOP AND BOT NOT SEEN; LATERAL EQUIV: MDST STRNGR
* 90	15.44	18.44	3.00			OVERBURDEN	COVERED INTERVAL
* 90	18.44	19.29	0.85			SANDSTONE	FG. M. GY. MB WTHRS RED-ORANGE; MODERATE FE STAINING OF GRAINS; MINOR QTZ IN FRACTURES; NO PLANTS PRESERVED
* 90	19.29	19.67	0.38			MUDSTONE	M. GY. WTHRS ORANGE-BROWN; FE STAINED; QTZ INFILLS FRACTURES; CONTAINS SM BIVALVES
* 90	19.67	20.57	0.90			MUDSTONE	M-DK. GY. MAS WTHRS BROWN; LT BROWN SILTSTONE STRINGERS INCREASE TO TOP; 40CM FROM BASE HAVE HELMINTHOPSIS
* 90	20.57	20.84	0.27			SILTSTONE	SSY. LT. GY. WTHRS SAME; SAND CONCENTRATED TO APPROX 4CM BANDS ACROSS UNIT

\* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 5

PROJECT: KPN BLOCK: LR DATA SOURCE: OYC85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	20.84	21.74	0.90			SANDSTONE	FG.LT.GY INTERBEDDED WITH SILTSTONE AND MUDSTONE; MTHRS BROWN-ORANGE; BEDS 5-13CM DECR TO TOP; CONTAINS SILTSTONE (W GREY MTHRS ORANGE) LAMINAE INC TO TOP AND BECOME S THINLY BEDDED 3-10CM; MUDSTONE LAMINAE; NO PLANTS OBSERVED
* 90	21.74	23.84	2.10			SANDSTONE	AS ABOVE BUT MORE MUDSTONE INTERBEDS; S AND LAMINAE IN SILTST; 127CM UP BEGIN MINOR PLANT MASH; AT TOP MINOR SS-SILTST P REDOM; EVIDENCE OF PLANTS WILSSONIA LIKE; SILTST MORE FE RICH; BOUNDINAGE; CROSS BEDDING.
* 90	23.84	24.54	0.70			SILTSTONE	M.GY.THNB MTHRS BROWN-ORANGE; SM BIVALVES, WOOD BRANCHES, PLANTS: CZEKANOWSKIA PODOZAMITES N. CANADENSIS; PLANTS 20CM BELOW BIVALVES; WOOD ABOVE; MORE THINLY BEDDED TO TOP.
* 90	24.54	25.54	1.00			SILTSTONE	DK.GY.THNB MTHRS BROWN-GREY; FE STAINED; MINOR MUDSTONE BANDS; SOME BOUNDINAGE; VERY MINOR QTZ INFILL OF FRACTURES; MORE PLANTS U P SECTION; LG TREE BRANCHES WITHIN BEDDING PLANES; N. SCHAMBERGENSIS N. CANADENSIS PODOZAMITES

\* DENOTES MEASURED BCA

85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 6

PROJECT: KPN BLOCK: LR DATA SOURCE: OYC85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	25.54	33.54	8.00			OVERBURDEN	COVERED INTERVAL; NOT MEASURED; SPECULATE BROWN-GREY SILTSTONE BASED ON SMARDS
* 90	33.54	36.84	3.30			SILTSTONE	DK.GY.THNB WELL MTHRD BROWN; BOUNDINAGE; VERY MINOR FE STAINING; NO PLANTS NOTED
* 90	36.84	37.69	0.85			SILTSTONE	DK.GY AS BEFORE BUT MORE THINLY BEDDED AND GREATER FE STAINING; FEW MUDSTONE BANDS APPROX 4CM SPACED APPROX 25CM
* 90	37.69	38.79	1.10			SILTSTONE	DK.GY MTHRS YELLOW-BROWN; LESS BOUNDINAGE AND THICKER BEDDING (5-15CM) THAN ABOVE; DK GREY MUDSTONE LAMINAE
* 90	38.79	39.60	0.81			SILTSTONE	DK.GY.MB MTHRS ORANGE-YELLOW AND GREY; BOUNDINAGE
* 90	39.60	45.60	6.00			OVERBURDEN	COVERED INTERVAL; NOT MEASURED; RECESSIVE
* 90	45.60	46.95	1.35			SANDSTONE	VFG.M.GY.THNB MTHRS YELLOW-BROWN; NO PLANTS SEEN
* 90	46.95	47.65	0.70			SANDSTONE	MG.DK.GY.MAS MODERATE FE STAINING; MTHRS YELLOW-BROWN

\* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: OTC85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	47.65	48.65	1.00			SANDSTONE	FG. M. GY. THNB MODERATE PLANT WASH; WTHRS BROWN-GREY
* 90	48.65	50.05	1.40			SANDSTONE	FG. M. GY. MAS WTHRS RUST-BROWN; DISCONTINUOUS MINOR T MIN SILTSTONE LAMINAE NEAR TOP; MINOR Q TZ. FILLED FRACTURES; NO PLANTS SEEN
* 90	50.05	50.95	0.90			SANDSTONE	LT. GY. THNB WTHRS YELLOW-GREY; BEDS .5-4CM THICK; S UBSTANTIAL FE STAINING ON GRAINS
* 90	50.95	53.45	2.50			OVERBURDEN	COVERED INTERVAL; NOT MEASURED; SPECULA TE BROWN-GREY MUDSTONE
* 90	53.45	54.75	1.30			SANDSTONE	FG. LT. GY. MAS MINOR FE STAIN ON GRAINS; WTHRS YELLOW; MORE THINLY BEDDED TOWARDS TOP; GRADES TO UPPER UNIT.
* 90	54.75	55.55	0.80			SANDSTONE	FG. LT. GY. THNB AS ABOVE; .5-10CM BEDS; MINOR PLANT HAS H
* 90	55.55	57.05	1.50			MUDSTONE	LT. GY. MOSTLY COVERED-FROM SURFICIAL SPOIL; PD ONLY CONSOLIDATED; HIGHLY WEATHERED; SH EARED

\* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: OTC85014

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	57.05	61.05	4.00			MUDSTONE	DK. GY. MOSTLY COVERED-FROM SURFICIAL SPOIL; UN CONSOLIDATED; SOFT

\* DENOTES MEASURED BCA  
NEWPAGE

707

GULF CANADA RESOURCES INC.  
 COAL DIVISION  
 KLAPPAN PROJECT  
 STRATIGRAPHIC LOG  
 KPN LR OTC85001

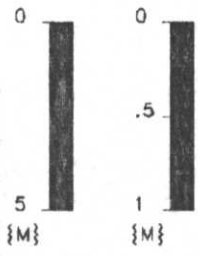
GEOLOGIST : MACLEOD

DATE : NOV 14/85

DRAWING NO. :

LITHOLOGIC SYMBOLS

SCALE : 1:200 1:40



NORTHING: 6345650.0 N  
 EASTING: 506550.0 E

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	COVERED		FOSSIL BED

MEASURED INTERVAL

TRUE 1:200 INTERVAL





707

GULF CANADA RESOURCES INC.  
 COAL DIVISION  
 KLAPPAN PROJECT  
 STRATIGRAPHIC LOG  
 KPN LR OTC85002

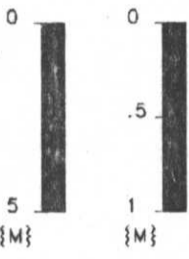
GEOLOGIST : BUHAY

DATE : NOV 14/85

DRAWING NO. :

LITHOLOGIC SYMBOLS

SCALE : 1:200 1:40



NORTHING: 6344650.0 N  
 EASTING: 506730.0 E

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	COVERED		FOSSIL BED

MEASURED  
INTERVAL

TRUE 1:200  
INTERVAL

{M}

{M}

10 -

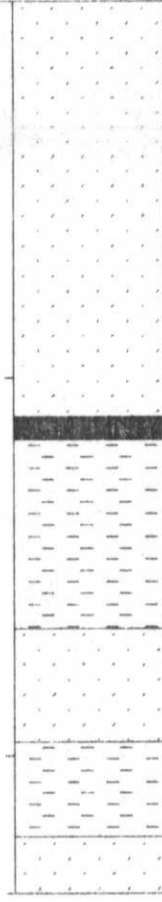
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20 -

20

TOTAL: 23.63

TOTAL: 23.63



707

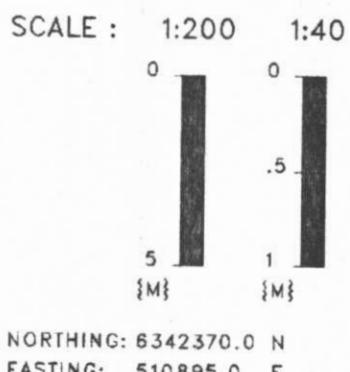
GULF CANADA RESOURCES INC.  
 COAL DIVISION  
 KLAPPAN PROJECT  
 STRATIGRAPHIC LOG  
 KPN KH OTC85004

GEOLOGIST : MACLEOD

DATE : NOV 14/85

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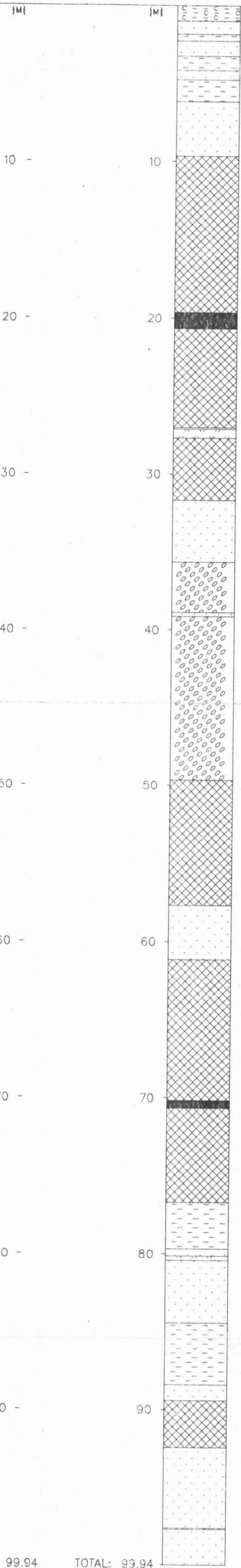
LITHOLOGIC SYMBOLS



	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	COVERED		FOSSIL BED

MEASURED INTERVAL

TRUE INTERVAL 1:200



707

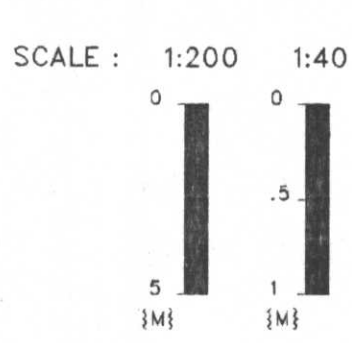
GULF CANADA RESOURCES INC.  
 COAL DIVISION  
 KLAPPAN PROJECT  
 STRATIGRAPHIC LOG  
 KPN KH OTC85005

GEOLOGIST : MACLEOD

DATE : NOV 14/85

DRAWING NO. :

LITHOLOGIC SYMBOLS

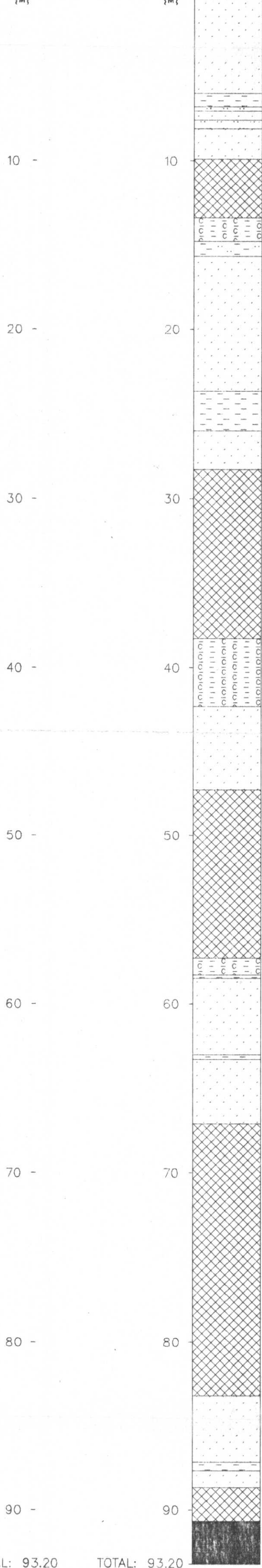


NORTHING: 6342465.0 N  
 EASTING: 511155.0 E

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	COVERED		FOSSIL BED

MEASURED INTERVAL

TRUE 1:200 INTERVAL



TOTAL: 93.20

TOTAL: 93.20

707

GULF CANADA RESOURCES INC.  
 COAL DIVISION  
 KLAPPAN PROJECT  
 STRATIGRAPHIC LOG  
 KPN LR OTC85014

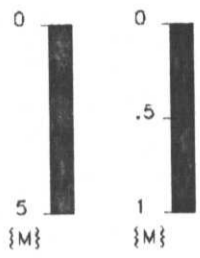
GEOLOGIST : STEWART

DATE : NOV 12/85

DRAWING NO. :

LITHOLOGIC SYMBOLS

SCALE : 1:200 1:40

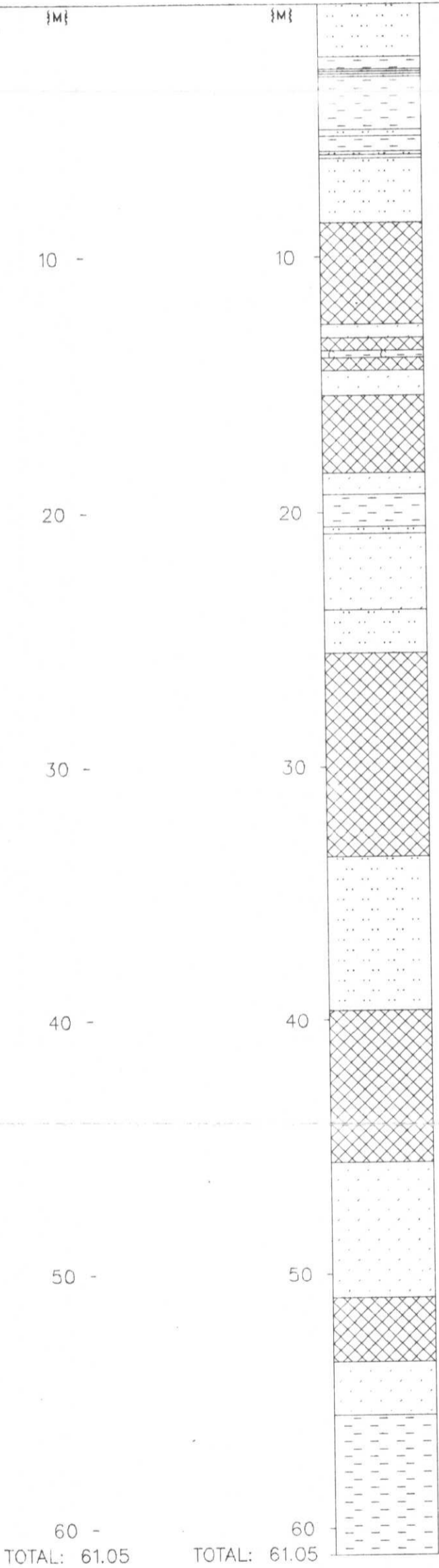


NORTHING: 6342650.0 N  
 EASTING: 506550.0 E

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	COVERED		FOSSIL BED

MEASURED  
INTERVAL  
{M}

TRUE 1:200  
INTERVAL  
{M}



APPENDIX III

Lost-Fox Area  
1985 Rotary Drill Hole Data

Page 1 of 1

GULF CANADA RESOURCES INC. - COAL DIVISION  
11/NOV/85 PROJECT DATA SOURCE SUMMARY PAGE 1

DATA SOURCE	LOCATION		ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
	NORTHING	EASTING					
KPNLROTC85001	6345650.0	506550.0	1478.0	32.0			
KPNLROTC85002	6344650.0	506730.0	1737.0	24.0			
KPNKHOTC85004	6342370.0	510895.0	1943.0	98.0			
KPNKHOTC85005	6342465.0	511155.0	1870.0	93.0			
KPNLROTC85014	6342650.0	506550.0	1645.0	61.0			

**KPNLRRDH85001**

===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRRDH85001

DATE - 01/09/86

- HISTORY -

START DATE - 03/10/85  
END DATE - 03/12/85

CONTRACTOR - DGE CONSTRUCT  
GEOLOGIST - M. BARKER

OPERATOR - G.C.R.I.  
SURVEYOR -

REMARKS - SEAM DEPTHS AND THICKNESSES BASED ON INFORMATION S  
UPPLIED FROM THE DRILLERS LOGS AND GEOPHYSICAL LOG  
INTERPRETATION, SITE J

- LOCATION -

PROVINCE - BC  
ELEVATION - 1315.00

ZONE - 9  
NORTHING - 6347520.00  
EASTING - 505750.00

LICENCE/LEASE NUMBER - 7173

LATITUDE - 571621  
LONGITUDE - 1285417

- ORIENTATION -

LENGTH - 105.03  
CORE SIZE - 0.0

INCLINATION - 90.0  
AZIMUTH - 0.0

CEMENT -  
PLUG -  
PIEZ -

CASING DEPTH (M) - 0.00  
AQUIFER DEPTHS (M) - 0.00  
0.00  
LOST CIRC. DEPTHS (M) - 0.00  
0.00

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

=====



# MT. KLAPPAN COAL PROPERTY

1985 ROTARY DRILL HOLES  
KPNLRRDH85001

SEAM

TRUE SEAM THICKNESS  
(COAL & ROCK)



NOTE: SCHEMATIC PROFILE.  
NO THICKNESSES SHOWN  
FOR SEAMS CONTAINING  
LESS THAN 50cm COAL.

SCALE: 1:2000

GULF CANADA RESOURCES INC.  
15/01/86



85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	3.00	3.00			SANDSTONE	SLTY. FG. VPR. LT. GY MINOR FE STAINING.
00	3.00	6.05	3.05			SILTSTONE	SSY. VFG. VPR. LT. GY
00	6.05	9.14	3.09			SANDSTONE	SLTY. VFG. VPR. LT. GY OCCASIONAL QUARTZ VEIN
00	9.14	12.23	3.09			SANDSTONE	SLTY. VFG. VPR. LT. GY
00	12.23	15.32	3.09			SILTSTONE	LT. GY
00	15.32	18.41	3.09			SANDSTONE	SLTY. VFG. LT. GY
00	18.41	21.50	3.09			SILTSTONE	LT-M. GY. LAM MUDDY SLTST WITH FINER GRAINED LAYERS
00	21.50	24.59	3.09			SILTSTONE	LT-M. GY. LAM MUDDY SLTST WITH FINER GRAINED LAYERS
00	24.59	27.68	3.09			SILTSTONE	LT-M. GY
00	27.68	30.77	3.09			MUDSTONE	CARB. LT-M. GY CLAYEY MUDST

\* DENOTES MEASURED BCA

85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	30.77	33.86	3.09			SILTSTONE	CLYY. M. GY MUDDY SLTST. PYRITE. OCCASIONAL QUARTZ VEIN.
00	33.86	36.95	3.09			MUDSTONE	CARB. DK. GY. MAS SILTY MUDST
00	36.95	40.04	3.09			MUDSTONE	CARB. DK. GY. MAS SILTY MUDST. EXTREMELY FINE GRAINED AND UNIFORM. 2 DIFFERENT CLEAVAGE PLANES AT T APPROXIMATE ANGLE OF 40.
00	40.04	43.13	3.09			MUDSTONE	CARB. DK. GY. MAS EXTREMELY FINE GRAINED. HIGHLY PYRITIZED D. OCCASIONAL QUARTZ.
00	43.13	46.22	3.09			MUDSTONE	CARB. DK. GY. MAS MODERATELY PYRITIZED. OCCASIONAL QUARTZ EXTREMELY FINE GRAINED.
00	46.22	49.31	3.09			MUDSTONE	SLTY. M-DK. GY. MAS EXTREMELY FINE GRAINED AND UNIFORM. 2 C LEAVAGE PLANES AT AN ANGLE OF APPROXIMA TELY 40.
00	49.31	52.40	3.09			MUDSTONE	SLTY. M-DK. GY. MAS 2 CLEAVAGE PLANES AT AN ANGLE OF APPROX IMATELY 40.

\* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	52.40	55.49	3.09			MUDSTONE	SLTY. M-DK. GY. HAS MODERATE AMOUNT OF QUARTZ IN LARGE CHUNKS. EXTREMELY FINE GRAINED MUDST.
00	55.49	58.58	3.09			SILTSTONE	CLYY. M-DK. GY. HAS EXTREMELY FINE GRAINED AND UNIFORM
00	58.58	61.67	3.09			MUDSTONE	SLTY. M-DK. GY. HAS EXTREMELY FINE GRAINED AND UNIFORM
00	61.67	64.76	3.09			MUDSTONE	CARB. DK. GY. HAS SILTY MUDST. EXTREMELY FINE GRAIN AND UNIFORM.
00	64.76	67.85	3.09			MUDSTONE	CARB. DK. GY. HAS SILTY MUDST. EXTREMELY FINE GRAINED AND UNIFORM.
00	67.85	70.94	3.09			MUDSTONE	CARB. DK. GY. HAS EXTREMELY FINE GRAINED, UNIFORM, AND VERY SOFT.
00	70.94	74.03	3.09			MUDSTONE	CARB. M. GY. FERRUGINOUS CHUNKS.
00	74.03	77.12	3.09			MUDSTONE	CARB. H-DK. GY. HAS VERY SOFT

• DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH85001

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	77.12	80.21	3.09			MUDSTONE	CARB. M. GY. SILTY MUDST. MODERATE AMOUNT OF QUARTZ. EXTREMELY FINE GRAINED AND UNIFORM.
00	80.21	83.30	3.09			MUDSTONE	CARB. M. GY. LAM SILTY MUDST.
00	83.30	87.50	4.20			COAL	C-1. BLK VERY SHINY
00	87.50	91.70	4.20			COAL	C-1. BLK VERY SHINY
00	91.70	95.03	3.33			MUDSTONE	CARB. BLK CARBONACEOUS MUDST. C-1. 50:50 = COAL:M UDST
00	95.03	98.37	3.34			MUDSTONE	CARB. BLK CARBONACEOUS MUDST. C-1. 50:50 = COAL:M UDST. QUARTZ.
00	98.37	101.70	3.33			MUDSTONE	CARB. BLK SILTY MUDST. APPROXIMATELY 30% COAL.
00	101.70	105.03	3.33			MUDSTONE	CARB. DK. GY. SILTY MUDST. NUMEROUS FINE QUARTZ VEINS. PYRITE.

• DENOTES MEASURED BCA  
NEPAGE

KPNLRRDH85002

===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRRDH85002

DATE - 01/09/86

- HISTORY -

START DATE - 03/12/85

END DATE - 03/14/85

CONTRACTOR - DGE CONST.

GEOLOGIST - BARKER

OPERATOR - GCRI

SURVEYOR -

REMARKS - SEAM DEPTHS AND INTERVAL THICKNESSES ARE BASED ON  
INFORMATION TAKEN FROM DRILLERS LOGS AND GEOPHYSIC  
AL LOG INTERPRETATION, SITE G

- LOCATION -

PROVINCE - BC

ELEVATION - 1355.00

LICENCE/LEASE NUMBER - 7172

ZONE - 9

NORTHING - 6347170.00

EASTING - 506060.00

LATITUDE - 571610

LONGITUDE - 1285358

- ORIENTATION -

LENGTH - 105.25

CORE SIZE - 0.0

CEMENT -

PLUG -

PIEZ -

INCLINATION - 90.0

AZIMUTH - 0.0

CASING DEPTH (M) - 0.00

AQUIFER DEPTHS (M) - 0.00

0.00

LOST CIRC. DEPTHS (M) - 0.00

0.00

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

=====

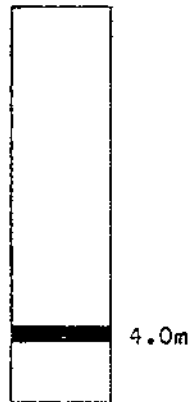
# MT. KLAPPAN COAL PROPERTY

## 1985 ROTARY DRILL HOLES

### KPNLRRDH85002

SEAM

TRUE SEAM THICKNESS  
(COAL & ROCK)



NOTE: SCHEMATIC PROFILE.  
NO THICKNESSES SHOWN  
FOR SEAMS CONTAINING  
LESS THAN 50cm COAL.

SCALE: 1:2000

GULF CANADA RESOURCES INC.  
15/01/86



85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	3.08	3.08			OVERBURDEN	DK.GY CLAYEY SOIL, VERY WEATHERED. ROUNDED PE BBLES OF VARYING COMPOSITION.
00	3.08	6.16	3.08			OVERBURDEN	DK.GY CLAYEY SOIL AS LAST SAMPLE.
00	6.16	9.24	3.08			OVERBURDEN	DK.GY CLAY WITH SOME VERY FINE GRAINED SILTY SS PEBBLES.
00	9.24	12.32	3.08			OVERBURDEN	DK.GY CLAY WITH SOME VERY FINE GRAINED SILTY SS PEBBLES AS WELL AS MUDST AND ROUNDED CHERT PEBBLES.
00	12.32	15.40	3.08			OVERBURDEN	DK.GY CLAY WITH SOME VERY FINE GRAINED SILTY SS PEBBLES AS WELL AS MUDST AND ROUNDED CHERT PEBBLES.
00	15.40	18.48	3.08			SANDSTONE	CLYY,VFG,VPR,DK.GY SILTY SS, VERY FINE GRAINED TO MEDIUM G RAINED WITH SOME GRAHULES, VERY POORLY SORTED, SOME CHUNKS LOOKING LIKE MATRIX SUPPORTED CONGLOMERATE.

• DENOTES MEASURED BCA

85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	18.48	21.56	3.08			OVERBURDEN	CLYY,M.GY OYBON AS LAST SAMPLE, VERY ROUNDED SS/S LST PEBBLES APPROX. 40% OF REMAINDER IS UNCONSOLIDATED CLAY.
00	21.56	24.67	3.11			SLST	SSY,MEL,OK.GY MINOR QUARTZ VEINING, SOME FINE SAND.
00	24.67	27.78	3.11			SLST	MOD,DK.GY MINOR QUARTZ VEINING, FISSILE, SOME FIN E SAND.
00	27.78	30.89	3.11			SLST	MOD,DK.GY MINOR QUARTZ VEINING, FISSILE, SOME FIN E SAND.
00	30.89	34.00	3.11			MUDSTONE	SILTY,MOD,DK.GY FISSILE
00	34.00	37.11	3.11			MUDSTONE	MEL,DK.GY FISSILE, EXTENSIVE QUARTZ VEINING.
00	37.11	40.22	3.11			SLST	CLYY,PR,DK.GY FISSILE, NO VEINS.
00	40.22	43.33	3.11			SLST	CLYY,PR,DK.GY FISSILE, NO VEINS.

• DENOTES MEASURED BCA

PROJECT: KPH BLOCK: LR DATA SOURCE: RDHB5002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	43.33	46.44	3.11			MUDSTONE	MEL, DK. GY
00	46.44	49.55	3.11			MUDSTONE	SLTY. PR. DK. GY FISSILE
00	49.55	52.66	3.11			SLST	MEL, DK. GY VERY WELL INDURATED.
00	52.66	55.77	3.11			MUDSTONE	SLTY. MOD. DK. GY
00	55.77	58.88	3.11			MUDSTONE	SLTY. PR. DK. GY VERY SILTY
00	58.88	61.99	3.11			SANDSTONE	FG. MEL. M. GY MINOR QUARTZ VEINING, TRACE OF COAL (UP HOLE).
00	61.99	65.22	3.23			MUDSTONE	MEL. DK. GY APPEARS VERY HOMOGENOUS
00	65.22	68.45	3.23			SANDSTONE	FG. MOD. M. GY MINOR QUARTZ VEINING, TRACE OF COAL 10% CLYST (UPHOLE?).
00	68.45	71.68	3.23			SANDSTONE	SLTY. VFG. PR. M. GY FISSILE

\* DENOTES MEASURED BCA

PROJECT: KPH BLOCK: LR DATA SOURCE: RDHB5002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	71.68	74.91	3.23			SILTSTONE	SSY. PR. DK. GY ABUNDANT VERY FINE SAND.
00	74.91	78.14	3.23			SILTSTONE	SSY. PR. DK. GY ABUNDANT VERY FINE SAND.
00	78.14	81.37	3.23			SILTSTONE	CLYY. PR. DK. GY DISTINCTLY FINER GRAINED THAN SILTSTONE OF LAST SAMPLE.
00	81.37	84.60	3.23			SILTSTONE	MEL. DK. GY
00	84.60	88.60	4.00			COAL	BLK MINOR CLAYSTONE/SILTSTONE. GENERALLY C2 -C3.
00	88.60	91.93	3.33			MUDSTONE	CARB. BLK VERY CARBONACEOUS, SOME COAL (UPHOLE?).
00	91.93	95.26	3.33			MUDSTONE	MEL. DK. GY ABUNDANT, APPARENTLY UPHOLE, SMALL COAL FRAGMENTS.
00	95.26	98.59	3.33			MUDSTONE	CARB. MEL. BLK QUARTZ VEINED, MINOR COAL.

\* DENOTES MEASURED BCA



PROJECT: KPH BLOCK: LR DATA SOURCE: RDH85002

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	98.59	101.92	3.33			MUDSTONE	MEL. DK. GY QUARTZ VEINED.
00	101.92	105.25	3.33			MUDSTONE	CARB. MEL. DK. GY SOME MINOR CARBONACEOUS FRAGMENTS.

\* DENOTES MEASURED BCA  
NEWPAGE

**KPNLRRDH85003**

----- GULF CANADA RESOURCES INC. -----

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRRDH85003

DATE - 01/09/86

- HISTORY -

START DATE - 03/15/85

END DATE - 03/16/85

CONTRACTOR - DGE CONST

GEOLOGIST - BARKER

OPERATOR - GCRI

SURVEYOR -

REMARKS - SEAM DEPTHS AND INTERVAL THICKNESSES ARE BASED ON  
INFORMATION TAKEN FROM DRILLERS LOGS AND GEOPHYSIC  
AL LOG INTERPRETATION, DRILL BIT TWISTED OFF AT 96  
.62 M

- LOCATION -

PROVINCE - BC

ELEVATION - 1350.00

LICENCE/LEASE NUMBER - 7170

ZONE - 9

NORTHING - 6346830.00

EASTING - 505410.00

LATITUDE - 571559

LONGITUDE - 1285437

- ORIENTATION -

LENGTH - 103.23

INCLINATION - 90.0

AZIMUTH - 0.0

CORE SIZE - 0.0

CEMENT -

PLUG -

PIEZ -

CASING DEPTH (M) - 0.00

AQUIFER DEPTHS (M) - 0.00

0.00

LOST CIRC. DEPTHS (M) - 0.00

0.00

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

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85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	3.33	3.33			OVERBURDEN	CLYY, DK. GY VERY CLAYEY OVERBURDEN. SUBROUNDED PEBBLES OF FINE GRAINED SS AND CARBONACEOUS SLTST. VERY CLAY-RICH
00	3.33	6.66	3.33			OVERBURDEN	CLYY, DK. GY VERY CLAYEY OVERBURDEN. SUBROUNDED PEBBLES OF FINE GRAINED SS AND CARBONACEOUS SLTST. VERY CLAY-RICH
00	6.66	9.99	3.33			SANDSTONE	SLTY. FG. PR. M. GY JUST BELOW OVBDN/SS CONTACT(?). VERY CLAY-RICH.
00	9.99	13.32	3.33			SILTSTONE	CLYY, M-DK. GY OCCASIONAL FINE ANKERITE VEINS. PYRITE.
00	13.32	16.65	3.33			MUDSTONE	CARB. DK. GY. LAM SILTY MUDST. OCCASIONAL QUARTZ VEIN. VERY FINE GRAINED CARBONACEOUS MUDST.
00	16.65	19.98	3.33			SILTSTONE	SSY. M. GY SLTST GRADING IN PLACES TO VERY FINE GRAINED SS, MODERATELY SORTED.
00	19.98	23.31	3.33			MUDSTONE	VFG. LT. GY. PHRD FEM CHIPS, MOSTLY POWDER. CLAYST(?) VERY FINE GRAINED.

• DENOTES MEASURED BCA

85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH85003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	23.31	26.64	3.33			SILTSTONE	CLYY. VFG. LT. GY.
00	26.64	29.97	3.33			MUDSTONE	CARB. VFG. BLK. PHRD MOSTLY ALL VERY FINE GRAINED CLAY. FEM MUDST CHUNKS.
00	29.97	33.30	3.33			MUDSTONE	CARB. S-P. GY SILTY CLAYST WITH MUCH ANKERITE(?) THROUGHOUT.
00	33.30	36.63	3.33			MUDSTONE	CARB. DK. GY CLAYEY MUDST WITH OCCASIONAL FINE GRAINED SS CLASTS (FALLEN FROM ABOVE(?)).
00	36.63	39.96	3.33			MUDSTONE	CARB. DK. GY CLAYEY MUDST WITH OCCASIONAL FINE GRAINED CLASTS (FALLEN FROM ABOVE(?)).
00	39.96	43.29	3.33			MUDSTONE	CARB. M-DK. GY SILTY MUDST. MANY WIDE QUARTZ VEINS (LARGE QUARTZ CHUNKS)
00	43.29	46.62	3.33			SILTSTONE	CLYY DK. GY. LAM INTERLAYERED CARBONACEOUS MUDST AND SLTST OCCASIONAL QUARTZ VEIN, OCCASIONAL FINE COAL STRINGER(?).

\* DENOTES MEASURED BCA

85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: LR DATA SOURCE: RDHB5003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	46.62	49.95	3.33			SILTSTONE	CLYY, DK. GY. LAM. PHRD INTERLAYERED CARBONACEOUS MUDST AND SLT ST OCCASIONAL QUARTZ VEIN, OCCASIONAL F INE COAL STRINGER(?).
00	49.95	53.28	3.33			SILTSTONE	CARB. VFG. BLK
00	53.28	56.61	3.33			MUDSTONE	CARB. BLK. PHRD OCCASIONAL FINE COAL STRINGER(?).
00	56.61	59.94	3.33			MUDSTONE	CARB. M. BLK. PHRD OCCASIONAL FINE COAL STRINGER(?).
00	59.94	63.27	3.33			MUDSTONE	CARB. BLK. PHRD OCCASIONAL COAL STRINGER(?). VERY FINE GRAINED.
00	63.27	66.60	3.33			SILTSTONE	DK. GY GRADING FROM BLK MUDST TO VERY FINE GRA INED SS, NUMEROUS ANKERITE VEINS.
00	66.60	69.93	3.33			SILTSTONE	VFG. LT-M. GY. PHRD

\* DENOTES MEASURED BCA

85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 4

PROJECT: KPN BLOCK: LR DATA SOURCE: RDHB5003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	69.93	73.26	3.33			MUDSTONE	LT-M. GY VERY CLAYEY WITH MINDR SILTY AND FINE G RAINED SS CHUNKS.
00	73.26	76.59	3.33			MUDSTONE	M. GY. PHRD NO CHUNKS: VERY FINE POWDER. PROBABLY S LIGHTLY CARBONACEOUS MUDST.
00	76.59	79.92	3.33			MUDSTONE	CARB. BLK. PHRD VERY CARBONACEOUS.
00	79.92	83.25	3.33			MUDSTONE	CARB. BLK. PHRD VERY CARBONACEOUS.
00	83.25	86.58	3.33			MUDSTONE	SLTY. BLK CARBONACEOUS MUDST.
00	86.58	89.91	3.33			MUDSTONE	CARB. BLK VERY CARBONACEOUS MUDST. OCCASIONAL COA L STRINGER
00	89.91	93.24	3.33			MUDSTONE	CARB. BLK VERY CARBONACEOUS, SILTY MUDST. SILTIER THAN LAST SAMPLE.
00	93.24	96.57	3.33			MUDSTONE	CLYY. BLK. PHRD CARBONACEOUS MUDST. SLIGHTLY SILTIER TH AN SAMPLE AT 83.08M. OCCASIONAL COAL ST RINGER(?).

\* DENOTES MEASURED BCA

85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 5

PROJECT: KPM BLOCK: LR DATA SOURCE: RDH05003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	96.57	99.90	3.33			MUDSTONE	SLTY. M. GY CARBONACEOUS MUDST. FISSILE(?)
00	99.90	103.23	3.33			MUDSTONE	SLTY. DK. GY CARBONACEOUS MUDST. FISSILE(?)

\* DENOTES MEASURED BCA  
NEWPAGE

**KPNLRRDH85004**



===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRRDH85004

DATE - 01/09/86

- HISTORY -

START DATE - 03/16/85  
END DATE - 03/17/85

CONTRACTOR - DGE CONST  
GEOLOGIST - BARKER

OPERATOR - GCRI  
SURVEYOR -

REMARKS - SEAM DEPTHS AND INTERVAL THICKNESSES ARE BASED ON  
INFORMATION FROM DRILLERS LOGS AND GEOPHYSICAL LOG  
INTERPRETATION, SITE B.

- LOCATION -

PROVINCE - BC  
ELEVATION - 1295.00

ZONE - 9  
NORTHING - 6348490.00  
EASTING - 506310.00

LICENCE/LEASE NUMBER - 7172

LATITUDE - 571653  
LONGITUDE - 1285343

- ORIENTATION -

LENGTH - 97.03

INCLINATION - 90.0  
AZIMUTH - 0.0

CORE SIZE - 0.0

CEMENT -  
PLUG -  
PIEZ -

CASING DEPTH (M) - 0.00  
AQUIFER DEPTHS (M) - 0.00  
0.00  
LOST CIRC. DEPTHS (M) - 0.00  
0.00

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

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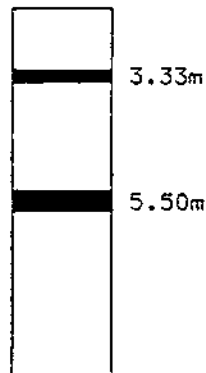
# MT. KLAPPAN COAL PROPERTY

## 1985 ROTARY DRILL HOLES

### KPNLRRDH85004

SEAM

TRUE SEAM THICKNESS  
(COAL & ROCK)



NOTE: SCHEMATIC PROFILE.  
NO THICKNESSES SHOWN  
FOR SEAMS CONTAINING  
LESS THAN 50cm COAL.

SCALE: 1:2000

GULF CANADA RESOURCES INC.  
15/01/86



85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPH BLOCK: LR DATA SOURCE: RDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	3.33	3.33			OVERBURDEN	CLYY.VPR.GY VERY CLAYEY. FINE GRAINED SS CHUNKS.
00	3.33	6.66	3.33			OVERBURDEN	CLYY.VPR.GY VERY CLAYEY. FINE GRAINED SS CHUNKS.
00	6.66	9.99	3.33			OVERBURDEN	CLYY.VPR.GY VERY CLAYEY. FINE GRAINED, DARK GREY MU ST AND SLTST CHUNKS.
00	9.99	13.32	3.33			OVERBURDEN	CLYY.VPR.GY VERY CLAYEY. FINE GRAINED DARK GREY MU ST AND SLTST CHUNKS.
00	13.32	16.65	3.33			MUDSTONE	DK.GY.PMRD VERY COALY MUJST.. COAL-MUJST MIXTURE.
00	16.65	19.98	3.33			COAL	C-3.BLK MODERATE AMOUNT OF MUJST.
00	19.98	23.12	3.14			SILTSTONE	CLYY.LT.GY
00	23.12	26.26	3.14			SILTSTONE	CLYY.LT.GY.LAM MUJY SLTST GRADING TO FINE GRAINED SS IN PLACES. OCCASIONAL QUARTZ VEIN.

\* DENOTES MEASURED BCA

85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPH BLOCK: LR DATA SOURCE: RDH89004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	26.26	29.40	3.14			SILTSTONE	CLYY.LT.GY.LAM MUJY SLTST GRADING TO FINE GRAINED SS IN PLACES. OCCASIONAL QUARTZ VEIN.
00	29.40	32.54	3.14			SILTSTONE	CLYY.LT-M.GY VERY MUJY.
00	32.54	35.68	3.14			MUDSTONE	SLTY.LT.GY VERY SOFT. FISSILE(?).
00	35.68	38.82	3.14			SILTSTONE	CLYY.VPR.LT.GY VERY SOFT. VERY CLAYEY SLTST.
00	38.82	41.96	3.14			SILTSTONE	CLYY.VPR.LT.BN.PMRD
00	41.96	45.10	3.14			SILTSTONE	CLYY.VPR.LT-M.GY
00	45.10	48.24	3.14			SILTSTONE	MOD.M.GY MODERATE TO WELL SORTED.
00	48.24	50.99	2.75			COAL	C-4.BLK.LAM COAL WITH CARBONACEOUS CLAYSTONE INTERL AYERS.
00	50.99	53.74	2.75			COAL	C-2.BLK

\* DENOTES MEASURED BCA

85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	53.74	57.07	3.33			SILTSTONE	CLYY.MOD.M.GY MODERATE TO WELL SORTED.
00	57.07	60.40	3.33			SANDSTONE	FG.MEL.LT-M.GY OCCASIONAL ANKERITE VEIN.
00	60.40	63.73	3.33			SANDSTONE	FG.PR.LT.GY
00	63.73	67.06	3.33			SANDSTONE	FG.PR.LT.GY POOR TO MODERATE SORTING. MODERATE ANKERITE VEINING. OCCASIONAL FERRUGINOUS AREAS.
00	67.06	70.39	3.33			SANDSTONE	SLTY.VFG.VPR.LT.GY VERY FINE GRAINED TO FINE GRAINED. POORLY CONSOLIDATED(?).
00	70.39	73.72	3.33			SANDSTONE	SLTY.VFG.VPR.LT-M.GY.LAM VERY FINE GRAINED TO FINE GRAINED. OCCASIONAL SLTY LAYERS. OCCASIONAL ANKERITE VEINS. FERRUGINOUS STAINING ON SOME PECEES.
00	73.72	77.05	3.33			SANDSTONE	SLTY.VFG.PR.LT-M.GY VERY FINE GRAINED TO FINE GRAINED. MINOR FERRUGINOUS STAINING.

\* DENOTES MEASURED BCA

85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 4

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH85004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	77.05	80.38	3.33			SANDSTONE	VFG.VPR.LT-M.GY VERY FINE GRAINED TO FINE GRAINED. MINOR COAL STRINGERS. OCCASIONAL ANKERITE VEINS 1MM WIDE.
00	80.38	83.71	3.33			SANDSTONE	SLTY.VFG.PR.M.GY
00	83.71	87.04	3.33			MUDSTONE	SLTY.PR.DK.GY MINOR ANKERITE VEINS. SOME FERRUGINOUS STAINING.
00	87.04	90.37	3.33			MUDSTONE	CLYY.MOD.DK.GY SHALE TO FISSILE. UNIFORM SLICKENSLIDES.
00	90.37	93.70	3.33			MUDSTONE	SLTY.PR.DK.GY LESS FISSILE THAN LAST SAMPLE. PLANT FOSSILS(?).
00	93.70	97.03	3.33			MUDSTONE	CLYY.PR.DK.GY SLIGHTLY FISSILE.

\* DENOTES MEASURED BCA  
NEWPAGE

**KPNLRRDH85005**

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRRDH85005

DATE - 01/09/86

- HISTORY -

START DATE - 03/22/85  
END DATE - 03/25/85

CONTRACTOR - DGE CONST.  
GEOLOGIST - BARKER

OPERATOR - GCR!  
SURVEYOR - M.W.G.

REMARKS - SEAM DEPTHS AND INTERVAL THICKNESSES ARE BASED ON  
INFORMATION FROM DRILLERS LOGS AND GEOPHYSICAL LOG  
INTERPRETATION, PROPOSED LOST RIDGE TRIAL CARGO W  
ASTE DUMP AREA

- LOCATION -

PROVINCE - BC  
ELEVATION - 1436.90

ZONE - 9  
NORTHING - 6344941.00  
EASTING - 504103.00

LICENCE/LEASE NUMBER - 7153

LATITUDE - 571458  
LONGITUDE - 1285555

- ORIENTATION -

LENGTH - 106.56

INCLINATION - 90.0  
AZIMUTH - 0.0

CORE SIZE - 0.0

CEMENT -  
PLUG -  
PIEZ -

CASING DEPTH (M) - 0.00  
AQUIFER DEPTHS (M) - 0.00  
0.00  
LOST CIRC. DEPTHS (M) - 0.00  
0.00

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE

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85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPM BLOCK: LR DATA SOURCE: RDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	3.33	3.33			OVERBURDEN	CLYY.VPR.GY VERY CLAYEY. SUBROUNDED FERRUGINOUS SS CLASTS.
00	3.33	6.66	3.33			OVERBURDEN	CLYY.VPR.GY VERY CLAYEY. SUBROUNDED FERRUGINOUS SS PIECES.
00	6.66	9.99	3.33			OVERBURDEN	CLYY.VPR.GY VERY CLAYEY LESS THAN LAST SAMPLE. SLTS T PIECES AND ROUNDED SLTST (MAYBE TRANSPORTED FROM ABOVE).
00	9.99	13.32	3.33			SILTSTONE	CLYY.VPR.BH FINE GRAINED SS PIECES INTERBEDDED VERY CLAYEY SS AND SLTST. WEATHERED BROWN.
00	13.32	16.65	3.33			SILTSTONE	CLYY.VPR.BH FERRUGINOUS SS PIECES INTERBEDDED VERY CLAYEY SLTST. WEATHERED BROWN.
00	16.65	19.98	3.33			ROCK	ABSENT.
00	19.98	23.31	3.33			SILTSTONE	SSY.PR.M-DK.GY.PHRD VERY FINE GRAINED SS. SOME POWDER.
00	23.31	26.64	3.33			SILTSTONE	SSY.PR.M.GY.PHRD VERY FINE GRAINED SS. SOME POWDER.

\* DENOTES MEASURED BCA

85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPM BLOCK: LR DATA SOURCE: RDH85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	26.64	29.97	3.33			SILTSTONE	SSY.PR.DK.GY.PHRD SOME VERY FINE GRAINED SS. SOME POWDER.
00	29.97	33.30	3.33			ROCK	ABSENT.
00	33.30	36.63	3.33			SILTSTONE	DK.GY.PHRD MUCH POWDER.
00	36.63	39.96	3.33			SILTSTONE	CLYY.DK.GY SLIGHTLY CLAYEY.
00	39.96	43.29	3.33			ROCK	ABSENT
00	43.29	46.62	3.33			SILTSTONE	CLYY.DK.GY
00	46.62	49.95	3.33			SILTSTONE	SSY.DK.GY MINOR SS, VERY FINE GRAINED.
00	49.95	53.28	3.33			SANDSTONE	VFG.W-DK.GY
00	53.28	56.61	3.33			SILTSTONE	LT-M.GY
00	56.61	59.94	3.33			ROCK	ABSENT
00	59.94	63.27	3.33			SILTSTONE	CLYY.LT.GY VERY FINE GRAINED PYRITE WITHIN CHIPS

\* DENOTES MEASURED BCA



PROJECT: KPN BLOCK: LR DATA SOURCE: RDM85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	63.27	66.60	3.33			SILTSTONE	CLYY.VFG.LT.GY
00	66.60	69.93	3.33			SILTSTONE	CLYY.MOD.LT-M.GY MINOR VERY FINE GRAINED PYRITE.
00	69.93	73.26	3.33			MUDSTONE	PR.M.GY POOR TO MODERATE SORTING.
00	73.26	76.59	3.33			SILTSTONE	SSY.PR.M.GY
00	76.59	79.92	3.33			SANDSTONE	SLTY.VFG.PR.M.GY
00	79.92	83.25	3.33			SANDSTONE	FG.PR.LT-M.GY FE STAINING WITHIN CHIPS.
00	83.25	86.58	3.33			SANDSTONE	SLTY.VFG.PR.LT.GY SLIGHT FE STAINING IN SS AND SLTST.
00	86.58	89.91	3.33			SANDSTONE	SLTY.VFG.PR.LT.GY FE STAINING WITHIN CHIPS.
00	89.91	93.24	3.33			SANDSTONE	SLTY.VFG.PR.LT-M.GY MODERATE FE STAINING WITHIN CHIPS (MORE THAN LAST SAMPLE).

\* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: LR DATA SOURCE: RDM85005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	93.24	96.57	3.33			SANDSTONE	VPR.M.GY.PHRD POORLY CONSOLIDATED. SLICKENSLIDE(?) VE RY SLIGHT FE STAINING.
00	96.57	99.90	3.33			SANDSTONE	FG.VPR.M.GY.PHRD POORLY CONSOLIDATED.
00	99.90	103.23	3.33			SANDSTONE	SLTY.VFG.PR.DK.GY SLIGHT ANKERITE VEINING.
00	103.23	106.56	3.33			SANDSTONE	SLTY.PR.M-DK.GY VERY SLIGHT FE STAINING. VERY MINOR FIN E PYRITE WITHIN CHIPS.

\* DENOTES MEASURED BCA  
NEWPAGE

**KPNLRRDH85006**

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLRRDH85006

DATE - 01/09/86

- HISTORY -

START DATE - 03/26/85

END DATE - 03/27/85

CONTRACTOR - DGE CONST.

GEOLOGIST - BARKER

OPERATOR - GCRI

SURVEYOR - M.W.G.

REMARKS - SEAM DEPTHS AND INTERVAL THICKNESSES BASED ON INFO  
 RMATION FROM DRILLERS LOGS AND GEOPHYSICAL LOG INT  
 ERPRETATION, PROPOSED LOST FOX TRIAL CARGO WASTE D  
 UMP AREA

- LOCATION -

PROVINCE - BC  
 ELEVATION - 1425.70

LICENCE/LEASE NUMBER - 7153

ZONE - 9  
 NORTHING - 6344103.00  
 EASTING - 503281.25

LATITUDE - 571431  
 LONGITUDE - 1285644

- ORIENTATION -

LENGTH - 102.30

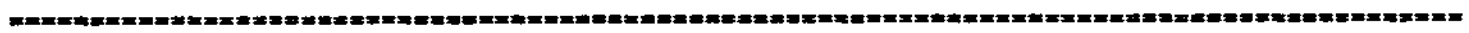
INCLINATION - 90.0  
 AZIMUTH - 0.0

CORE SIZE - 0.0

CEMENT -  
 PLUG -  
 PIEZ -

CASING DEPTH (M) - 0.00  
 AQUIFER DEPTHS (M) - 0.00  
 0.00  
 LOST CIRC. DEPTHS (M) - 0.00  
 0.00

\*\*\* NOTE \*\*\* 0 INDICATES NO VALUE





85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	0.00	3.08	3.08			OVERBURDEN	VPR.BN VERY CLAYEY WITH ROUNDED CHERT SLTST AND SS PEBBLES. VERY WEATHERED.
00	3.08	6.16	3.08			OVERBURDEN	CLYY.VPR.M.GY MUCH CLAY. ROUNDED CHERT, SLTST AND SS PEBBLES. VERY PLASTIC.
00	6.16	9.24	3.08			OVERBURDEN	CLYY.VPR.DK.GY MUCH CLAY. CHERT, SLTST, AND SS PEBBLES. VERY PLASTIC.
00	9.24	12.32	3.08			OVERBURDEN	CLYY.VPR.DK.GY MUCH CLAY. CHERT, SLTST, AND SS PEBBLES. VERY PLASTIC.
00	12.32	15.40	3.08			OVERBURDEN	CLYY.VPR.DK.GY MUCH CLAY. FEWER CHERT, SLTST, AND SS PEBBLES THAN LAST SAMPLE.
00	15.40	18.48	3.08			OVERBURDEN	CLYY.VPR.DK.GY MUCH CLAY. ANGULAR MUDST. SLTST. PIECES.
00	18.48	21.56	3.08			OVERBURDEN	CLYY.VPR.DK.GY MUCH CLAY. ANGULAR MUDST. SLTST. PIECES. OCCASIONAL ROUNDED CHERT PEBBLE. ONE SMALL PIECE OF COAL FOUND.

• DENOTES MEASURED BCA

85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	21.56	24.64	3.08			SANDSTONE	FG.MOD.LT.GY MODERATE TO WELL SORTED. MODERATE ANKERITE VEINING.
00	24.64	27.72	3.08			SANDSTONE	FG.MOD.LT.GY MODERATE TO WELL SORTED. NO APPARENT VEINING.
00	27.72	30.80	3.08			SILTSTONE	CARB.MOD.M.GY.PMRD INTERLAYERED SLTST AND FINE-GRAINED SS. MODERATE AMOUNT OF CRUSHED COAL FRAGMENTS WITH THE SAND.
00	30.80	33.88	3.08			MUDSTONE	CLYY.MOD.M.GY UNIFORM VERY FINE GRAINED.
00	33.88	36.96	3.08			SANDSTONE	SLTY.PR.LT.GY
00	36.96	40.04	3.08			SILTSTONE	SSY.PR.LT.GY
00	40.04	43.12	3.08			MUDSTONE	SLTY.PR.W.GY MINOR PYRITE.
00	43.12	46.20	3.08			MUDSTONE	SLTY.VPR.M.GY SOME VERY FINE GRAINED SS PIECES.

• DENOTES MEASURED BCA

85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	46.20	49.28	3.08			MUDSTONE	SLTY. VPR. M. GY
00	49.28	52.36	3.08			MUDSTONE	CLYY. VPR. DK. GY SLIGHTLY CARBONACEOUS IN PLACES.
00	52.36	54.66	2.30			COAL	C-3. BLK MODERATE AMOUNT OF CRUSHED CLAYST MIXED IN.
00	54.66	57.95	3.29			MUDSTONE	CARB. DK. GY VERY CARBONACEOUS. LARGE AMOUNT OF CRUS MED. COAL.
00	57.95	61.24	3.29			SILTSTONE	SSY. M-DK. GY CLAYEY IN AREAS.
00	61.24	64.53	3.29			SANDSTONE	SLTY. VFG. VPR. M. GY VERY FINE GRAINED TO FINE GRAINED.
00	64.53	67.82	3.29			SILTSTONE	CLYY. PR. DK. GY UNIFORM
00	67.82	71.11	3.29			SILTSTONE	CLYY. MOD. DK. GY. LAM INTERLAYERED UNIFORM CLAYST AND VERY FINE GRAINED SS.
00	71.11	74.40	3.29			SANDSTONE	FG. PR. M. GY POOR TO MODERATE SORTING.

\* DENOTES MEASURED BCA

85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 4

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
00	74.40	77.69	3.29			SANDSTONE	FG. PR. M. GY POOR TO MODERATE SORTING.
00	77.69	80.98	3.29			MUDSTONE	SLTY. VPR. M. GY PYRITE
00	80.98	84.27	3.29			MUDSTONE	SLTY. MOD. DK. GY VERY UNIFORM.
00	84.27	87.56	3.29			MUDSTONE	CLYY. DK. GY VERY UNIFORM
00	87.56	90.85	3.29			MUDSTONE	PR. DK. GY POOR TO MODERATE SORTING. SLIGHTLY SILTY.
00	90.85	94.14	3.29			MUDSTONE	DK. GY VERY UNIFORM. CONCHOIDAL FRACTURE.
00	94.14	95.64	1.50			COAL	C-1. BLK MINOR AMOUNT OF CRUSHED CARBONACEOUS CLAYST.
00	95.64	98.97	3.33			SILTSTONE	CARB. VPR. DK. GY COALY. MODERATE AMOUNTS OF CRUSHED COAL SLIGHTLY CLAYEY.

\* DENOTES MEASURED BCA

85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 5

PROJECT: KPN BLOCK: LR DATA SOURCE: RDH85004

SCA	DEPTH FROM	DEPTH TO	DEPTH INTERVAL THICK.	SAMP TO	SEAM TO	LITHOLOGY	DESCRIPTION
00	98.97	102.30	3.33			SILTSTONE	SSY.VPR.M.GY

-854- NOW IN CONTACT WITH SYSTEM 2000 -  
-855- NO LONGER IN CONTACT WITH SYSTEM 2000 -

**STRIP LOG  
AND  
GEOPHYSICAL LOG**



707

GULF CANADA RESOURCES INC.  
 COAL DIVISION  
 KLAPPAN PROJECT  
 STRATIGRAPHIC LOG  
 KPN LR RDH85001

GEOLOGIST : M. BARKER      DATE : NOV 12/85      DRAWING NO. :

LITHOLOGIC SYMBOLS

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	CORE LOSS		FOSSIL BED

SCALE : 1:200      1:40

NORTHING: 5347520.0 N      INCLINATION: 90.0°  
 EASTING: 505750.0 E      BEARING: 0.0°

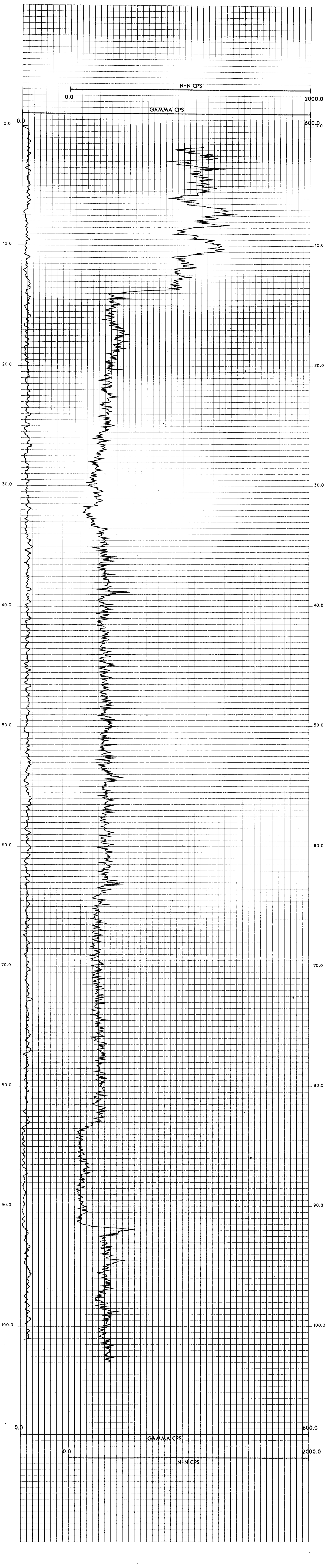
DRILLED DEPTH	BCA	TRUE DEPTH	
{}M{}	{DEG}	{}M{}	
0 -		0	
10 -		10	
20 -		20	
30 -		30	
40 -		40	
50 -		50	
60 -		60	
70 -		70	
80 -		80	
90 -		90	
100 -		100	
TOTAL: 105.03		TOTAL: 105.03	

# Gulf Canada Resources Inc. Coal Division

## Geophysical Log

Datasource: <b>KPNLRRDH85001</b> Log Date: 85-03-12 Company: CENTURY Geologist: M. BARKER	Province: BC Zone: 9 Measuring Point:	Northing: 6347520.00 Easting: 505750.00	Lat: 571621 Long: 1285417 Elevation: 0.0
Scale: 1 to 100.0 Depth Range: 0.0 to 108.0 True Thickness: NO	Comments: 1. 2.		

Description	Axis Range	Axis Length	Smoothing Points	Tool	Comments
1. GAMMA CPS	0.0 to 600.0	24.0	23	9067	1 IN PIPE
2. N-N CPS	0.0 to 2000.0	20.0	7	9067	1 IN PIPE



707

GULF CANADA RESOURCES INC.  
 COAL DIVISION  
 KLAPPAN PROJECT  
 STRATIGRAPHIC LOG  
 KPN LR RDH85002

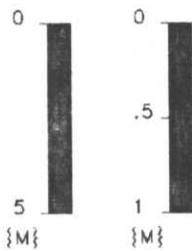
GEOLOGIST : BARKER

DATE : NOV 12/85

DRAWING NO. :

LITHOLOGIC SYMBOLS

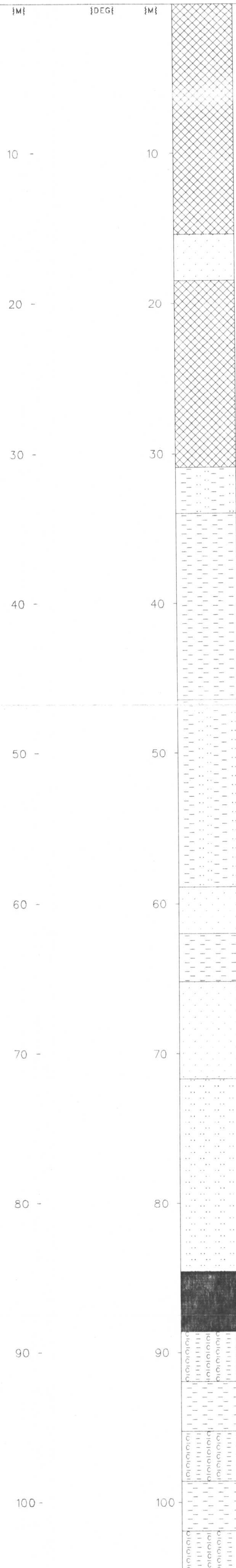
SCALE : 1:200 1:40



NORTHING: 6347170.0 N INCLINATION: 90.0°  
 EASTING: 506060.0 E BEARING: 0.0°

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	CORE LOSS		FOSSIL BED

DRILLED DEPTH BCA TRUE DEPTH 1:200  
 {M} {DEG} {M}



TOTAL: 105.25 TOTAL: 105.25

# Gulf Canada Resources Inc. Coal Division

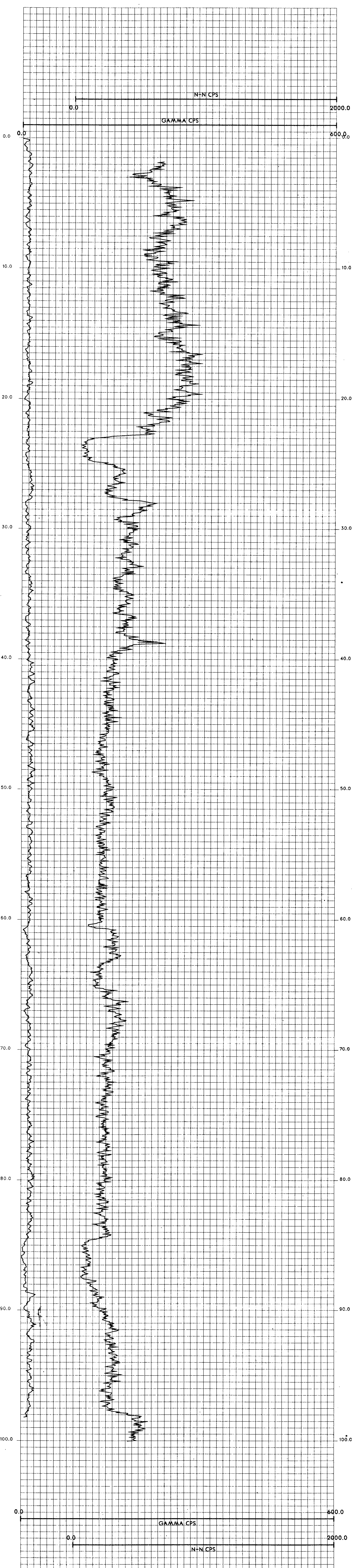
## Geophysical Log

Datasource: <b>KPNLRRDH85002</b> Log Date: 85-03-14 Company: CENTURY Geologist: BARKER	Province: BC Zone: 9 Measuring Point:	Northing: 6347170.00 Easting: 506060.00 Lat: 571610 Long: 1285358 Elevation: 0.0
---	---	--

Scale: 1 to 100.0  
 Depth Range: 0.0 to 105.0  
 True Thickness: NO

Comments:  
 1.  
 2.

Logs Plotted:	Axis Range	Axis Length	Smoothing Points	Tool	Comments
1. GAMMA CPS	0.0 to 600.0	24.0	23	9067	IN PIPE
2. N-N CPS	0.0 to 2000.0	20.0	7	9067	IN PIPE



707

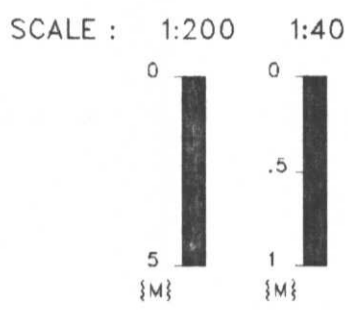
GULF CANADA RESOURCES INC.  
 COAL DIVISION  
 KLAPPAN PROJECT  
 STRATIGRAPHIC LOG  
 KPN LR RDH85003

GEOLOGIST : BARKER

DATE : NOV 12/85

DRAWING NO. :

LITHOLOGIC SYMBOLS :

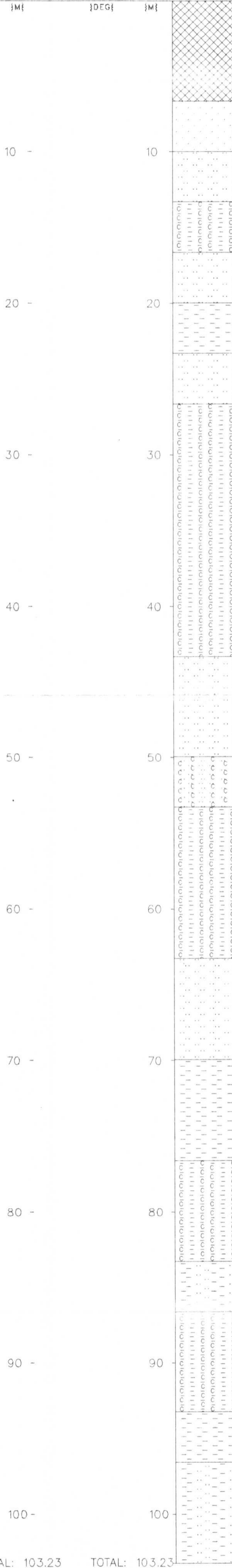


NORTHING: 6346830.0 N  
 EASTING: 505410.0 E

INCLINATION: 90.0°  
 BEARING: 0.0°

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	CORE LOSS		FOSSIL BED

DRILLED DEPTH      BCA      TRUE DEPTH      1:200  
 {M}                  {DEG}                  {M}



TOTAL: 103.23

TOTAL: 103.23

# Gulf Canada Resources Inc. Coal Division

## Geophysical Log

Datasource: **KPNLRDH85003**

Province: BC

Northing: 6346830.00

Lat: 571559

Log Date: 85-03-16

Zone: 9

Easting: 505410.00

Long: 1285437

Company: CENTURY

Measuring Point:

Elevation: 0.0

Geologist: BARKER

Scale: 1 to 100.0

Comments:

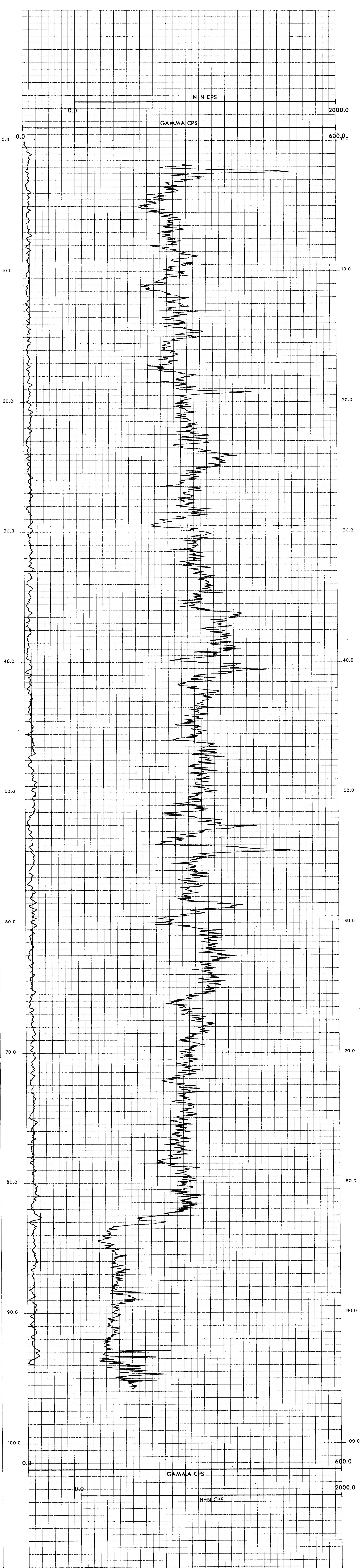
Depth Range: 0.0 to 101.0

1.

2.

Logs Plotted:

Description	Axis Range	Axis Length	Smoothing Points	Tool	Comments
1. GAMMA CPS	0.0 to 600.0	24.0	23	9067	IN PIPE
2. N-N CPS	0.0 to 2000.0	20.0	7	9067	IN PIPE



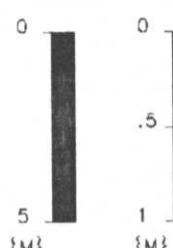
707

GULF CANADA RESOURCES INC.  
 COAL DIVISION  
 KLAPPAN PROJECT  
 STRATIGRAPHIC LOG  
 KPN LR RDH85004

GEOLOGIST : BARKER      DATE : NOV 12/85      DRAWING NO. :

LITHOLOGIC SYMBOLS

SCALE : 1:200    1:40

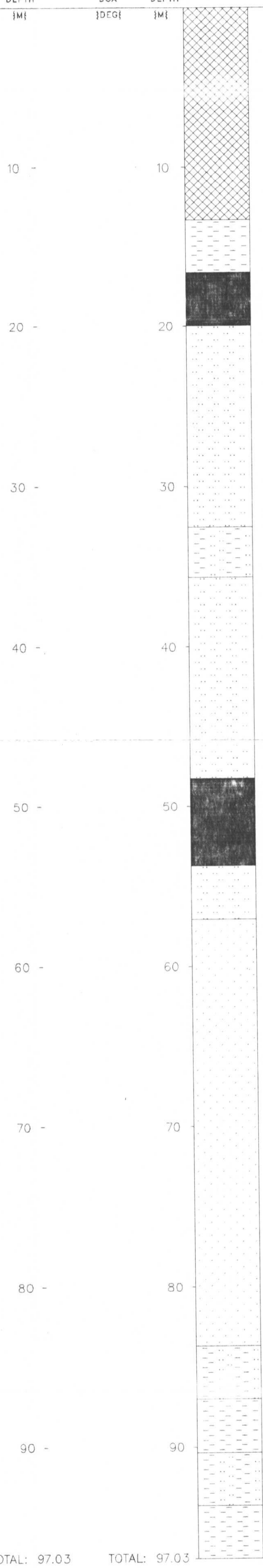


NORTHING: 6348490.0 N  
 EASTING: 506310.0 E

INCLINATION: 90.0°  
 BEARING: 0.0°

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	CORE LOSS		FOSSIL BED

DRILLED DEPTH      BCA      TRUE DEPTH      1:200  
 {M}                  {DEG}                  {M}

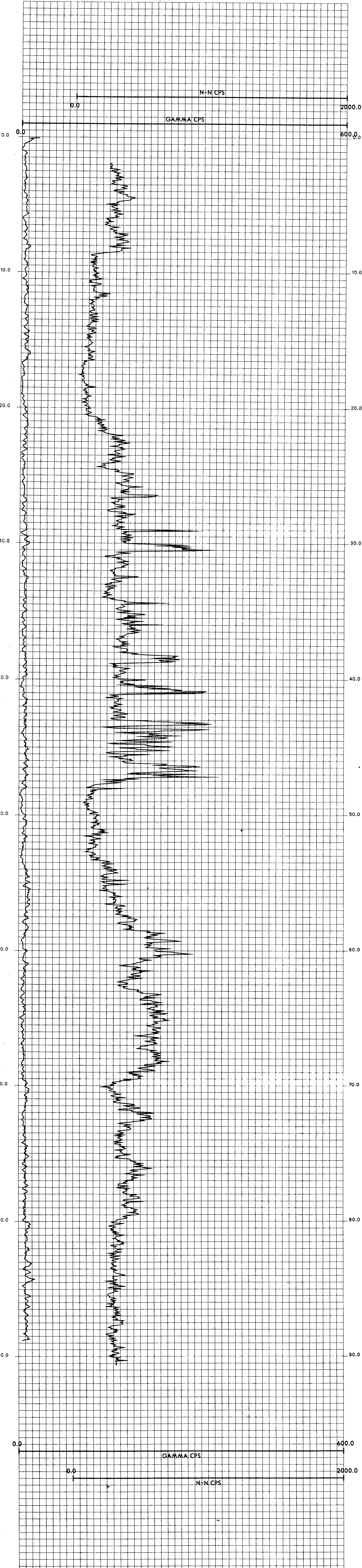


TOTAL: 97.03      TOTAL: 97.03

# Gulf Canada Resources Inc. Coal Division

## Geophysical Log

Datasource: <b>KPNLRDH85004</b> Log Date: 85-03-21 Company: CENTURY Geologist: BARKER	Province: BC    Northing: 6348490.00    Lat: 571653 Zone: 9    Easting: 506310.00    Long: 1285343 Measuring Point: Elevation: 0.0				
Scale: 1 to 100.0 Depth Range: 0.0 to 96.0 True Thickness: NO	Comments: 1. 2.				
Logs Plotted:					
Description	Axis Range	Axis Length	Smoothing Points	Tool	Comments
1. GAMMA CPS	0.0 to 600.0	24.0	23	9067	IN PIPE
2. N-N CPS	0.0 to 2000.0	20.0	7	9067	IN PIPE





707

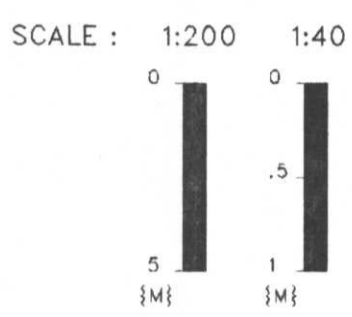
GULF CANADA RESOURCES INC.  
 COAL DIVISION  
 KLAPPAN PROJECT  
 STRATIGRAPHIC LOG  
 KPN LR RDH85005

GEOLOGIST : BARKER

DATE : NOV 12/85

DRAWING NO. :

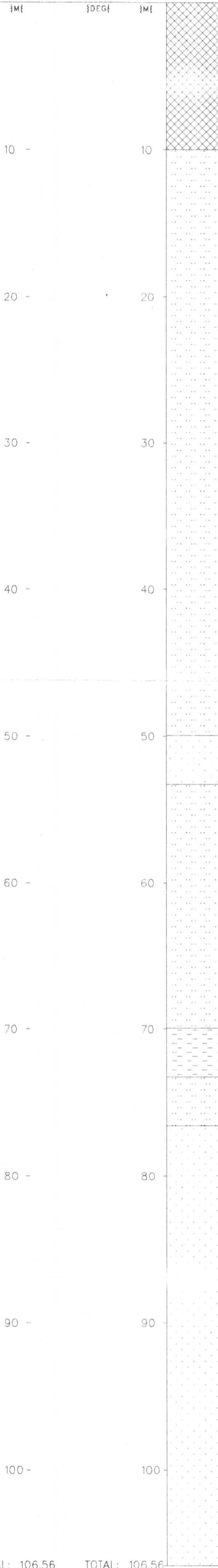
LITHOLOGIC SYMBOLS



NORTHING: 6344941.0 N INCLINATION: 90.0°  
 EASTING: 504103.0 E BEARING: 0.0°

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	CORE LOSS		FOSSIL BED

DRILLED DEPTH BCA TRUE DEPTH 1:200  
 {M} {DEG} {M}

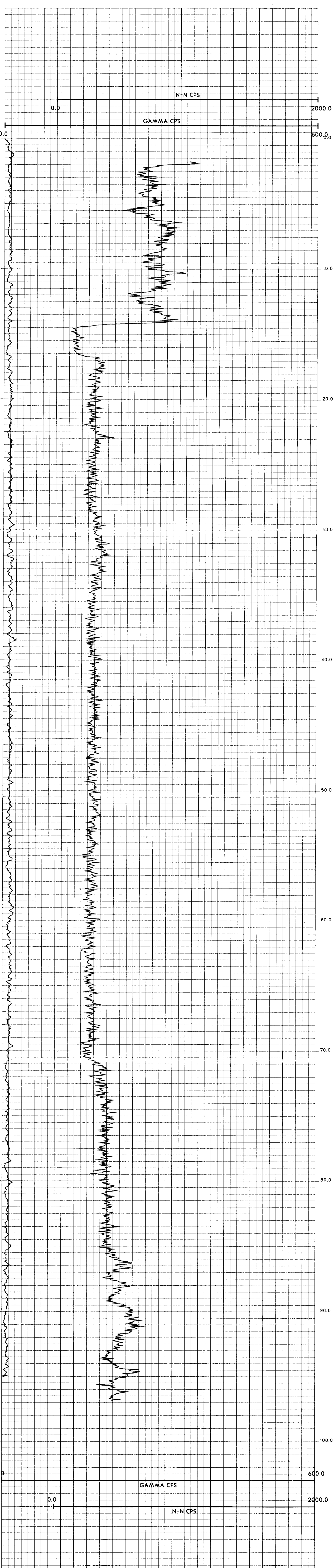


TOTAL: 106.56 TOTAL: 106.56

# Gulf Canada Resources Inc. Coal Division

## Geophysical Log

Datasource: <b>KPNLRDH85005</b>	Province: BC	Northing: 6344940.00	Lat: 571458		
Log Date: 85-03-25	Zone: 9	Easting: 504103.00	Long: 1285555		
Company: CENTURY	Measuring Point:	Elevation: 0.0			
Geologist: BARKER					
Scale: 1 to 100.0	Comments: 1. 2.				
Depth Range: 0.0 to 102.0					
True Thickness: NO					
Logs Plotted:	Axis Range	Axis Length	Smoothing Points	Tool	Comments
1. GAMMA CPS	0.0 to 600.0	24.0	23	9067	IN PIPE
2. N-N CPS	0.0 to 2000.0	20.0	7	9067	IN PIPE



GULF CANADA RESOURCES INC.  
 COAL DIVISION  
 KLAPPAN PROJECT  
 STRATIGRAPHIC LOG  
 KPN LR RDH85006

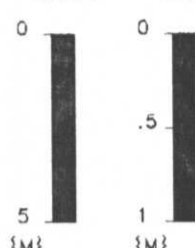
GEOLOGIST : BARKER

DATE : NOV 12/85

DRAWING NO. :

LITHOLOGIC SYMBOLS

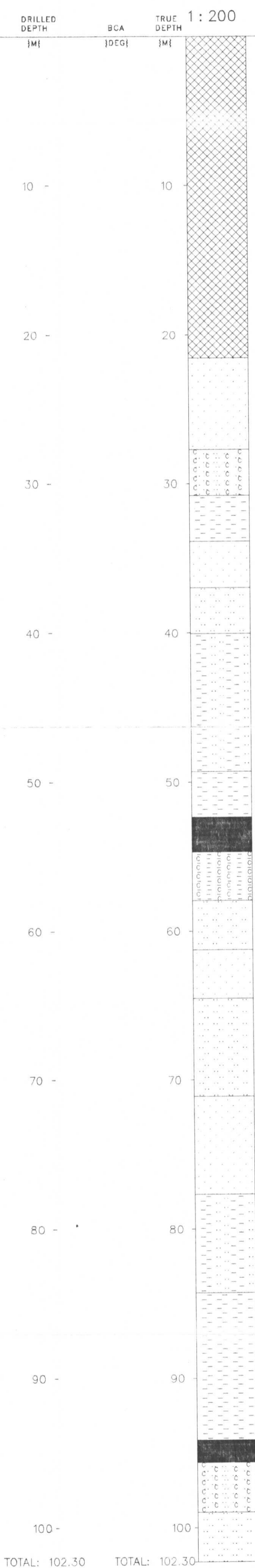
SCALE : 1:200 1:40



NORTHING: 6344103.0 N  
 EASTING: 503281.2 E

INCLINATION: 90.0°  
 BEARING: 0.0°

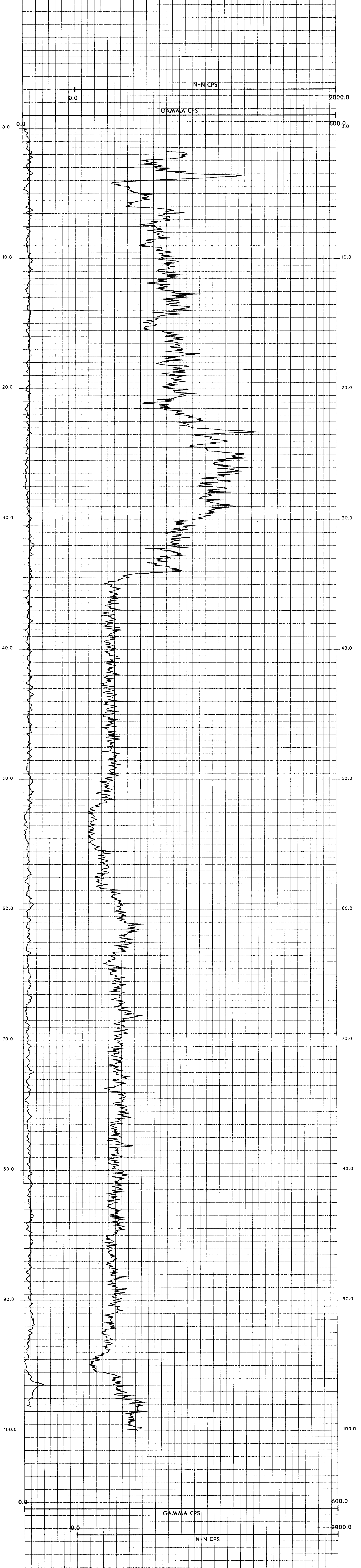
	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	CORE LOSS		FOSSIL BED

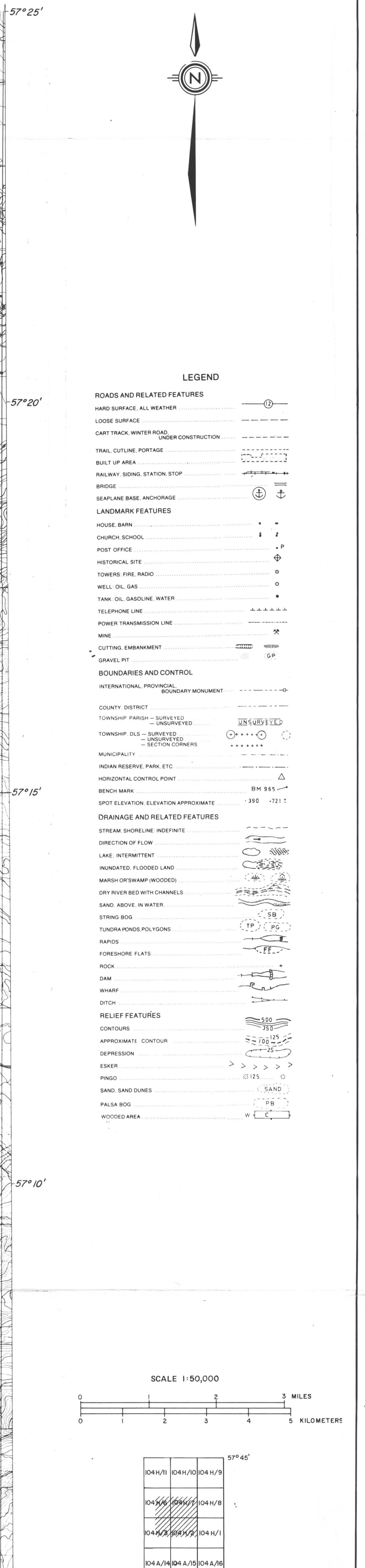
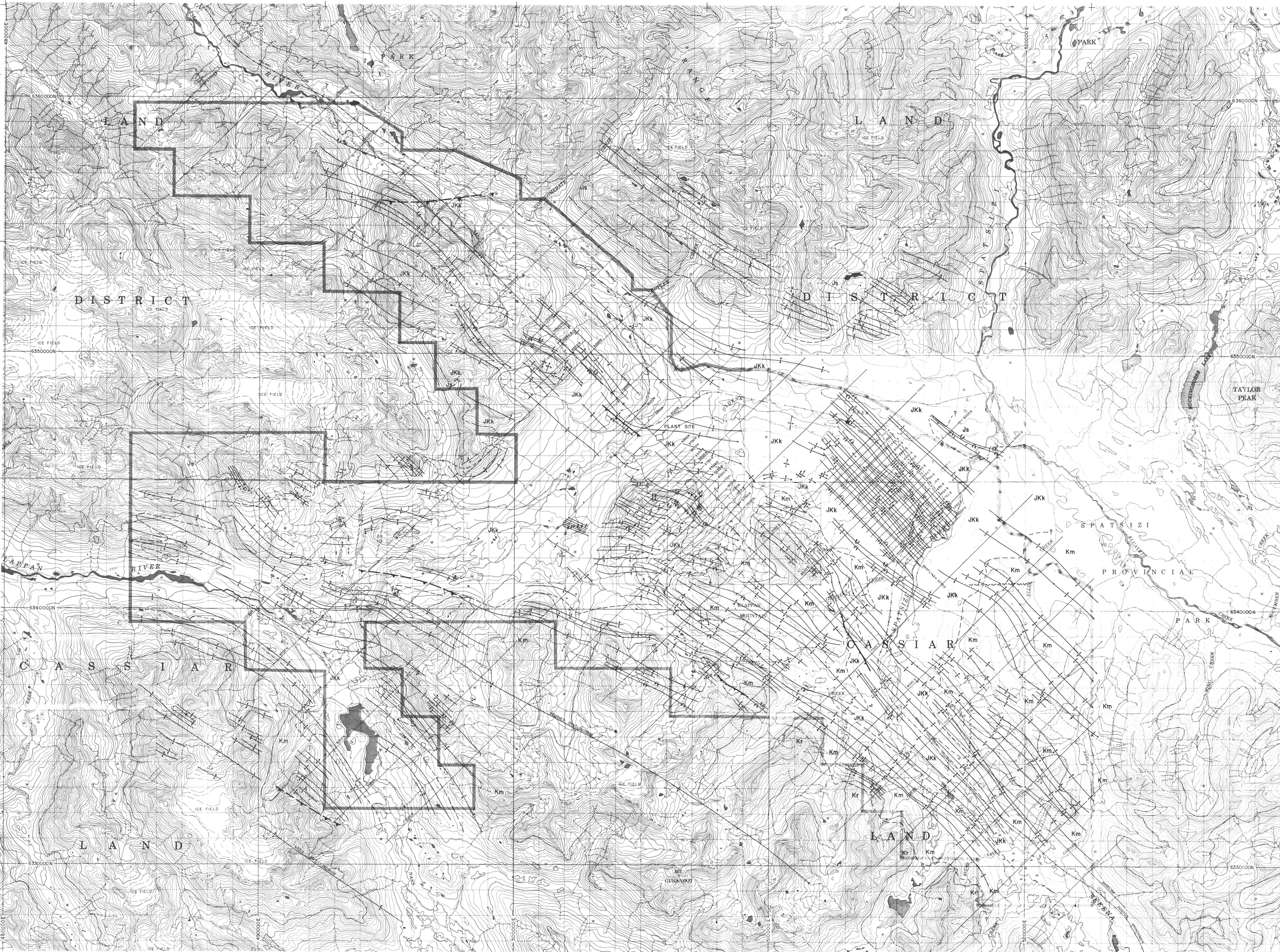


# Gulf Canada Resources Inc. Coal Division

## Geophysical Log

Datasource: <b>KPNLRDH85006</b>	Province: BC	Northing: 6344100.00	Lat: 571431		
Log Date: 85-03-27	Zone: 9	Easting: 503281.00	Long: 1285644		
Company: CENTURY	Measuring Point:	Elevation: 0.0			
Geologist: BARKER					
Scale: 1 to 100.0	Comments:				
Depth Range: 0.0 to 105.0	1.				
True Thickness: NO	2.				
Logs Plotted:	Axis Range	Axis Length	Smoothing Points	Tool	Comments
1. GAMMA CPS	0.0 to 600.0	24.0	23	9067	IN PIPE
2. N-N CPS	0.0 to 2000.0	20.0	7	9067	IN PIPE





**LEGEND**

**BOUNDARIES**

- LICENCE BOUNDARY
- GEOLOGICAL CONTACT (APPROXIMATE, INFERRED)
- COAL SEAM (DEFINED, INFERRED)
- ANTICLINE (DEFINED, APPROXIMATE) (ARROW INDICATES PLUNGE DIRECTION)
- SYNCLINE (DEFINED, APPROXIMATE) (ARROW INDICATES PLUNGE DIRECTION)
- OVERTURNED ANTICLINE (DEFINED, APPROXIMATE)
- OVERTURNED SYNCLINE (DEFINED, APPROXIMATE)
- MONOCLINE (DEFINED, APPROXIMATE)
- BEDDING (HORIZONTAL, INCLINED, OVERTURNED, VERTICAL, UPRIGHT, ESTIMATED)
- FOLIATIONS (INCLINED, VERTICAL, HORIZONTAL)
- JOINTS (INCLINED, VERTICAL, HORIZONTAL)
- THRUST FAULT (DEFINED, APPROXIMATE) (TEETH INDICATE UP/THRUST SIDE)
- FAULT (DEFINED, APPROXIMATE) (UP/THRUST, DOWN/THROWN SIDE)
- ADIT
- TRENCH
- COAL SPOIL
- DIAMOND ROTARY, WINKIE DRILL HOLE (VERTICAL, INCLINED WITH SURFACE PROJECTION)
- MEASURED SECTION
- SURVEY CAIRN
- CROSS SECTION LINE

**RHONDA SEQUENCE**

- Sequence of thick chert pebble conglomerates and minor gritty sandstones interbedded with an increasing number of siltstones and mudstones towards the basal contact. Large scale trough and lateral cross beds are common. Six species of plant fossils increase in abundance towards the basal gradational contact.

**MALLOCH SEQUENCE**

- Thick interbeds of mudstones, argillaceous siltstones, fine grained sandstones and thin interbeds of orange weathering nodular siltstones. Many conglomerate beds display large scale cross bedding and tend to be laterally discontinuous. Thick clean sandstone beds and thin coal seams increase in abundance towards the basal gradational contact. Twenty species of plant fossils exist within the sequence. Bivalves are rare.

**KLAPPAN SEQUENCE (main coal-bearing unit)**

- Fine to coarse grained sandstones interbedded with mudstones, siltstones, occasional thin bands of orange weathering calcareous siltstones, conglomerates and abundant coal seams. Conglomerate beds grade laterally into sandstones. Sandstones often display tabular or trough cross bedding. Rhynchonellid bryozoans occur in the middle of the sequence. Twenty-three species of pelecypods and twenty-two species of plants occur throughout. Petrified wood and rare cooping may be present towards the upper contact.

**SPATSIZI SEQUENCE**

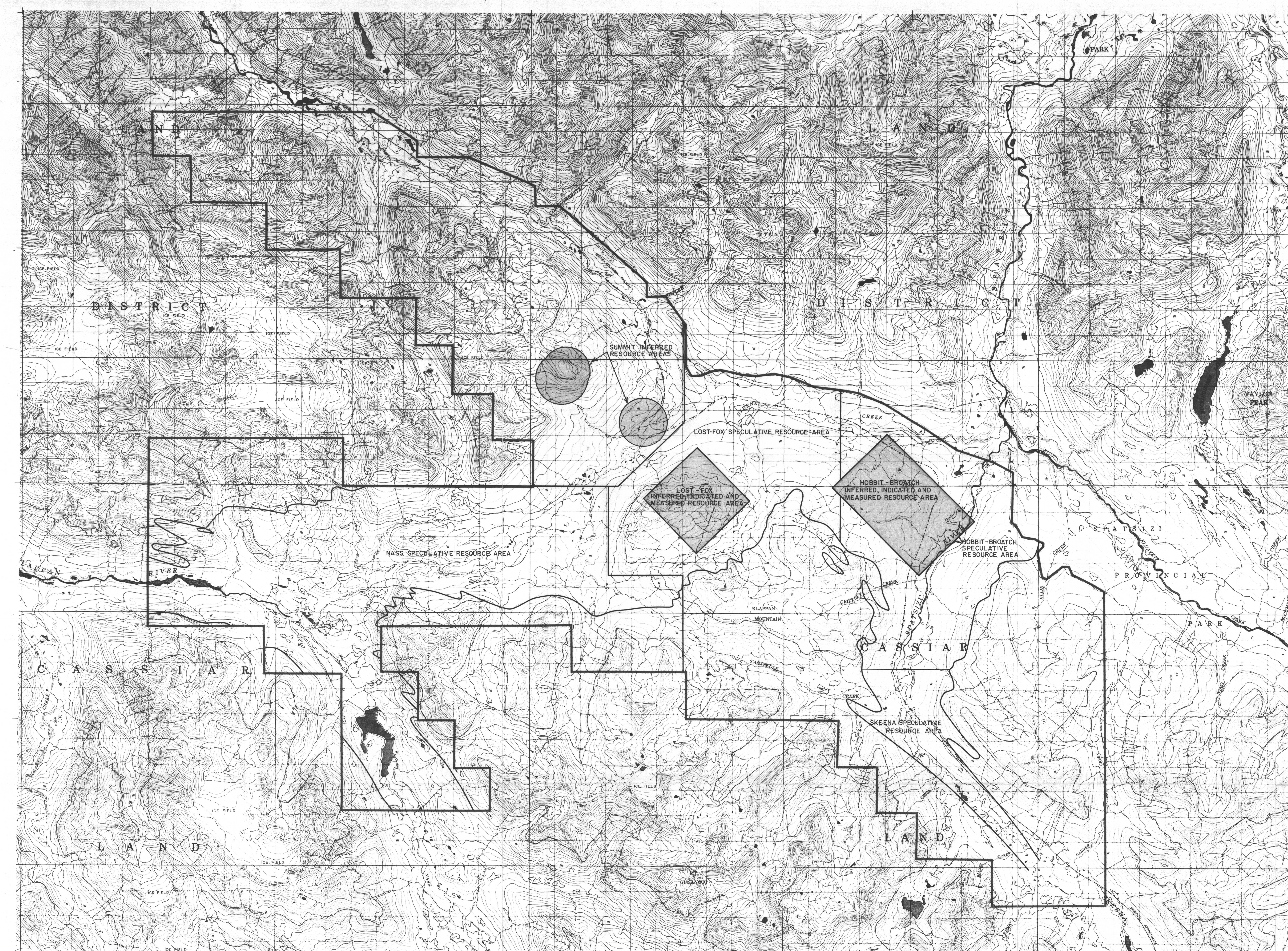
- Predominantly a marine sequence of interbedded mudstones, siltstones, sandstones and conglomerates. Carbonaceous mudstones, thin coal seams and chert pebble conglomerates are more abundant in the upper part of the sequence. Nineteen species of bivalves are present. Bivalves are rare. Plant debris may occur near the upper gradational contact.

**707**

**GULF CANADA RESOURCES INC.**  
Coal Division

**MT. KLAPPAN COAL PROPERTY**  
1985  
GEOLOGY MAP

PREPARED BY: E.S., K.J., S.M., J.T. DRAWING No. KPN 85 001  
APPROVED BY: E.S., K.J. DATE: FEB. 1986



57°25'  
57°20'  
57°15'  
57°10'

**LEGEND**

**ROADS AND RELATED FEATURES**

HARD SURFACE, ALL WEATHER

LOOSE SURFACE

CART TRACK, WATER ROAD

TRAIL, CUTLINE, PORTAGE

BUILT UP AREA

RAILWAY, STATION, STOP

BRIDGE

SEAPLANE BASE, ANCHORAGE

**LANDMARK FEATURES**

HOUSE, BARN

CHURCH, SCHOOL

POST OFFICE

HISTORICAL SITE

TOWER, FIRE, RADIO

WELL, OIL, GAS

TANK, OIL, GASOLINE, WATER

TELEPHONE LINE

POWER TRANSMISSION LINE

RAIL

CUTTING, EMBANKMENT

GRAVEL, PIT

**BOUNDARIES AND CONTROL**

INTERNATIONAL, PROVINCIAL

BOUNDARY MONUMENT

COUNTY, DISTRICT

TOWNSHIP, PARISH - SURVEYED

TOWNSHIP, O.L.S. - SURVEYED

MUNICIPALITY

INDIAN RESERVE, PARK, ETC.

HORIZONTAL CONTROL POINT

BENCH MARK

SPOT ELEVATION, ELEVATION APPROXIMATE

**DRAINAGE AND RELATED FEATURES**

STREAM, SHORELINE, INDEFINITE

DIRECTION OF FLOW

LAKE, INTERMITTENT

INDICATED FLOODED LAND

MARSH, OPEN, WOODED

DRY RIVER BED WITH CHANNELS

SAND, ABOVE, IN WATER

STRAND, BOG

TUNDRA, PONDS, POLYGONS

RAPIDS

FORESHORE FLATS

ROCK

DAM

WHARF

DITCH

**RELIEF FEATURES**

CONTOURS

APPROXIMATE CONTOUR

DEPRESSION

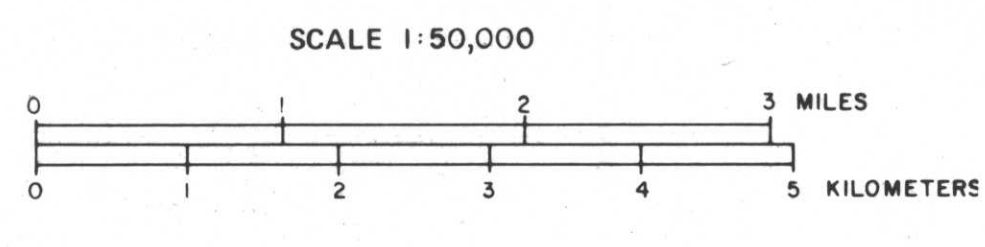
ESKER

PINGO

SAND, SAND DUNES

PALSA, BOG

WOODED AREA



104N/1	104N/2	104N/3	104N/4	104N/5	104N/6	104N/7	104N/8
104N/9	104N/10	104N/11	104N/12	104N/13	104N/14	104N/15	104N/16
104A/1	104A/2	104A/3	104A/4	104A/5	104A/6	104A/7	104A/8

129°20'00" 129°15'00" 129°00'00" 128°45'00" 128°30'00" 128°15'00" 128°00'00"

707

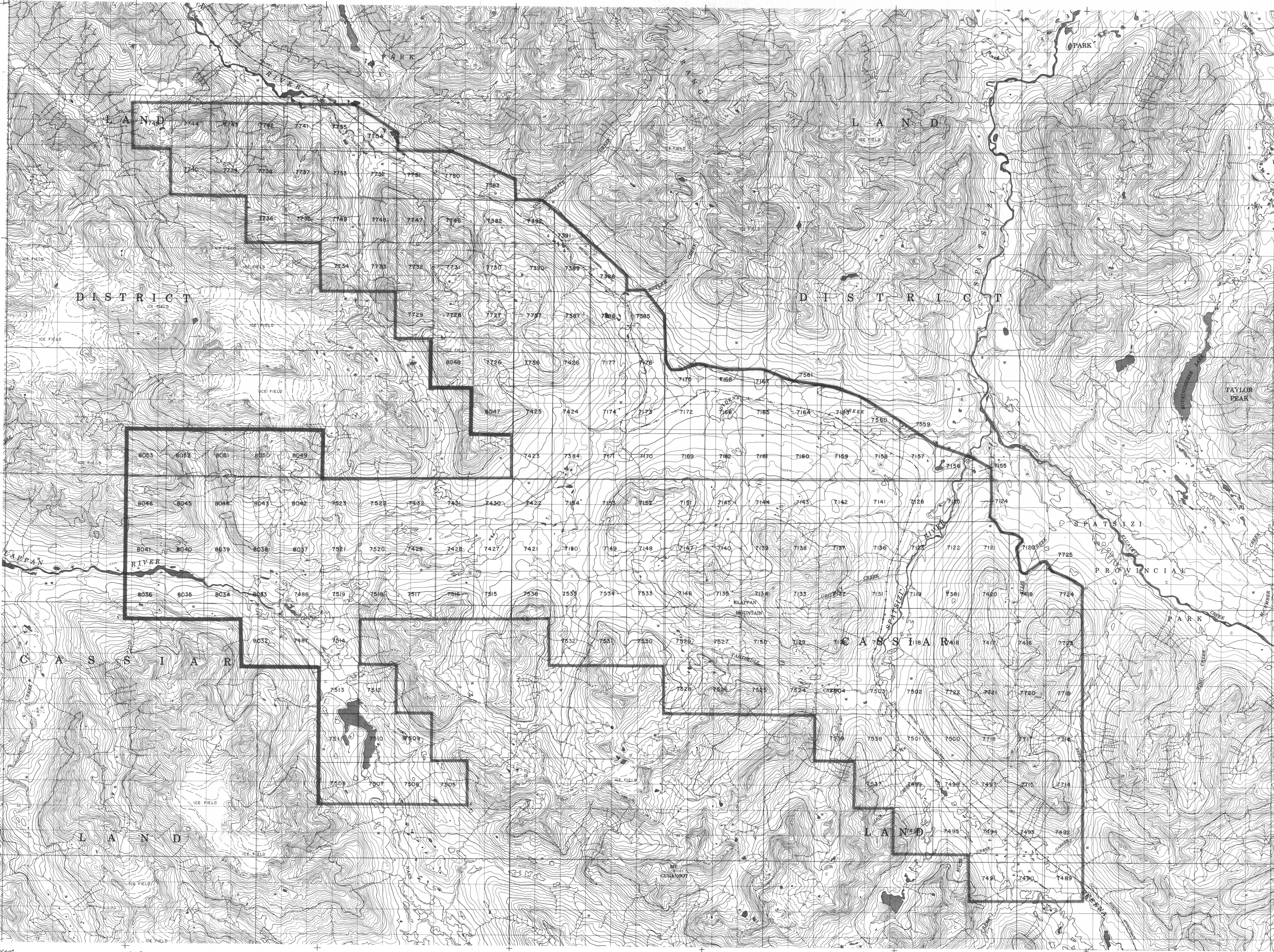
**GULF CANADA RESOURCES INC.**  
Coal Division

CALGARY ALBERTA

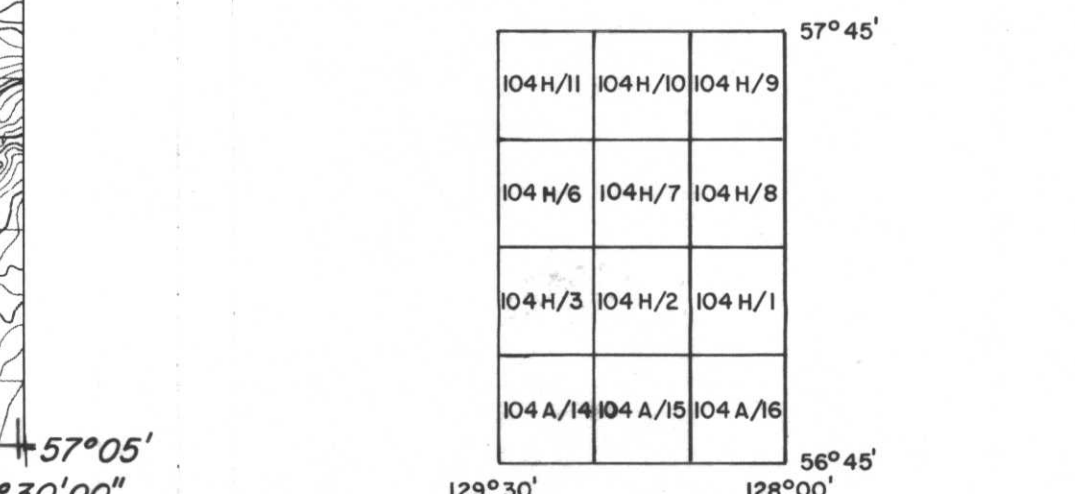
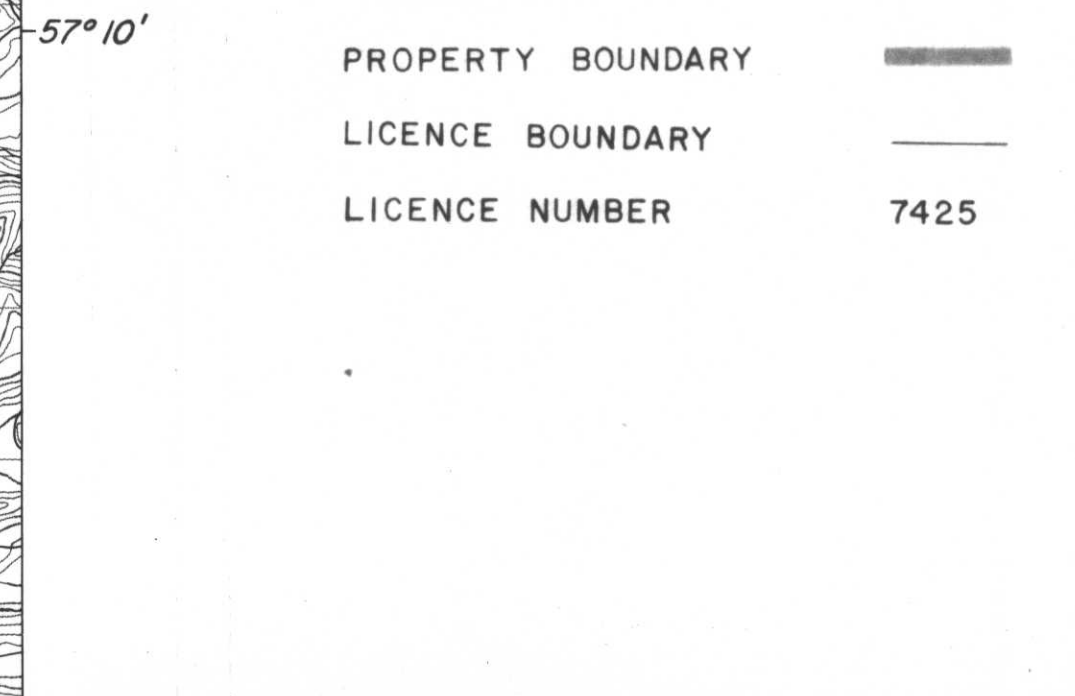
**MOUNT KLAPPAN COAL PROPERTY**  
1985  
COAL RESOURCE AREA MAP

PREPARED BY: S. MACLEOD  
APPROVED BY: E. SWANBERGSSON

DRAWING No. KPN85002  
DATE: FEB. 1986



- LEGEND**
- ROADS AND RELATED FEATURES
    - HARD SURFACE ALL WEATHER
    - LOOSE SURFACE
    - CART TRACK, WINTER ROAD
    - TRAIL, CUTLINE, PORTAGE
    - BUILT UP AREA
    - PAVING, STATION STOP
    - BRIDGE
    - SEAPLANE BASE, ANCHORAGE
  - LANDMARK FEATURES
    - HOUSE, BARN
    - CHURCH, SCHOOL
    - HISTORICAL SITE
    - TOWERS, FIRE, RADIO
    - WELL, OIL, GAS
    - TANK, OIL, GASOLINE, WATER
    - TELEPHONE LINE
    - POWER TRANSMISSION LINE
    - MINE
    - CUTTING, EMBANKMENT
    - GRAVEL PIT
  - BOUNDARIES AND CONTROL
    - INTERNATIONAL, PROVINCIAL, COUNTY DISTRICT
    - TOWNSHIP BOUNDARY - SURVEYED
    - TOWNSHIP D.L.S. - SURVEYED
    - MUNICIPALITY
    - INDIAN RESERVE, PARK, SITE
    - HORIZONTAL CONTROL POINT
    - BENCH MARK
    - SPOT ELEVATION, ELEVATION APPROXIMATE
  - DRAINAGE AND RELATED FEATURES
    - STREAM, SHORELINE, HOEFORTE
    - DIRECTION OF FLOW
    - LAKE, INTERMITTENT
    - UNDRAINED FLOODED LAND
    - MARSH OR SWAMP (WOODED)
    - DRY RIVER BED WITH CHANNELS
    - SAND, MUD, IN WATER
    - STRONG BOG
    - TUNDRA, MOSS, POLYTONS
    - RAPIDS
    - FORESHORE FLATS
    - ROCK
    - DAM
    - WHARF
    - DITCH
  - RELIEF FEATURES
    - CONTOUR
    - APPROXIMATE CONTOUR
    - DEPRESSION
    - ESKER
    - FRINGE
    - SAND, SAND DUNES
    - PALSA BOG
    - WOODED AREA



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**GULF CANADA RESOURCES INC.**

Coal Division

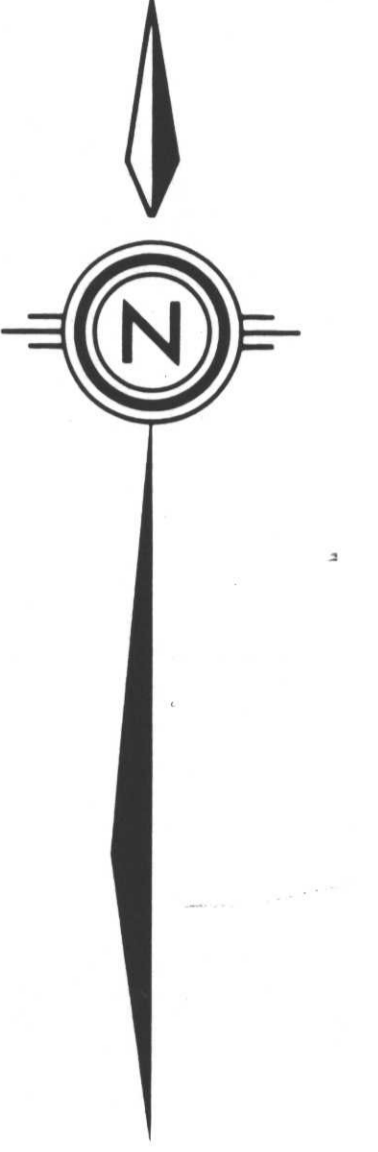
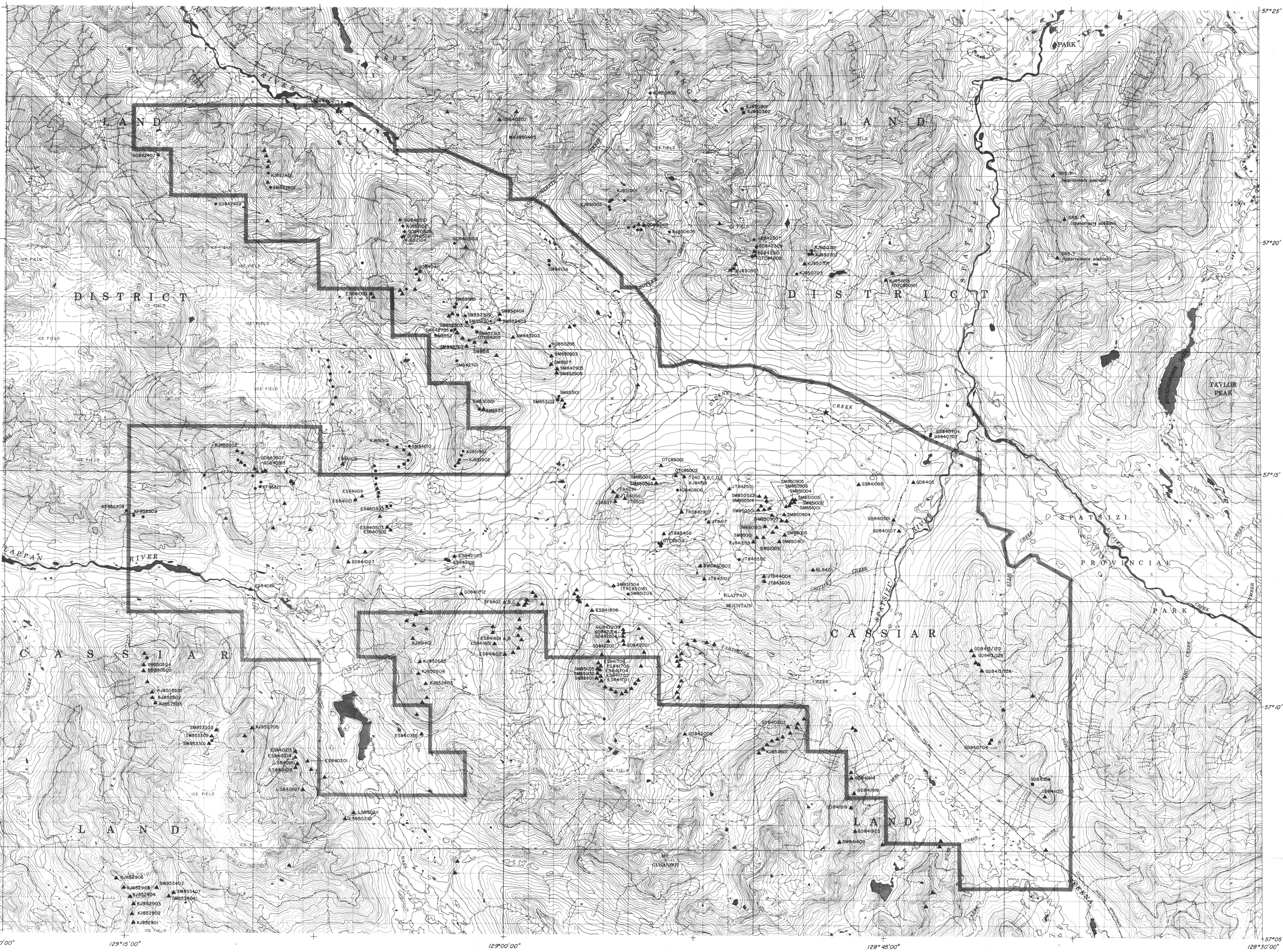
CALGARY ALBERTA

**MOUNT KLAPPAN COAL PROPERTY**

**1985**

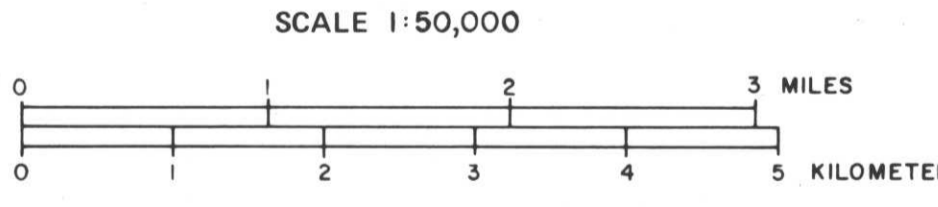
**COAL LICENCE MAP**

PREPARED BY: R I  
APPROVED BY: E.S., V.L.D., G.S. DATE: FEB. 1986 DRAWING No. KPN85003



**LEGEND**

<b>ROADS AND RELATED FEATURES</b>	
HARD SURFACE ALL WEATHER	—
LOOSE SURFACE	- - -
CENTRELINE INVERTED ROAD	- · - · -
UNDER CONSTRUCTION	- · - · -
TRAIL CUTLINE PORTAGE	- · - · -
BUILT UP AREA	▨
RAILWAY STATION STOP	⊕
BRIDGE	⊕
SEAPLANE BASE ANCHORAGE	⊕
<b>LANDMARK FEATURES</b>	
HOUSE BARR.	⊕
CHURCH SCHOOL	⊕
POST OFFICE	⊕
HISTORICAL SITE	⊕
TOWER FIRE WIND	⊕
WELL OIL GAS	⊕
TANK OIL GASOLINE WATER	⊕
TELEPHONE LINE	— · — · —
POWER TRANSMISSION LINE	— · — · —
LINE	— · — · —
CUTLINE EMBANKMENT	— · — · —
GRAVEL PIT	⊕
<b>BOUNDARIES AND CONTROL</b>	
INTERNATIONAL PROVINCIAL	— · — · —
BOUNDARY MONUMENT	⊕
<b>COUNTY DISTRICT</b>	
TOWNSHIP PARISH — SURVEYED	— · — · —
UNSURVEYED	- - -
TOWNSHIP DLS — SURVEYED	— · — · —
UNSURVEYED	- - -
MUNICIPALITY	— · — · —
SECTION CORNERS	⊕
<b>INDIAN RESERVE PARK ETC</b>	
HORIZONTAL CONTROL POINT	⊕
BENCH MARK	⊕
SPOT ELEVATION APPROXIMATE	350 - 721
<b>DRAINAGE AND RELATED FEATURES</b>	
STREAM SHORELINE INDEFINITE	— · — · —
DIRECTION OF FLOW	— · — · —
LAKE INTERMITTENT	⊕
UNDRAINED FLOODS LAKE	⊕
MARSH OR SWAMP (WOODED)	⊕
DRY COVERED WITH CHANNELS	⊕
SAND ABOVE IN WATER	⊕
STRONG BOG	⊕
TURBIDITY POLYTONS	⊕
RAPIDS	⊕
FORESHORE FLATS	⊕
ROCK	⊕
DAM	⊕
WHARF	⊕
DITCH	⊕
<b>RELIEF FEATURES</b>	
CONTOURS	— · — · —
APPROXIMATE CONTOUR	— · — · —
DEPRESSION	— · — · —
ESKER	— · — · —
FRISO	⊕
SAND SAND DUNES	⊕
PALSA BOG	⊕
WOODED AREA	⊕
<b>PROPERTY BOUNDARY</b>	
FIELD CAMP LOCATION	⊕
FLORA MACROFOSSILS	⊕
FAUNA MACROFOSSILS	⊕
TRACE FOSSILS	⊕



04H/1	04H/2	04H/3	04H/4	04H/5
04H/6	04H/7	04H/8	04H/9	04H/10
04H/11	04H/12	04H/13	04H/14	04H/15
04H/16	04H/17	04H/18	04H/19	04H/20

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**GULF CANADA RESOURCES INC.**  
 Coal Division  
 CALGARY ALBERTA

**MT. KLAPPAN COAL PROPERTY**

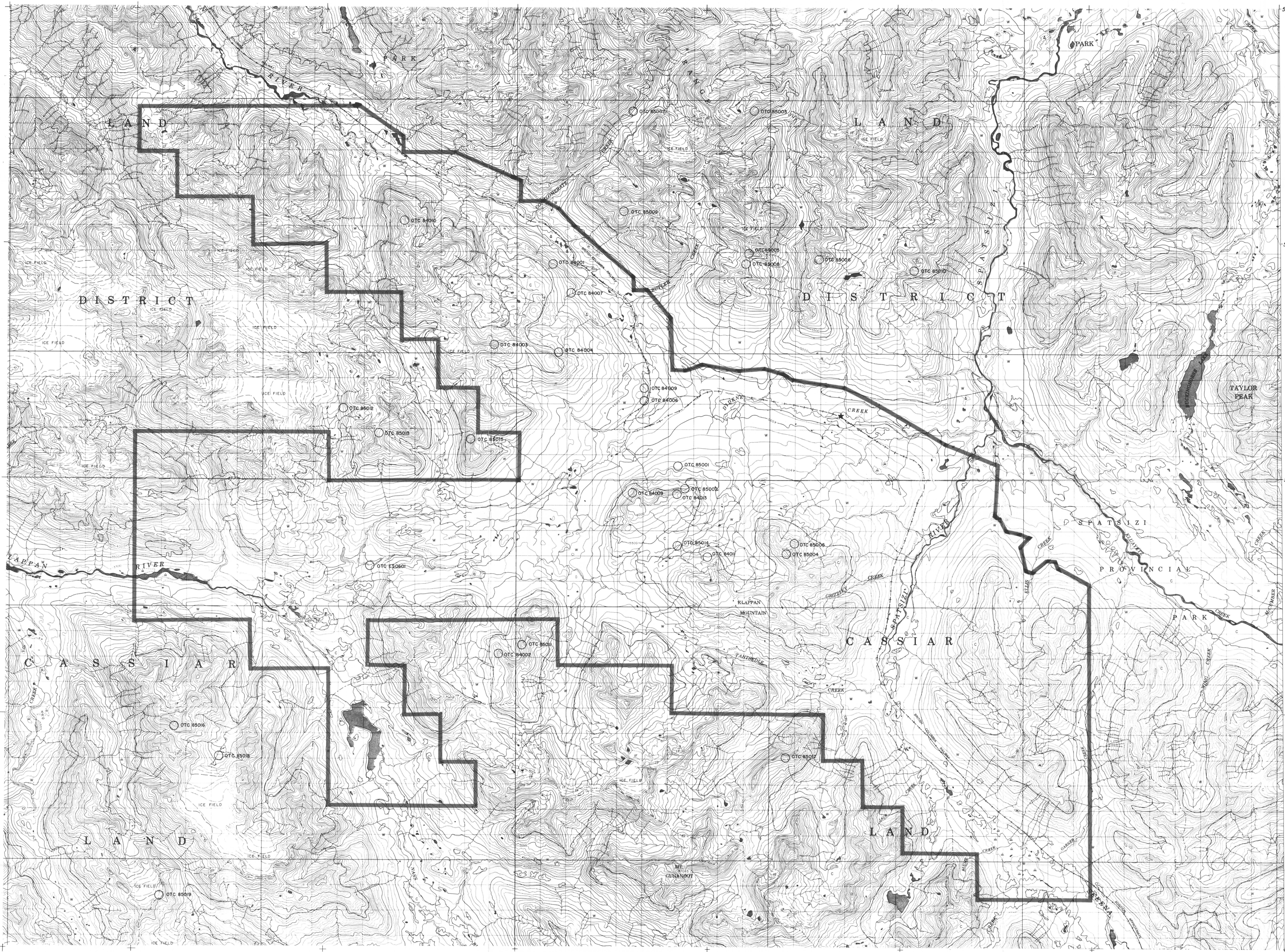
**1984 - 1985 FOSSIL LOCATION MAP**

PREPARED BY: S. MACLEOD  
 APPROVED BY: K. JENNER

DATE: NOV. 1985

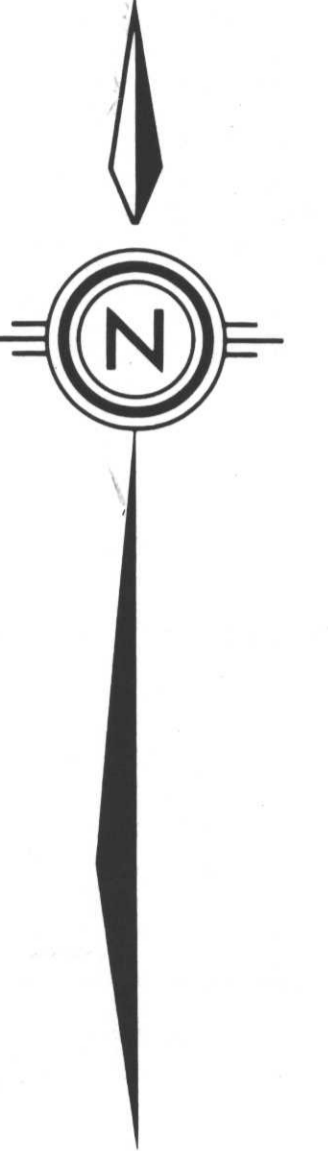
DRAWING No. KPN85004





57°25'  
57°20'  
57°15'  
57°10'  
57°05'

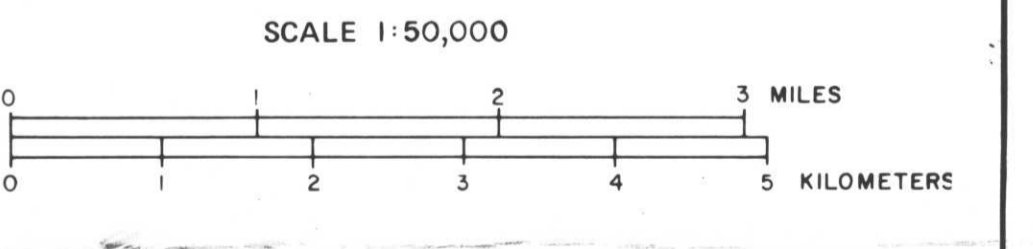
128°20'00"  
128°15'00"  
128°00'00"  
128°45'00"  
128°30'00"



**LEGEND**

<b>ROADS AND RELATED FEATURES</b>	
HARD SURFACE, ALL WEATHER	—
LOOSE SURFACE	- - -
CART TRACK, WATERBURY	- · - · -
TRAIL, OUTLINE PORTAGE	- · - · -
BUILT UP AREA	▨
RAILWAY, BOND, STATION STOP	—
BRIDGE	—
SEAPLANE BASE, ANCHORAGE	—
<b>LANDMARK FEATURES</b>	
HOUSE BANK	—
CHURCH, SCHOOL	—
POST OFFICE	—
HISTORICAL SITE	—
TOWERS, PIPE, RADIO	—
WELL, OIL, GAS	—
TANK, OIL, GASOLINE, WATER	—
TELEPHONE LINE	—
POWER TRANSMISSION LINE	—
MINE	—
CUTTING, EMBANKMENT	—
GRAVEL, RT	—
<b>BOUNDARIES AND CONTROL</b>	
INTERNATIONAL, PROVINCIAL	—
COUNTY, DISTRICT	—
TOWNSHIP PARISH - SURVEYED	—
TOWNSHIP OLS - SURVEYED	—
MUNICIPALITY	—
INDIAN RESERVE, PARK, ETC.	—
HORIZONTAL CONTROL POINT	—
BENCH MARK	—
SPOT ELEVATION, ELEVATION APPROXIMATE	—
<b>DRAINAGE AND RELATED FEATURES</b>	
DIRECTION OF FLOW	—
LAKE, INTERMITTENT	—
UNDRAINED FLOODED LAND	—
WATERCOURSE, DAM, WEIR	—
DRY RIVER BED WITH CHANNELS	—
SAND ABOVE IN WATER	—
STRONG BOG	—
TUNDRA MOUNDS, POLYSONS	—
BARNS	—
FORESHORE FLATS	—
ROCK	—
DAM	—
WEIR	—
STICK	—
<b>RELIEF FEATURES</b>	
CONTOURS	—
APPROXIMATE CONTOUR	—
DEPRESSION	—
SWAMP	—
FRINGE	—
SAND, SAND DUNES	—
PALSA BOG	—
WOODED AREA	—

**PROPERTY BOUNDARY**  
MEASURED SECTION  
FIELD CAMP LOCATION



104 N/1	104 N/2	104 N/3	104 N/4	104 N/5
104 N/6	104 N/7	104 N/8	104 N/9	104 N/10
104 N/11	104 N/12	104 N/13	104 N/14	104 N/15
104 N/16	104 N/17	104 N/18	104 N/19	104 N/20

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**GULF CANADA RESOURCES INC.**  
Coal Division

CALGARY ALBERTA

**MT. KLAPPAN COAL PROPERTY**

1981 - 1985 MEASURED SECTION MAP

PREPARED BY: S. MACLEOD  
APPROVED BY: K. JENNER

DRAWING No. KPN 85005  
DATE: NOV. 1985