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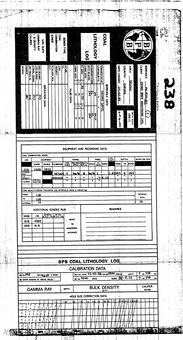
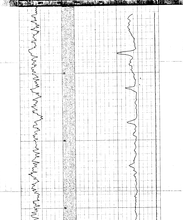
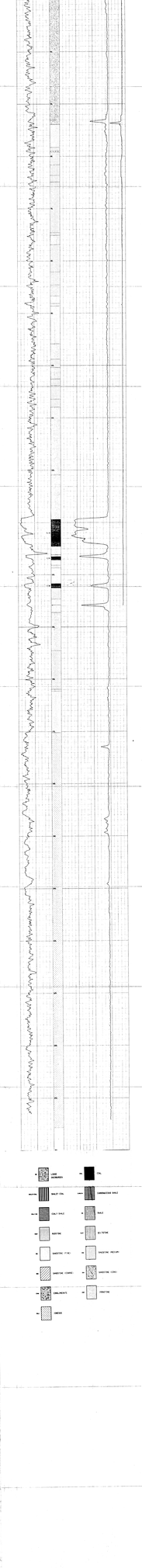
DIRECTIONAL SURVEY

TW-82

LOG DEPTH	0140.00	
TRUE DEPTH	0138.00	
TILT	10.53	DG
BEARING	36.60	DG
NORTHING	+017.26	
EASTING	+011.33	
LOG DEPTH	0130.00	
TRUE DEPTH	0128.17	
TILT	10.33	DG
BEARING	36.12	DG
NORTHING	+015.79	
EASTING	+010.24	
LOG DEPTH	0120.00	
TRUE DEPTH	0118.33	
TILT	10.08	DG
BEARING	35.79	DG
NORTHING	+014.34	
EASTING	+009.18	
LOG DEPTH	0110.00	
TRUE DEPTH	0108.48	
TILT	8.11	DG
BEARING	33.18	DG
NORTHING	+012.92	
EASTING	+008.15	
LOG DEPTH	0100.00	
TRUE DEPTH	0098.58	
TILT	9.08	DG
BEARING	34.18	DG
NORTHING	+011.74	
EASTING	+007.38	
LOG DEPTH	0090.00	
TRUE DEPTH	0088.71	
TILT	10.76	DG
BEARING	37.77	DG
NORTHING	+010.44	
EASTING	+006.49	
LOG DEPTH	0080.00	
TRUE DEPTH	0078.89	
TILT	11.98	DG
BEARING	34.06	DG
NORTHING	+008.96	
EASTING	+005.35	
LOG DEPTH	0070.00	
TRUE DEPTH	0069.11	
TILT	13.63	DG
BEARING	30.84	DG
NORTHING	+007.24	
EASTING	+004.19	
LOG DEPTH	0060.00	
TRUE DEPTH	0059.39	
TILT	12.44	DG
BEARING	31.06	DG
NORTHING	+005.22	
EASTING	+002.98	
LOG DEPTH	0050.00	
TRUE DEPTH	0049.62	
TILT	11.49	DG
BEARING	31.00	DG
NORTHING	+003.37	
EASTING	+001.87	
LOG DEPTH	0040.00	
TRUE DEPTH	0039.82	
TILT	10.76	DG
BEARING	26.90	DG
NORTHING	+001.66	
EASTING	+000.84	
LOG DEPTH	0030.00	
TRUE DEPTH	0030.00	
TILT	9.85	DG
BEARING	22.46	DG
NORTHING	+000.00	
EASTING	+000.00	


238




SPB-(DALL) LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
BULK DENSITY

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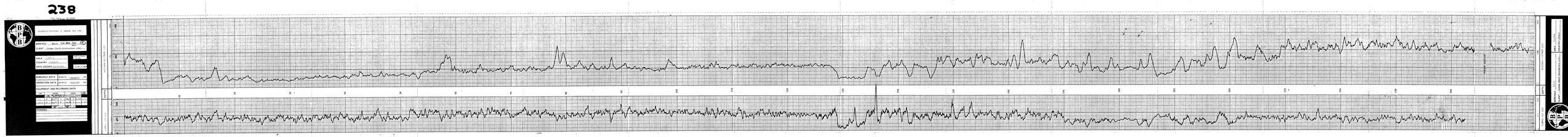

BPB
Geophysical Services & Data Pty Ltd
SURVEYOR
CLIENT
DATA
COUNTRY
DATE LOGGED
MONTHLY DATA
OPERATION DATA
EQUIPMENT AND RECORDING DATA
DEPTH

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Tk-Telkwa 82(3)A

BPB

BOREHOLE 82-1 Tw-82D-20/ (3)
CLIENT Crows Nest Resources Ltd

AREA TELKWA
COUNTRY CANADA
DATE LOGGED 23-02-82

DEPTH SCALE 1:1
3 OF 4 LOGS

COAL QUALITY LOG

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: GAMMA RAY L.S. DENSITY

BOREHOLE DATA	REFER TO LITHOLOGY LOG
OPERATION DATA	REFER TO LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA	
COAL COMBINATION SONDE	

LOG	TAPING			SIDEWALL POSITION		
	TAPED	RECORDED	SPEED	PANEL		COAL COEFF.
GAMMA RAY	Y	2m/hr	R	SPEED	T.C. SECS.	NORM
L.S. DENSITY	Y	2m/hr	R	2m/hr	2	--- 1.61
SOURCE SONDE AND CALIBRATION				2m/hr	1	6.12 ---

REFER TO LITHOLOGY LOG

COAL QUALITY LOG INTERVALS

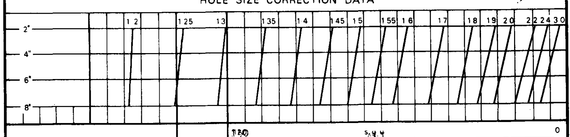
FROM	138		
TO	128		
INTERVAL	10		
FROM			INTERVAL
TO			TOTAL
INTERVAL			

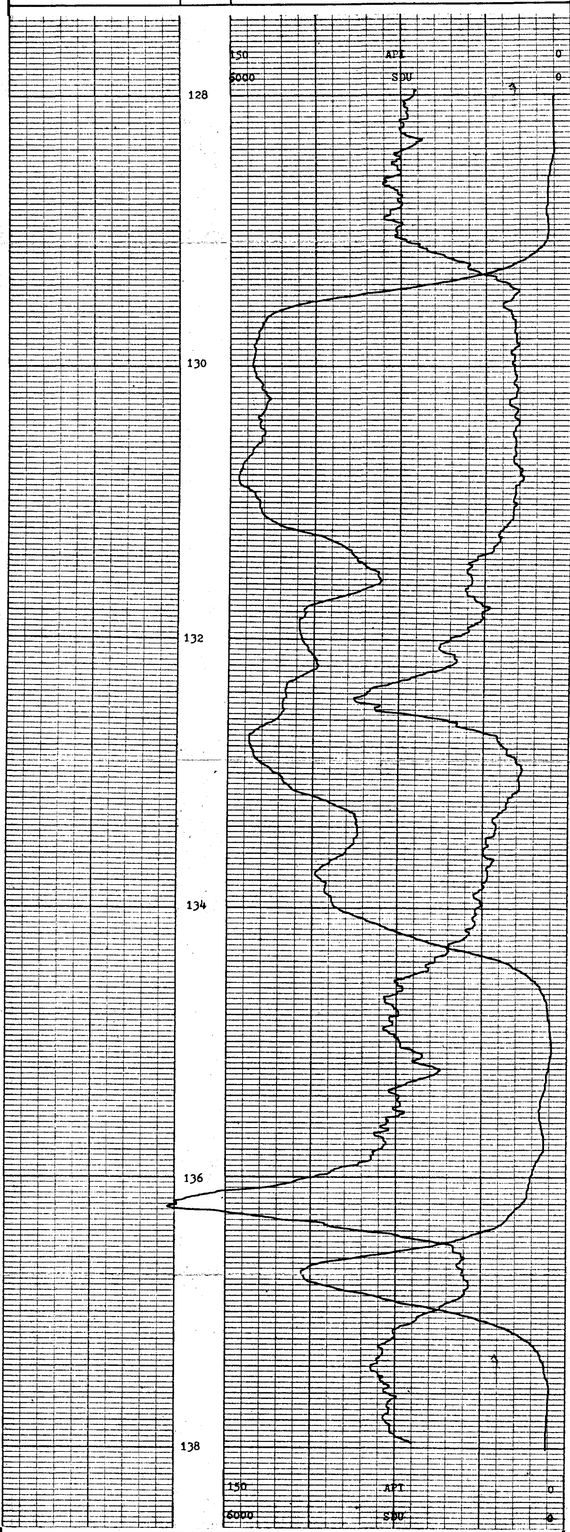
REMARKS

BPB COAL QUALITY LOG

DEPTH	GAMMA RAY
	COAL BULK DENSITY g/cm³

HOLE SIZE CORRECTION DATA





	6000 sdu 0
	130 sdu 0
	COAL BULK DENSITY g/cm³
DEPTH	GAMMA RAY

BPB

BOREHOLE 82-1 AREA TELKWA
CLIENT Crows Nest Resources Ltd COUNTRY CANADA

COAL QUALITY LOG

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TK-Telkwa 82(3)A

BOREHOLE Hour Tw-82-24 (4)
CLIENT Crows Nest Resources Ltd

AREA TELKWA
COUNTRY Canada
DATE LOGGED 23-02-82

DEPTH SCALE 20:1
1 OF 4 LOGS

SEAM THICKNESS LOG

BOREHOLE DATA — REFER TO LITHOLOGY LOG
OPERATION DATA — REFER TO LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA
COAL COMBINATION SONDE

LOG	TAPING				SIDEWALL POSITION	
	LOG TAPED	RECORD SPEED	DISPLAY SPEED	PANEL SELS	NORM	CALIPER COEFF
CALIPER	Y	2m/M	R	2m/M	.3	---
B.R. DENSITY	Y	2m/M	R	2m/M	3	7.56

SOURCE SONDE AND CALIBRATION
REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG INTERVALS

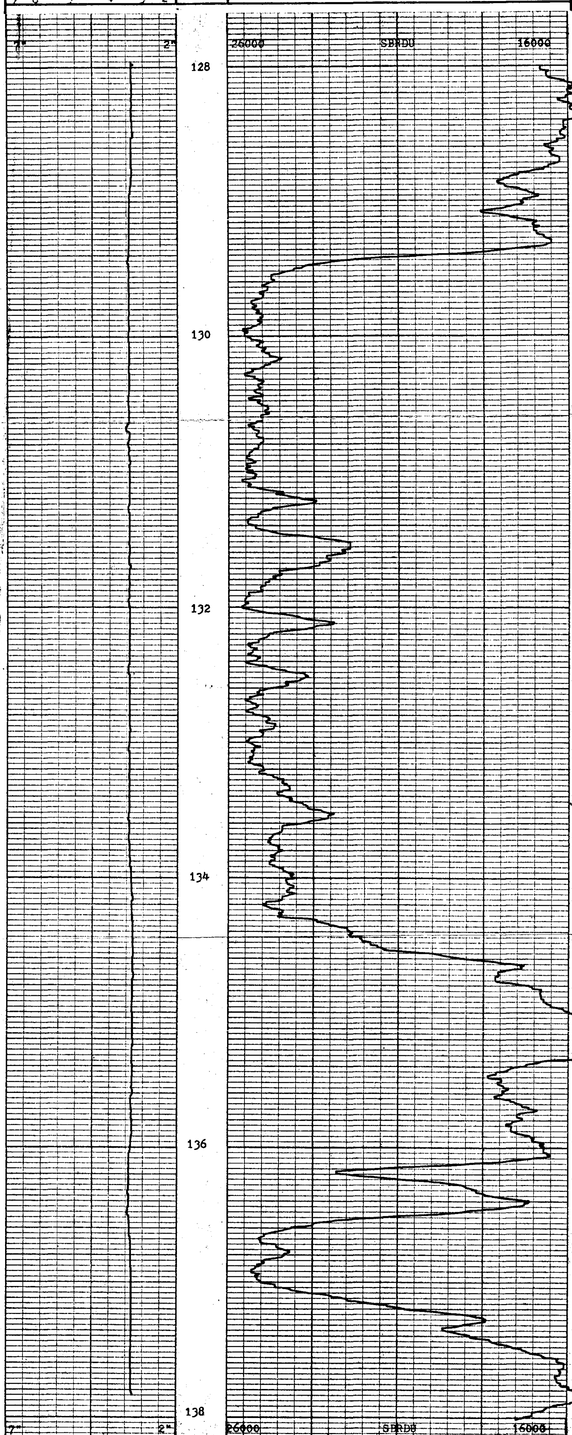
FROM	138		
TO	128		
INTERVAL	10		
FROM		INTERVAL	
TO		TOTAL	
INTERVAL			

REMARKS

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: CALIPER B.R. DENSITY

B P B SEAM THICKNESS LOG



BOREHOLE 82-1
CLIENT Crows Nest Resources Ltd.
AREA TELKWA
COUNTRY Canada

SEAM THICKNESS LOG

MY 88002 R

rectional Survey

TW-82D-202

TW - 82D - 202

TK-Tekkan 5913H

OG DEPTH	0290.00	
RUE DEPTH	0284.78	
ILT	13.85	DG
EARING	.70	DG
ORTHING	+050.63	
ASTING	-001.36	
OG DEPTH	0280.00	
RUE DEPTH	0275.07	
ILT	13.28	DG
EARING	357.22	DG
ORTHING	+048.23	
ASTING	-001.39	
OG DEPTH	0270.00	
RUE DEPTH	0265.34	
ILT	13.44	DG
EARING	359.04	DG
ORTHING	+045.94	
ASTING	-001.27	
OG DEPTH	0260.00	
RUE DEPTH	0255.61	
ILT	14.16	DG
EARING	5.08	DG
ORTHING	+043.62	
ASTING	-001.24	
OG DEPTH	0250.00	
RUE DEPTH	0245.91	
ILT	14.79	DG
EARING	10.67	DG
ORTHING	+041.18	
ASTING	-001.45	
OG DEPTH	0240.00	
RUE DEPTH	0236.24	
ILT	14.26	DG
EARING	7.43	DG
ORTHING	+038.67	
ASTING	-001.93	
OG DEPTH	0230.00	
RUE DEPTH	0226.55	
ILT	13.43	DG
EARING	1.67	DG
ORTHING	+036.22	
ASTING	-002.25	
OG DEPTH	0220.00	
RUE DEPTH	0216.82	
ILT	13.67	DG
EARING	2.19	DG
ORTHING	+033.90	
ASTING	-002.31	

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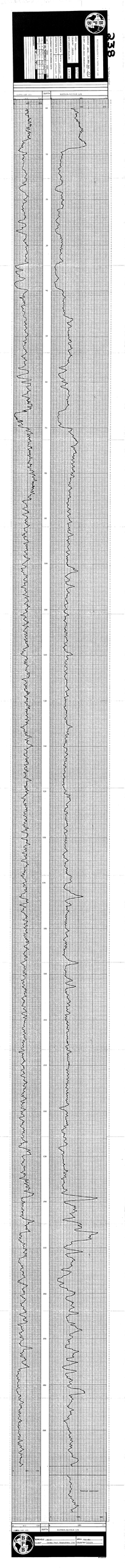
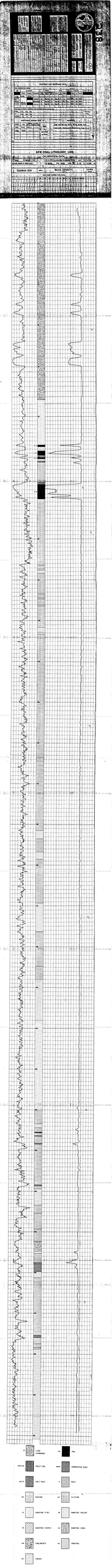
LOG DEPTH	0210.00	
TRUE DEPTH	0207.10	
TILT	13.22	DG
BEARING	.17	DG
NORTHING	+031.54	
EASTING	-002.40	
LOG DEPTH	0200.00	
TRUE DEPTH	0197.37	
TILT	12.01	DG
BEARING	354.89	DG
NORTHING	+029.25	
EASTING	-002.41	
LOG DEPTH	0190.00	
TRUE DEPTH	0187.59	
TILT	11.20	DG
BEARING	350.97	DG
NORTHING	+027.18	
EASTING	-002.23	
LOG DEPTH	0180.00	
TRUE DEPTH	0177.78	
TILT	10.77	DG
BEARING	349.22	DG
NORTHING	+025.26	
EASTING	-001.92	
LOG DEPTH	0170.00	
TRUE DEPTH	0167.96	
TILT	10.12	DG
BEARING	350.77	DG
NORTHING	+023.42	
EASTING	-001.57	
LOG DEPTH	0160.00	
TRUE DEPTH	0158.12	
TILT	8.45	DG
BEARING	353.76	DG
NORTHING	+021.69	
EASTING	-001.29	
LOG DEPTH	0150.00	
TRUE DEPTH	0148.23	
TILT	6.81	DG
BEARING	358.85	DG
NORTHING	+020.22	
EASTING	-001.13	
LOG DEPTH	0140.00	
TRUE DEPTH	0138.30	
TILT	7.77	DG
BEARING	356.17	DG
NORTHING	+019.04	
EASTING	-001.11	

LOG DEPTH	0130.00	
TRUE DEPTH	0128.39	
TILT	11.19	DG
BEARING	354.29	DG
NORTHING	+017.69	
EASTING	-001.02	
LOG DEPTH	0120.00	
TRUE DEPTH	0118.58	
TILT	10.65	DG
BEARING	356.26	DG
NORTHING	+015.75	
EASTING	-000.82	
LOG DEPTH	0110.00	
TRUE DEPTH	0108.75	
TILT	8.60	DG
BEARING	353.42	DG
NORTHING	+013.91	
EASTING	-000.70	
LOG DEPTH	0100.00	
TRUE DEPTH	0098.86	
TILT	8.41	DG
BEARING	353.74	DG
NORTHING	+012.42	
EASTING	-000.53	
LOG DEPTH	0090.00	
TRUE DEPTH	0088.97	
TILT	8.83	DG
BEARING	354.13	DG
NORTHING	+010.97	
EASTING	-000.37	
LOG DEPTH	0080.00	
TRUE DEPTH	0079.09	
TILT	11.04	DG
BEARING	355.91	DG
NORTHING	+009.44	
EASTING	-000.21	
LOG DEPTH	0070.00	
TRUE DEPTH	0069.28	
TILT	12.23	DG
BEARING	358.01	DG
NORTHING	+007.53	
EASTING	-000.08	
LOG DEPTH	0060.00	
TRUE DEPTH	0059.51	
TILT	9.53	DG
BEARING	.43	DG
NORTHING	+005.41	
EASTING	-000.00	
LOG DEPTH	0050.00	
TRUE DEPTH	0049.65	
TILT	10.70	DG
BEARING	358.80	DG
NORTHING	+003.75	
EASTING	-000.02	
LOG DEPTH	0040.00	
TRUE DEPTH	0039.82	
TILT	10.96	DG
BEARING	.51	DG
NORTHING	+001.90	
EASTING	+000.01	
LOG DEPTH	0030.00	
TRUE DEPTH	0030.00	
TILT	7.40	DG
BEARING	6.58	DG
NORTHING	+000.00	
EASTING	+000.00	




915
RECORD OF BOREHOLE DRILL
EPB COAL LITHOLOGY LOG
CALIBRATION DATA
BLUE DIAMOND
LOW DENSITY
SHALE
COAL
CARBONACEOUS SHALE
SANDY COAL
SHALE
MUDSTONE
SILTSTONE
SANDSTONE (FINE)
SANDSTONE (MEDIUM)
SANDSTONE (COARSE)
SANDSTONE (CONG)
LIMESTONE
DOLOSTONE
CHERT

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SEAM THICKNESS LOG

BOREHOLE 82-2 TN-82D-202 (3)
CLIENT Crows Nest Resources Ltd.
AREA TELKWA
COUNTRY CANADA
DATE LOGGED 18-02-82
DEPTH SCALE 20:1
3 OF 4 LOGS

TK-Telkwa 82(3)A

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: CALIPER, B.R. DENSITY

BOREHOLE DATA — REFER TO LITHOLOGY LOG

OPERATION DATA — REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE — SIDEWALL POSITION

LOG	TAPING: LOG TAPED	RECORD SPEED	DIRECT or REPLAY	SPEED	PANEL: TC SECS	NORM	CAL COEFF
CALIPER	Y	2m/M	R	2m/M			
B.R. DENSITY	Y	2m/M	R	2m/M	.3	7.56	

SOURCE SONDE AND CALIBRATION — REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG INTERVALS

FROM	71	63	41	
TO	65	56	33	
INTERVAL	6	7	8	
FROM				
TO				
INTERVAL				TOTAL INTERVAL

REMARKS

B P B SEAM THICKNESS LOG

CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
7" 6" 5" dia 4" 3" 2"		13000 SBRDU 10000

CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
7" 6" 5" dia 4" 3" 2"		26000 SBRDU 15000

BOREHOLE 82-2
CLIENT Crows Nest Resources Ltd.
AREA TELKWA
COUNTRY Canada

SEAM THICKNESS LOG

HF 82002 E

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COAL QUALITY LOG

BPB

BOREHOLE 82-2 CLIENT Crows Nest Resources Ltd.

AREA [illegible] COUNTRY [illegible]

DATE LOGGED 02-10-82

DEPTH SCALE 1:50

SONIC TYPE COMPENSATED

COAL QUALITY COMBINATION SONIC

LOG SUITE GAMMA RAY L.S. DENSITY

REMARKS

BOREHOLE DATA — REFER TO LITHOLOGY LOG

OPERATION DATA — REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONIC

LOG	BOREHOLE DIAMETER	CASING	FLUID	SENSITIVITY	SPEED
COAL COMBINATION SONIC	7 7/8	5 1/2	[illegible]	[illegible]	[illegible]

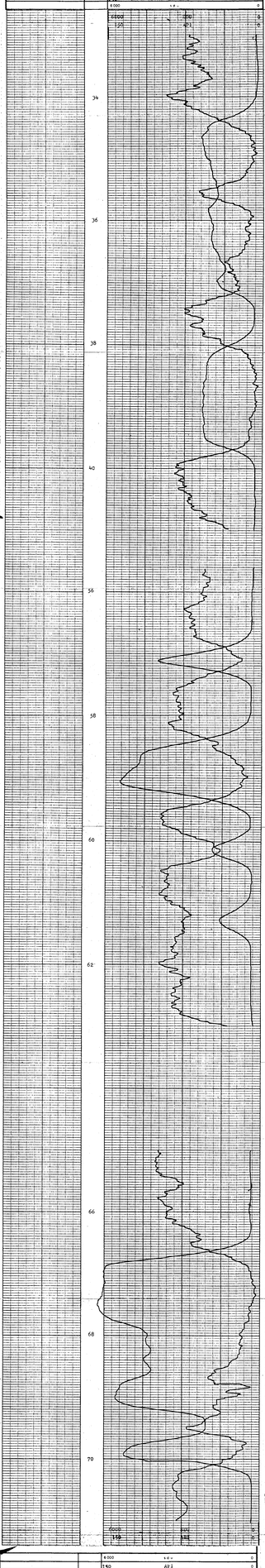
LOG	TOOL	SPACING	TIME CONSTANT	UNITS
COAL COMBINATION SONIC	[illegible]	[illegible]	[illegible]	[illegible]

LOG INTERVALS		
TOP	21.63	31
BOTTOM	66.27	34
TIME		
TOP		
BOTTOM		

BPB COAL QUALITY LOG

DEPTH	GAMMA RAY
	COAL BULK DENSITY g/cm³

HOLE SIZE CORRECTION DATA



	6000	1.6
	150	API
	COAL BULK DENSITY g/cm³	
DEPTH	GAMMA RAY	

BPB

BOREHOLE 82-2 AREA [illegible]

CLIENT Crows Nest Resources Ltd. COUNTRY CANADA

COAL QUALITY LOG

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LOG DEPTH	0230.00	
TRUE DEPTH	0225.72	
TILT	14.63	DG
BEARING	358.34	DG
NORTHING	+040.07	
EASTING	-001.30	

LOG DEPTH	0220.00	
TRUE DEPTH	0216.04	
TILT	14.32	DG
BEARING	357.20	DG
NORTHING	+037.54	
EASTING	-001.22	

LOG DEPTH	0210.00	
TRUE DEPTH	0206.35	
TILT	13.39	DG
BEARING	355.27	DG
NORTHING	+035.07	
EASTING	-001.10	

LOG DEPTH	0200.00	
TRUE DEPTH	0196.62	
TILT	10.87	DG
BEARING	356.57	DG
NORTHING	+032.76	
EASTING	-000.91	

LOG DEPTH	0190.00	
TRUE DEPTH	0186.80	
TILT	11.63	DG
BEARING	359.33	DG
NORTHING	+030.88	
EASTING	-000.80	

LOG DEPTH	0180.00	
TRUE DEPTH	0177.01	
TILT	11.48	DG
BEARING	2.04	DG
NORTHING	+028.86	
EASTING	-000.78	

LOG DEPTH	0170.00	
TRUE DEPTH	0167.21	
TILT	11.18	DG
BEARING	2.57	DG
NORTHING	+026.87	
EASTING	-000.85	

LOG DEPTH	0160.00	
TRUE DEPTH	0157.40	
TILT	13.96	DG
BEARING	359.29	DG
NORTHING	+024.94	
EASTING	-000.93	

LOG DEPTH	0150.00	
TRUE DEPTH	0147.70	
TILT	14.96	DG
BEARING	3.38	DG
NORTHING	+022.52	
EASTING	-000.91	

LOG DEPTH	0140.00	
TRUE DEPTH	0138.04	
TILT	15.06	DG
BEARING	2.04	DG
NORTHING	+019.95	
EASTING	-001.06	

LOG DEPTH	0130.00	
TRUE DEPTH	0128.38	
TILT	13.50	DG
BEARING	351.60	DG
NORTHING	+017.35	
EASTING	-001.15	

LOG DEPTH	0120.00	
TRUE DEPTH	0118.66	
TILT	11.09	DG
BEARING	347.39	DG
NORTHING	+015.04	
EASTING	-000.81	

LOG DEPTH	0110.00	
TRUE DEPTH	0108.85	
TILT	8.02	DG
BEARING	356.68	DG
NORTHING	+013.16	
EASTING	-000.39	

LOG DEPTH	0100.00	
TRUE DEPTH	0098.95	
TILT	8.48	DG
BEARING	356.02	DG
NORTHING	+011.76	
EASTING	-000.31	

LOG DEPTH	0090.00	
TRUE DEPTH	0089.06	
TILT	8.09	DG
BEARING	4.89	DG
NORTHING	+010.29	
EASTING	-000.21	

LOG DEPTH	0080.00	
TRUE DEPTH	0079.16	
TILT	8.98	DG
BEARING	5.98	DG
NORTHING	+008.89	
EASTING	-000.33	

LOG DEPTH	0070.00	
TRUE DEPTH	0069.28	
TILT	12.75	DG
BEARING	349.47	DG
NORTHING	+007.34	
EASTING	-000.49	

LOG DEPTH	0060.00	
TRUE DEPTH	0059.53	
TILT	12.02	DG
BEARING	351.90	DG
NORTHING	+005.17	
EASTING	-000.09	

LOG DEPTH	0050.00	
TRUE DEPTH	0049.75	
TILT	9.50	DG
BEARING	358.02	DG
NORTHING	+003.10	
EASTING	+000.20	

LOG DEPTH	0040.00	
TRUE DEPTH	0039.89	
TILT	8.51	DG
BEARING	10.10	DG
NORTHING	+001.45	
EASTING	+000.25	

LOG DEPTH	0030.00	
TRUE DEPTH	0030.00	
TILT	9.07	DG
BEARING	16.88	DG
NORTHING	+000.00	
EASTING	+000.00	

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TK-Telkwa 82(3)A

COAL LITHOLOGY LOG

BPB

BOREHOLE	TK-82R-203 (1)
CLIENT	Crows Nest Resources Ltd.
AREA	TELKWA
COUNTRY	CANADA
DATE LOGGED	20.02.82
DEPTH SCALE	100:1
	1 of 2 LOGS

SONDE TYPE: COAL COMBINATION SONDE

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

BOREHOLE DATA

PERMANENT DATUM	Ground Level	
ELEVATION OF P.D.		
MEASUREMENTS FROM	BPB: GL	DRILLER: GL
DEPTH REACHED	230m	231m
CASING SHOE	35m	
BIT SIZES	1: 5 TO TD	2: --- TO ---
	3: --- TO ---	4: --- TO ---
CASING SIZES	1: 6" TO 35m	2: --- TO ---

FLUID DATA

NATURE	WATER-AIR
SG	n/a
LEVEL	n/a
VISCOSITY	n/a
Rm at meas temp	n/a
BHT	n/a

OPERATION DATA

FIRST READING	230m
LAST READING	00
INTERVAL LOGGED	230m
UNIT-TRUCK No	216
ENGINEER	D. MacKenzie
WITNESS	--------

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

LOG	SONDE	SOURCE	CALIBRATOR	LOG TAPED	RECORD SPEED	DIRECT or REPLAY	SPEED	TC SECS	NORM	CAL COEFF	FROM	TO	INTERVAL	SEAM LOG RUN
CCS	146b	5852	-											
GAMMA RAY			463API	Y	9m/M	D	9m/M	1	--	1.6	230	00	230	
L.S. DENSITY	SIDEWALL POSITION		2860	Y	9m/M	D	9m/M	.3	6.12	--	230	00	230	
CALIPER			-----	Y	9m/M	D	9m/M	.3	----	---	230	00	230	

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

FROM		INTERVAL TOTAL
TO		
INTERVAL		

ADDITIONAL SONDES RUN

SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG	
204	N-N	100:1	------	REFER TO ADDITIONAL HEADINGS

REMARKS

Log suite on this hole does not include Focussed Electric log.

BPB COAL LITHOLOGY LOG

CALIBRATION DATA

JIG No 242 VALUE 463 @ 2 DIAM

JIG MARK SHOWN AT ABOVE VALUE -

JIG CAL DATE 15-02-82 JIG VALUE 2860 SDU @ g/cm³

JIG No 0040 SPAN 6000 NORM SDU/CPS 6.12

7 ins 258 cps

3 ins 548 cps

GAMMA RAY	DEPTH	BULK DENSITY g/cm³	CALIPER INCHES

HOLE SIZE CORRECTION DATA

LOOSE OVERBURDEN — COAL

SHALEY COAL — CARBONACEOUS SHALE

COALY SHALE — SHALE

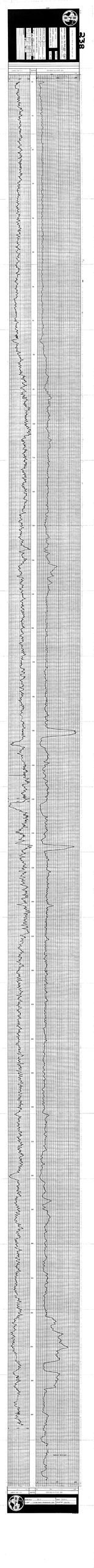
MUDSTONE — SILTSTONE

SANDSTONE (FINE) — SANDSTONE (MEDIUM)

SANDSTONE (COARSE) — SANDSTONE (CONG)

CONGLOMERATE — IRONSTONE

IGNEOUS



TW-82-204

LOG DEPTH	0200.00	
TRUE DEPTH	0196.63	
TILT	14.08	DG
BEARING	347.33	DG
NORTHING	+032.16	
EASTING	-002.06	

LOG DEPTH	0190.00	
TRUE DEPTH	0186.93	
TILT	13.21	DG
BEARING	341.87	DG
NORTHING	+029.79	
EASTING	-001.53	

LOG DEPTH	0180.00	
TRUE DEPTH	0177.19	
TILT	12.59	DG
BEARING	337.75	DG
NORTHING	+027.62	
EASTING	-000.82	

LOG DEPTH	0170.00	
TRUE DEPTH	0167.43	
TILT	12.77	DG
BEARING	339.68	DG
NORTHING	+025.60	
EASTING	+000.00	

LOG DEPTH	0160.00	
TRUE DEPTH	0157.68	
TILT	13.42	DG
BEARING	342.42	DG
NORTHING	+023.52	
EASTING	+000.77	

LOG DEPTH	0150.00	
TRUE DEPTH	0147.95	
TILT	14.14	DG
BEARING	345.23	DG
NORTHING	+021.31	
EASTING	+001.47	

LOG DEPTH	0140.00	
TRUE DEPTH	0138.25	
TILT	13.94	DG
BEARING	344.69	DG
NORTHING	+018.95	
EASTING	+002.09	

LOG DEPTH	0130.00	
TRUE DEPTH	0128.54	
TILT	13.46	DG
BEARING	346.39	DG
NORTHING	+016.62	
EASTING	+002.73	

LOG DEPTH	0120.00	
TRUE DEPTH	0118.81	
TILT	10.80	DG
BEARING	346.56	DG
NORTHING	+014.36	
EASTING	+003.27	

LOG DEPTH	0110.00	
TRUE DEPTH	0108.99	
TILT	7.62	DG
BEARING	356.44	DG
NORTHING	+012.54	
EASTING	+003.71	

LOG DEPTH	0100.00	
TRUE DEPTH	0099.08	
TILT	6.82	DG
BEARING	19.69	DG
NORTHING	+011.21	
EASTING	+003.79	

LOG DEPTH	0090.00	
TRUE DEPTH	0089.15	
TILT	7.13	DG
BEARING	22.94	DG
NORTHING	+010.09	
EASTING	+003.39	

LOG DEPTH	0080.00	
TRUE DEPTH	0079.23	
TILT	7.06	DG
BEARING	12.50	DG
NORTHING	+008.95	
EASTING	+002.91	

LOG DEPTH	0070.00	
TRUE DEPTH	0069.31	
TILT	7.35	DG
BEARING	18.11	DG
NORTHING	+007.75	
EASTING	+002.64	

LOG DEPTH	0060.00	
TRUE DEPTH	0059.39	
TILT	9.23	DG
BEARING	23.59	DG
NORTHING	+006.53	
EASTING	+002.24	

LOG DEPTH	0050.00	
TRUE DEPTH	0049.52	
TILT	9.57	DG
BEARING	18.30	DG
NORTHING	+005.06	
EASTING	+001.60	

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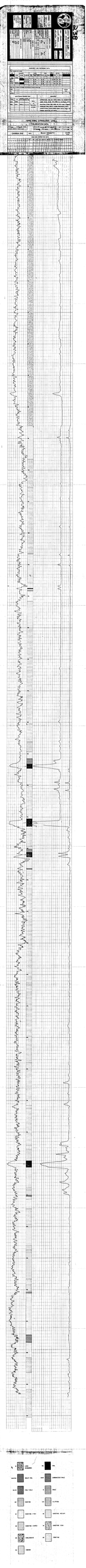
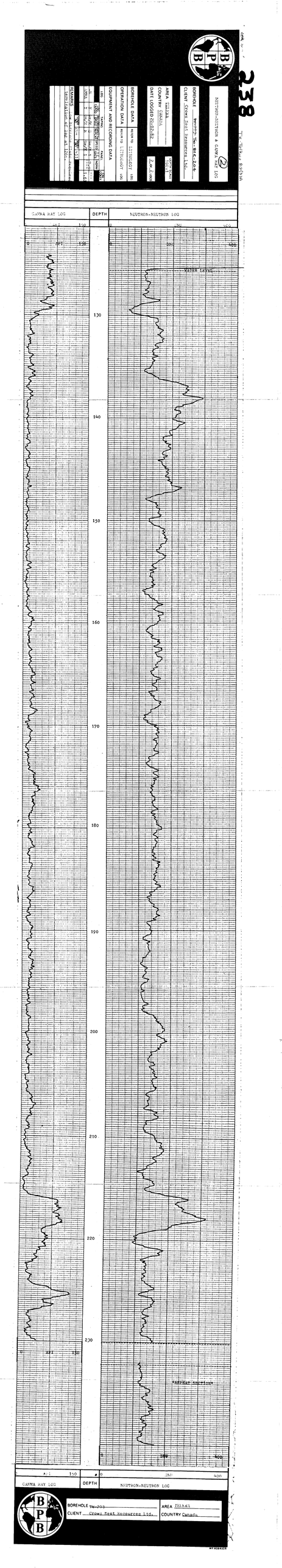
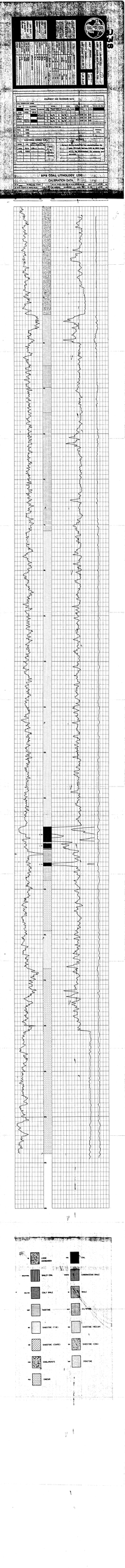
LOG DEPTH	0040.00	
TRUE DEPTH	0039.66	
TILT	9.93	DG
BEARING	17.87	DG
NORTHING	+003.48	
EASTING	+001.08	

LOG DEPTH	0030.00	
TRUE DEPTH	0029.81	
TILT	11.11	DG
BEARING	16.65	DG
NORTHING	+001.84	
EASTING	+000.55	

LOG DEPTH	0020.00	
TRUE DEPTH	0020.00	
TILT	10.52	DG
BEARING	9.79	DG
NORTHING	+000.00	
EASTING	+000.00	




NEUTRON-NEUTRON & GAMMA RAY LOG
BOREHOLE No. 203
CLIENT Crown Point Resources Ltd.
AREA TRIANGLE
COUNTRY CANADA
DATE LOGGED 26-6-82
EQUIPMENT AND RECORDING DATA
OPERATION DATA
BOREHOLE DATA
REMARKS
GAMMA RAY LOG
DEPTH
NEUTRON-NEUTRON LOG
WATER LAYER
PREPAK SECTION
API
NNN
130
140
150
160
170
180
190
200
210
220
230
300
400



EQUIPMENT AND RECORDING DATA
SPS COAL LITHOLOGY LOG
CALIBRATION DATA
LIME MUDSTONE
COAL
SHALE
CARBONATOR SHALE
SHALE
SILTSTONE
SANDSTONE
SANDSTONE (FINE)
SANDSTONE (MEDIUM)
SANDSTONE (COARSE)
SANDSTONE (CONG)
CONGLOMERATE
CONGLOMERATE
CHERT

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BPB

(2)

SELECTOR-SUITACH & GAMMA SIX LOG

BOREHOLE Tw-Ben-Ms

CLIENT Crown Zone Resources Ltd.

AREA Tiltra

COUNTRY Canada

DATE LOGGED 25-05-82

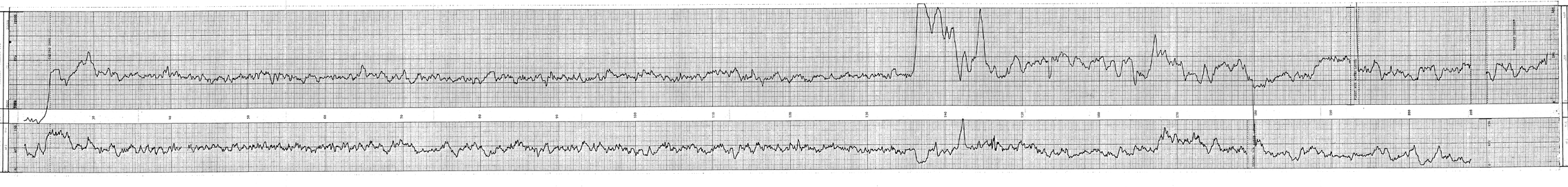
BOREHOLE DATA ROLLER TO LITHOLOGY LOG

OPERATION DATA ROLLER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

LOG	TYPE	TYPE	PAGE	SCALE

REMARKS: SELECTOR-SUITACH ... [illegible]



BOREHOLE Tw-Ben-Ms

CLIENT Crown Zone Resources Ltd.

AREA Tiltra

COUNTRY Canada

BPB

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TK-Telkwa 82(2)A

BOREHOLE TW-82R-205 (3)
CLIENT Crows Nest Resources Ltd
AREA TELKWA
COUNTRY CANADA
DATE LOGGED 21-02-82
DEPTH SCALE 20:1
OF 4 LOGS

SEAM THICKNESS LOG

SONDE TYPE: COAL COMBINATION SONDE
LOG SUITE: CALIPER B.R. DENSITY

BOREHOLE DATA	REFER TO LITHOLOGY LOG
OPERATION DATA	REFER TO LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA	
COAL COMBINATION SONDE	

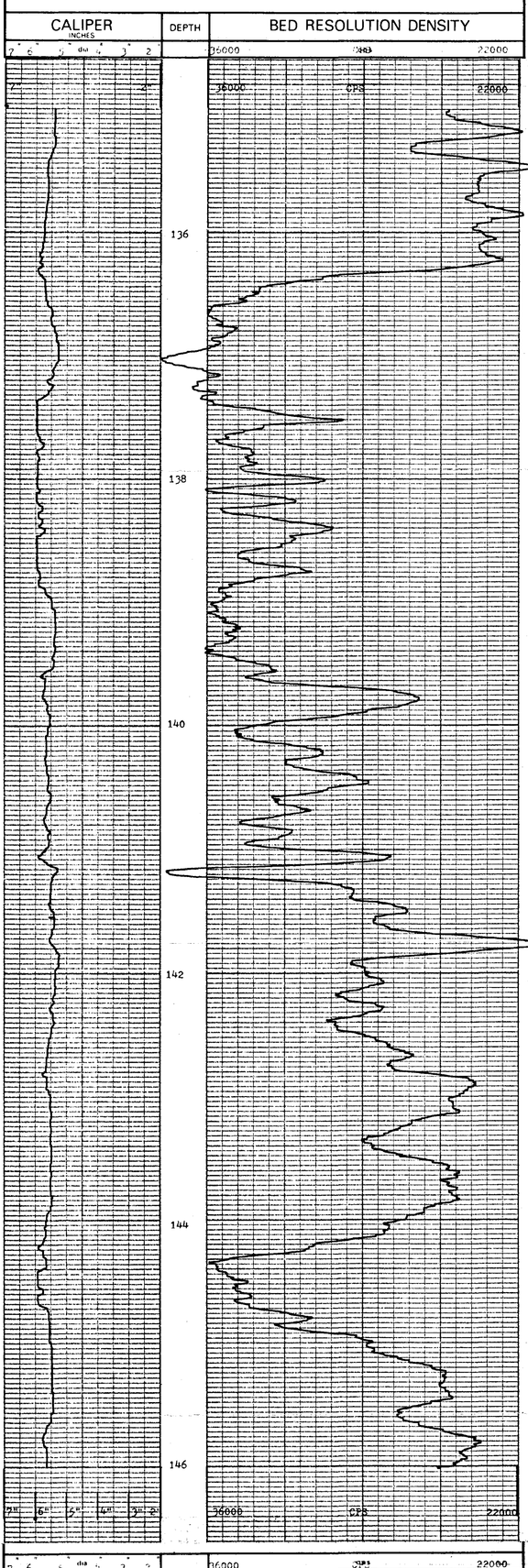
LOG	TAPING			SIDEWALL POSITION	
	LOG	RECORD	RECORD SPEED	PANEL	COEFF
CALIPER	Y	2m/M	R	2m/M	3
B.R. DENSITY	Y	2m/M	R	2m/M	3

SOURCE SONDE AND CALIBRATION
REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG INTERVALS

FROM	146		
TO	135		
INTERVAL	11		
FROM			INTERVAL
TO			TOTAL
INTERVAL			

REMARKS



BOREHOLE TW-82R-205
CLIENT Crows Nest Resources Ltd.
AREA TELKWA
COUNTRY Canada

SEAM THICKNESS LOG

MY 88002 R

238

TK-Telkwa 82(a)A

BPB

COAL QUALITY LOG

BOREHOLE TW-205 (4)
CLIENT Crows Nest Resources Ltd.

AREA TELKWA
COUNTRY CANADA
DATE LOGGED 21-02-82

DEPTH SCALE 20:1

4 OF 4 LOGS

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: GAMMA RAY L.S. DENSITY

BOREHOLE DATA — REFER TO LITHOLOGY LOG

OPERATION DATA — REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

LOG	TAPING			SIDEWALL POSITION		
	LOG TAPED	RECORD SPEED	DIRECTION REPLAY	SPEED	PANEL T.C. SECS	NORM	COAL COEFF.
GAMMA RAY	Y	2m/m	2m/m	2m/m	2	1	0.61
L.S. DENSITY	Y	2m/m	2m/m	2m/m	1	6.12	---

SOURCE SONDE AND CALIBRATION

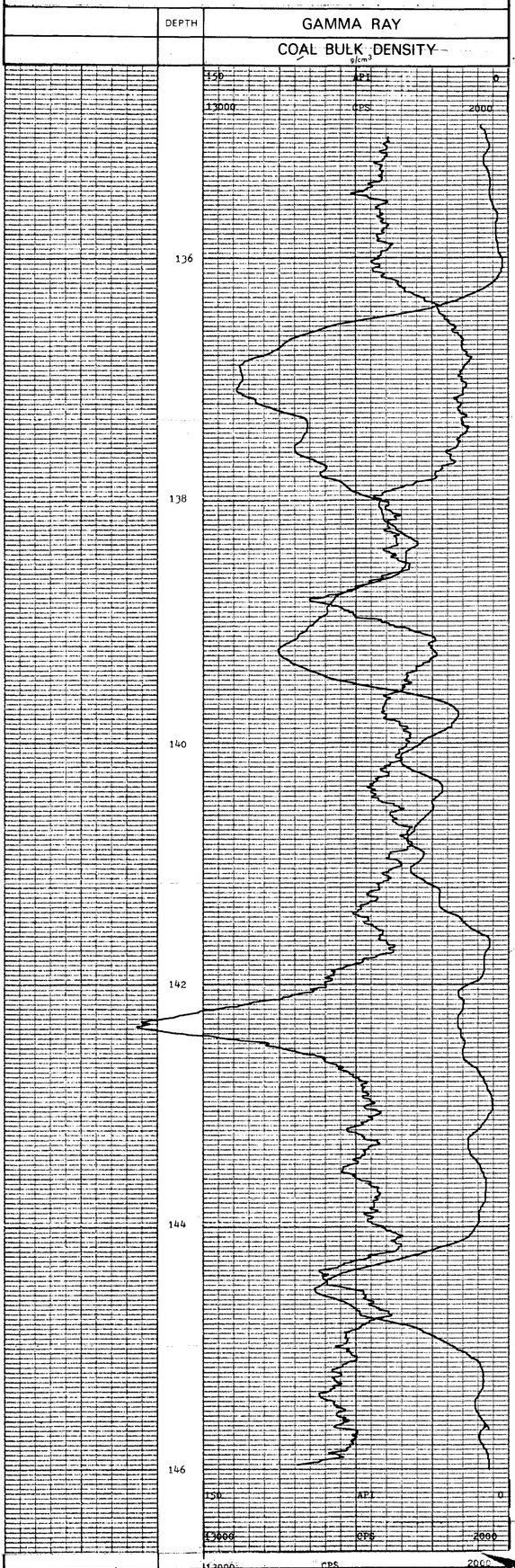
REFER TO LITHOLOGY LOG

COAL QUALITY LOG INTERVALS

FROM	1.05		
TO	1.35		
INTERVAL	11		
FROM			INTER VAL TOTAL
TO			
INTERVAL			

REMARKS Please note that bulk density is unreliable in this hole. Also bulk & BHD logs for this hole are expressed in Counts Per Second.

BPB COAL QUALITY LOG



BPB

BOREHOLE TW-205 | AREA TELKWA
CLIENT CROWS NEST RESOURCES LTD. | COUNTRY CANADA

COAL QUALITY LOG

TK-Tekwa 82(311)

238

TW-82R-206

LOG DEPTH	0230.00	
TRUE DEPTH	0225.44	
TILT	14.71	DG
BEARING	342.52	DG
NORTHING	+040.75	
EASTING	-005.62	

LOG DEPTH	0220.00	
TRUE DEPTH	0215.77	
TILT	10.89	DG
BEARING	341.81	DG
NORTHING	+038.33	
EASTING	-004.86	

LOG DEPTH	0210.00	
TRUE DEPTH	0205.95	
TILT	9.42	DG
BEARING	342.83	DG
NORTHING	+036.53	
EASTING	-004.27	

LOG DEPTH	0200.00	
TRUE DEPTH	0196.09	
TILT	11.40	DG
BEARING	339.45	DG
NORTHING	+034.97	
EASTING	-003.79	

LOG DEPTH	0190.00	
TRUE DEPTH	0186.29	
TILT	11.58	DG
BEARING	338.93	DG
NORTHING	+033.12	
EASTING	-003.09	

LOG DEPTH	0180.00	
TRUE DEPTH	0176.49	
TILT	10.94	DG
BEARING	339.58	DG
NORTHING	+031.24	
EASTING	-002.37	

LOG DEPTH	0170.00	
TRUE DEPTH	0166.67	
TILT	10.08	DG
BEARING	341.70	DG
NORTHING	+029.46	
EASTING	-001.71	

LOG DEPTH	0160.00	
TRUE DEPTH	0156.82	
TILT	11.64	DG
BEARING	340.86	DG
NORTHING	+027.80	
EASTING	-001.16	

LOG DEPTH	0150.00	
TRUE DEPTH	0147.03	
TILT	13.68	DG
BEARING	339.49	DG
NORTHING	+025.90	
EASTING	-000.50	

LOG DEPTH	0140.00	
TRUE DEPTH	0137.31	
TILT	14.45	DG
BEARING	358.28	DG
NORTHING	+023.68	
EASTING	+000.32	

LOG DEPTH	0130.00	
TRUE DEPTH	0127.63	
TILT	14.17	DG
BEARING	1.37	DG
NORTHING	+021.19	
EASTING	+000.40	

LOG DEPTH	0120.00	
TRUE DEPTH	0117.93	
TILT	13.10	DG
BEARING	348.21	DG
NORTHING	+018.74	
EASTING	+000.34	

LOG DEPTH	0110.00	
TRUE DEPTH	0108.19	
TILT	13.50	DG
BEARING	350.67	DG
NORTHING	+016.52	
EASTING	+000.80	

LOG DEPTH	0100.00	
TRUE DEPTH	0098.47	
TILT	13.08	DG
BEARING	352.75	DG
NORTHING	+014.21	
EASTING	+001.18	

LOG DEPTH	0090.00	
TRUE DEPTH	0088.73	
TILT	11.23	DG
BEARING	356.87	DG
NORTHING	+011.97	
EASTING	+001.46	

LOG DEPTH	0080.00	
TRUE DEPTH	0078.92	
TILT	11.18	DG
BEARING	357.67	DG
NORTHING	+010.02	
EASTING	+001.57	

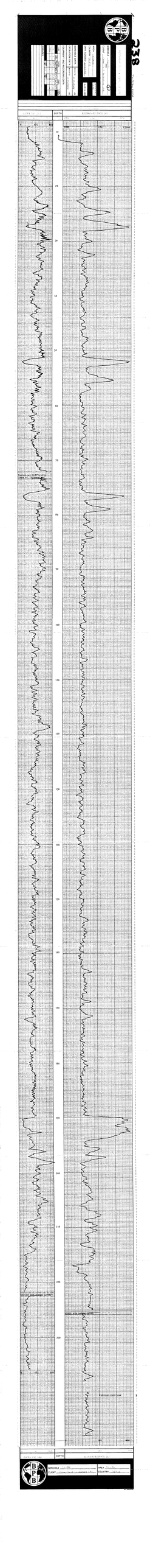
LOG DEPTH	0070.00	
TRUE DEPTH	0069.11	
TILT	11.78	DG
BEARING	356.04	DG
NORTHING	+008.08	
EASTING	+001.65	

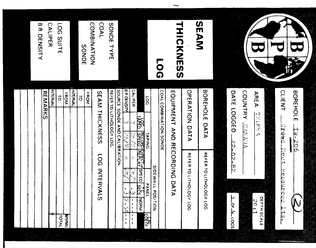
LOG DEPTH	0060.00	
TRUE DEPTH	0059.32	
TILT	13.16	DG
BEARING	12.17	DG
NORTHING	+006.05	
EASTING	+001.79	

LOG DEPTH	0050.00	
TRUE DEPTH	0049.58	
TILT	13.19	DG
BEARING	13.13	DG
NORTHING	+003.82	
EASTING	+001.31	

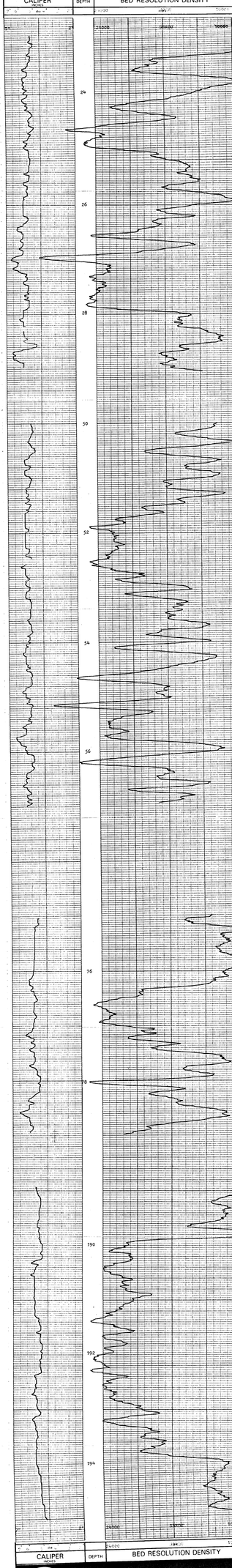
LOG DEPTH	0040.00	
TRUE DEPTH	0039.84	
TILT	10.30	DG
BEARING	26.39	DG
NORTHING	+001.60	
EASTING	+000.79	

LOG DEPTH	0030.00	
TRUE DEPTH	0030.00	
TILT	9.05	DG
BEARING	54.06	DG
NORTHING	+000.00	
EASTING	+000.00	





B P B SEAM THICKNESS LOG
CALIPER
DEPTH
BED RESOLUTION DENSITY



CALIPER
DEPTH
BED RESOLUTION DENSITY

BOREHOLE TW-1086
CLIENT TEXAS NOVA MINERALS LTD.
AREA TEXAS
COUNTRY CANADA

SEAM THICKNESS LOG

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BPB

COAL LITHOLOGY LOG

BOREHOLE: TW-206
CLIENT: Crows Nest Resources Ltd. (3)
AREA: TELKWA
COUNTRY: CANADA
DATE LOGGED: 22-02-82
DEPTH SCALE: 20:1
3 of 4 LOGS

Tkelkwa 82(a)A

SONDE TYPE: COAL COMBINATION SONDE

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

BOREHOLE DATA

PERMANENT DATUM	GROUND LEVEL	
ELEVATION OF P.D.		
MEASUREMENTS FROM	BPB GL	DRILLER GL
DEPTH REACHED	236m	236m
CASING SHOE		
BIT SIZES	1: 5.5 TO TD	2: TO
CASING SIZES	1: TO	2: TO

FLUID DATA

NATURE	AIR-Water
SG	N/A
LEVEL	
VISCOSITY	N/A
Rm at meas temp	N/A
BHT	N/A

OPERATION DATA

FIRST READING	236m
LAST READING	00
INTERVAL LOGGED	236
UNIT-TRUCK No	216
ENGINEER	DM
WITNESS	

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

LOG	EQUIPMENT: SONDE	SOURCE	CALIBRATOR	TAPING: LOG TAPED	RECORD SPEED	DIRECT or REPLAY	PANEL: SPEED	TC SECS	NORM	CAL COEFF	DEPTHS: FROM	TO	INTERVAL	SEAM LOG RUN
CCS	146B	5852												
GAMMA RAY	SIDEWALL POSITION		463API	Y	9m/M	D	9m/M	1	---	1.61	236	00	236	---------
L.S. DENSITY			2860SDU	Y	9m/M	D	9m/M	.3	6.12	--	236	00	236	---------
CALIPER			------	Y	9m/M	D	9m/M	.3	---	---	236	00	236	---------

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

FROM	199	81	INTERVAL TOTAL
TO	189	75	
INTERVAL	10	6	

ADDITIONAL SONDES RUN

SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG
204	N-N	100:1	------
216	VERT	-----	-----

REFER TO ADDITIONAL HEADINGS

REMARKS

BPB COAL LITHOLOGY LOG

CALIBRATION DATA

JIG No 242 VALUE 46 @ 2 DIAM
JIG MARK SHOWN AT ABOVE VALUE -

JIG CAL DATE 15-02-82 JIG VALUE 2860 SDU @ g/cm³ | 7 ins 758 cps
JIG No 0040 SPAN 6000 NORM SDU/CPS 6.12 | 3 ins 548 cps

GAMMA RAY | DEPTH | BULK DENSITY | CALIPER

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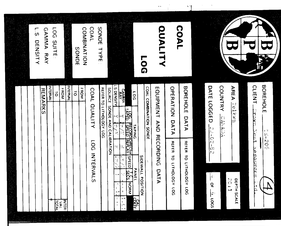
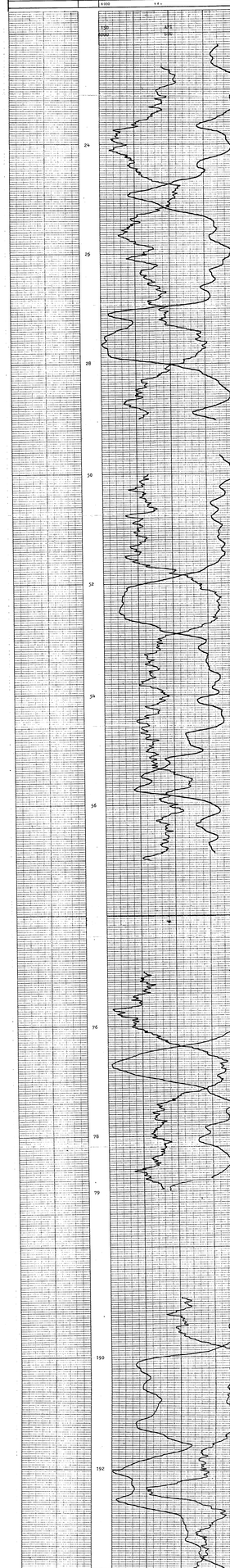
OB	LOOSE OVERBURDEN	COAL	COAL
SHALEY/COAL	SHALEY COAL	CARB/SH	CARBONACEOUS SHALE
COALY/SH	COALY SHALE	SH	SHALE
MDST	MUDSTONE	SLST	SILTSTONE
SS1	SANDSTONE (FINE)	SS2	SANDSTONE (MEDIUM)
SS3	SANDSTONE (COARSE)	SS4	SANDSTONE (CONG)
CONG	CONGLOMERATE	IRST	IRONSTONE
VOLC	IGNEOUS		



BPB COAL QUALITY LOG

DEPTH — GAMMA RAY / COAL BULK DENSITY g/cm³

HOLE SIZE CORRECTION DATA



DEPTH — COAL BULK DENSITY g/cm³ / GAMMA RAY

BOREHOLE _____ AREA _____

CLIENT _____ COUNTRY _____

COAL QUALITY LOG

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BP Exploration (Alaska) Inc.
Prudhoe Bay Unit
Well No. 2-38 (Sec. 11, T11N, R14E)

COAL LITHOLOGY LOG

Well Name: 2-38
Date: 1-4-84
Operator: BP Exploration (Alaska) Inc.
Location: Prudhoe Bay Unit
Well No. 2-38 (Sec. 11, T11N, R14E)
Elevation: KB 54.5'
Total Depth: 10,000'
Drilling Contractor: Nabors
Rig No. 22E
Drilling Fluid: Lignosulfonate
Hole Size: 12 1/4"
Casing Size: 9 5/8"
Casing Depth: 9,500'
Cement Type: Class G
Cement Volume: 1,000 sx
Cement Top: 7,000'
Perforations: 9,600-9,800'
Completion Fluid: Diesel
Completion Date: 1-4-84
Completed By: Schlumberger

EQUIPMENT AND RECORDING DATA

Tool	Serial No.	Recorded	Scale	Time Constant	Depth Range	Speed	Recorded Data
Gamma Ray	1	Yes	5	No Tc	0-10,000	30 ft/min	Gamma Ray
Caliper	1	Yes	5	No Tc	0-10,000	30 ft/min	Caliper
Density	1	Yes	5	No Tc	0-10,000	30 ft/min	Density
Neutron	1	Yes	5	No Tc	0-10,000	30 ft/min	Neutron
Sonic	1	Yes	5	No Tc	0-10,000	30 ft/min	Sonic
Resistivity	1	Yes	5	No Tc	0-10,000	30 ft/min	Resistivity

COAL COLLECTION CRITERIA (ON ADDITIONAL PAGE IF NECESSARY)

Minimum Thickness	1.0 ft.
Maximum Thickness	1.0 ft.
Minimum Gamma Value	

ADDITIONAL SERVICES RUN

Service	Run	Recorded	Scale	Time Constant	Depth Range	Speed	Recorded Data
Dipmeter	1	Yes	5	No Tc	9,500-10,000	30 ft/min	Dipmeter
Sidewall Core	1	Yes	5	No Tc	9,500-10,000	30 ft/min	Sidewall Core
Formation Tester	1	Yes	5	No Tc	9,500-10,000	30 ft/min	Formation Tester

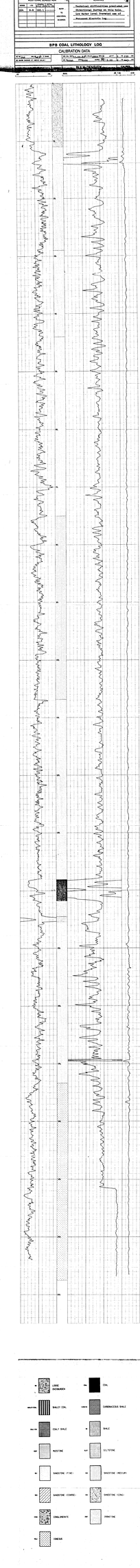
REMARKS

- Continental differentiation problematic due to Gamma Ray Resolution.
- Coal depth based on Density log.
- Continental differentiation based on Density log.

BP8 COAL LITHOLOGY LOG

CALIBRATION DATA

Gamma Ray	API units	Before: 0	After: 0	Shift: 0	Error: 0.0
Caliper	inches	Before: 0	After: 0	Shift: 0	Error: 0.0
Density	g/cc	Before: 0	After: 0	Shift: 0	Error: 0.0
Neutron	%	Before: 0	After: 0	Shift: 0	Error: 0.0
Sonic	μsec/ft	Before: 0	After: 0	Shift: 0	Error: 0.0
Resistivity	ohm-m	Before: 0	After: 0	Shift: 0	Error: 0.0



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TK-Telkwa 82(3)A

NEUTRON-NEUTRON & GAMMA RAY LOG

BOREHOLE TW-82R-207
CLIENT Crows Nest Resources Ltd.
AREA TELKWA
COUNTRY CANADA
DATE LOGGED 25-02-82

DEPTH SCALE 1:200
2 OF 4 LOGS

BOREHOLE DATA — REFER TO LITHOLOGY LOG
OPERATION DATA — REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

LOG	TAPING LOG TAPED	TAPING RECORDING SPEED	TAPING REPLAY	PANEL SPEED	PANEL SECS	PANEL NORM	CAL COEFF
N-N	Y	9m/M	D	9m/M	1	2.50	-
Gamma	Y	9m/M	D	9m/M	1	--	1.97

REMARKS Please note that neutron-neutron responsed in coal are reversed above water level.

BOREHOLE TW-82R-207
CLIENT Crows Nest Resources Ltd.
AREA TELKWA
COUNTRY CANADA

MY A58452R

TK-Telkwa 82(3)A

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BPB

BOREHOLE TW-82R-207 (3)

CLIENT Crows Nest Resources Ltd.

AREA Telkwa

COUNTRY CANADA

DATE LOGGED 25-02-82

DEPTH SCALE 20,1

1 OF 4 LOGS

SEAM THICKNESS LOG

BOREHOLE DATA	REFER TO LITHOLOGY LOG
OPERATION DATA	REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

SIDEWALL POSITION

LOG	TAPING			PANEL		CAL COEFF
	LOG TAPED	RECORD SPEED	DIRECT OR REPLAY	SPEED	TC SECS	NORM
CALIPER	Y	2m/M	R	2m/M	---	---
BR DENSITY	Y	2m/M	R	2m/M	.3	5.32

SOURCE SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: CALIPER B.R. DENSITY

SEAM THICKNESS LOG INTERVALS

	INTERVAL	INTERVAL
FROM	143m	
TO	137m	TOTAL
INTERVAL	6m	#

REMARKS

B P B SEAM THICKNESS LOG

CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
7" 6" 5" dia 4" 3" 2"		46500 SBRDU 36000
7"	2"	46500 36000
	138	
	140	
	142	
2"	2"	46500 SBRDU 36000
2" 6" 5" dia 4" 3" 2"		46500 SBRDU 36000
CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY

BPB

BOREHOLE TW-82R-207

CLIENT Crows Nest Resources Ltd.

AREA TELKWA

COUNTRY Canada

SEAM THICKNESS LOG

MY 88002 R

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TK-Telkwa 82(3)A

BOREHOLE TW-82R-207 (4)

CLIENT Crows Nest Resources Ltd.

AREA TELKWA

COUNTRY CANADA

DATE LOGGED 25-02-82

DEPTH SCALE 20:1

4 OF 4 LOGS

COAL QUALITY LOG

BOREHOLE DATA	REFER TO LITHOLOGY LOG
OPERATION DATA	REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

LOG	TAPING: LOG TAPED	RECORD SPEED	DIRECTO/ REPLAY	PANEL: SPEED	T.C. SECS	NORM	CAL COEFF
GAMMA RAY	Y	2m/M	R	2m/M	4	---	1.76
L.S DENSITY	Y	2m/M	R	2m/M	1	2.22	---

SIDEWALL POSITION

SOURCE, SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

COAL QUALITY LOG INTERVALS

FROM	143m
TO	137m
INTERVAL	
FROM	
TO	
INTERVAL	

INTERVAL TOTAL +

REMARKS

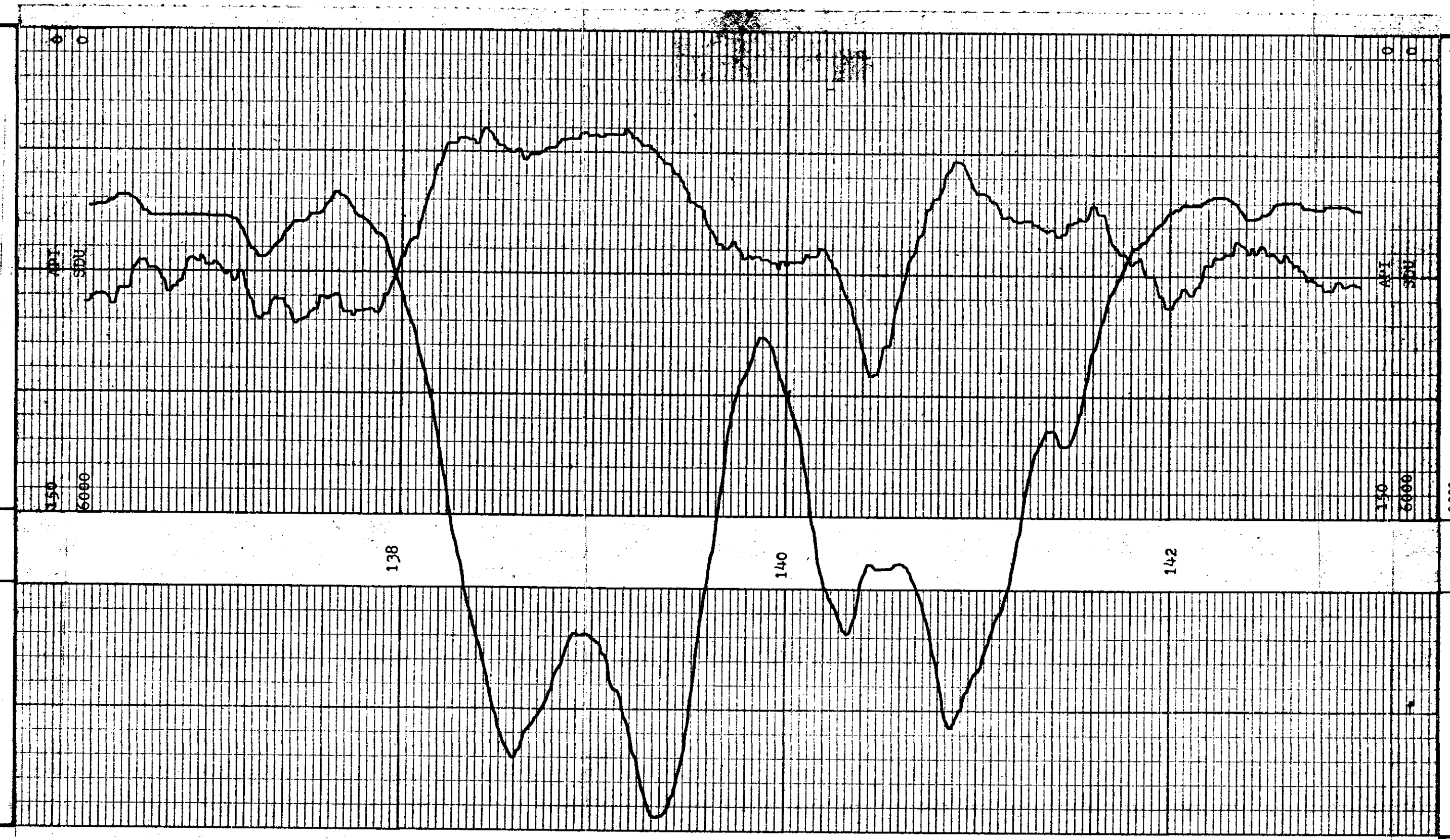
SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: GAMMA RAY L.S. DENSITY

BPB COAL QUALITY LOG

GAMMA RAY | COAL BULK DENSITY

DEPTH



BOREHOLE TW-82R-202

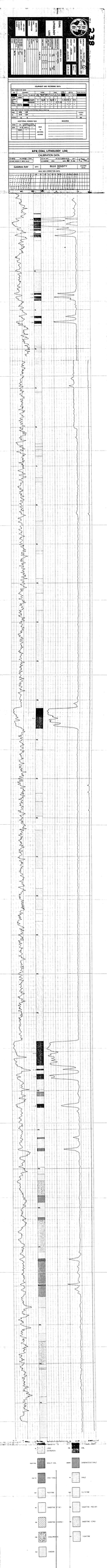
CLIENT Crows Nest Resources Ltd.

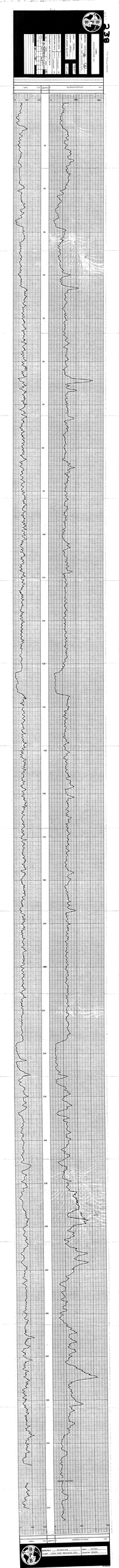
AREA TELKWA

COUNTRY Canada

COAL QUALITY LOG

MY 88002 B


BPB
2438
LOGGING
DATE
RUN
CASING
DRILLER
LOGGER
BIT
FROM
TO
CEMENT
TOP
BOTTOM
FLUID
LEVEL
DENSITY
VISCOSITY
PH
FLUID LOSS
SOURCE
RM
RMF
RMC
@ MEAS. TEMP.
RM @ BHT
TIME SINCE CIRC.
MAX. REC. TEMP.
EQUIP. LOCATION
RECORDED BY
WITNESSED BY
EQUIPMENT AND RECORDING DATA
RUN NUMBER
TOOL NUMBER
DIAMETER
TYPE
WEIGHT
MAX. REC. TEMP.
EST. CEMENT TOP
EQUIPMENT LOCATION
RECORDED BY
WITNESSED BY
NEUTRON SOURCE
STRENGTH
SERIAL NO.
DENSITY SOURCE
STRENGTH
SERIAL NO.
ADDITIONAL SERVICES RUN
REMARKS
BPB COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
API
BULK DENSITY
GAMMA RAY
BULK DENSITY
SCALE
HOLE SIZE CORRECTION (MM)
DEPTH
METRES
SANDSTONE
SILTSTONE
MUDSTONE
COAL
LIMESTONE
CONGLOMERATE
TUFF
TUFFACEOUS
CARBONACEOUS
CALCAREOUS
SILTY
SANDY
CONCRETIONS
CLAY GALLS
FOSSILS
PLANT REMAINS



COAL QUALITY LOG

BPB

BOREHOLE Tw 82a-208
CLIENT CROWS NEST RESOURCES LTD.
AREA TULAR
COUNTRY CANADA
DATE LOGGED 25-04-82
OPERATOR DATA RUN No 1 CASING 0M
EQUIPMENT AND RECORDING DATA RUN No 1 CASING 0M
DEPTH DRILLER 240M LOGGER 240M
CASING DRILLER 0M LOGGER 0M
BIT SIZE 152MM
FLUID TYPE MUD
FLUID LEVEL 0M
MAX. TEMP. 25°C
REMARKS

LOG SUITE
GAMMA RAY
COAL BULK DENSITY

SCORE TABLE
SCORE
COMBINATION
TOTAL

COAL QUALITY LOG

BPB COAL QUALITY LOG

DEPTH

GAMMA RAY

COAL BULK DENSITY

HOLE SIZE CORRECTION DATA

6" 8" 10" 12" 14" 16" 18" 20" 22" 24"

120 g/cc 0
4000 kg/m³ 0

150 API 0
6000 kg/m³ 0

130
132
134
136
138
216
218
220
222
224
226
228

4000 kg/m³ 0
120 g/cc 0
COAL BULK DENSITY
DEPTH
GAMMA RAY
6000 kg/m³ 0
150 API 0

BPB
BOREHOLE Tw 82a-208
CLIENT CROWS NEST RESOURCES LTD.
AREA TULAR
COUNTRY CANADA
COAL QUALITY LOG

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TK-82D-20 (4) (3)A

BOREHOLE TK-82D-208 (4)
CLIENT CROWS NEST RESOURCES LTD.
AREA TELKWA
COUNTRY CANADA
DATE LOGGED 25-02-82
SCALE 1:240

DENSITY CALIBRATE 2.0 g/cc
DATE 25-02-82

SEAM THICKNESS LOG

SONDE TYPE
COAL COMBUSTION SONDE

LOG SUITE
CALIPER
B.R. DENSITY

REMARKS

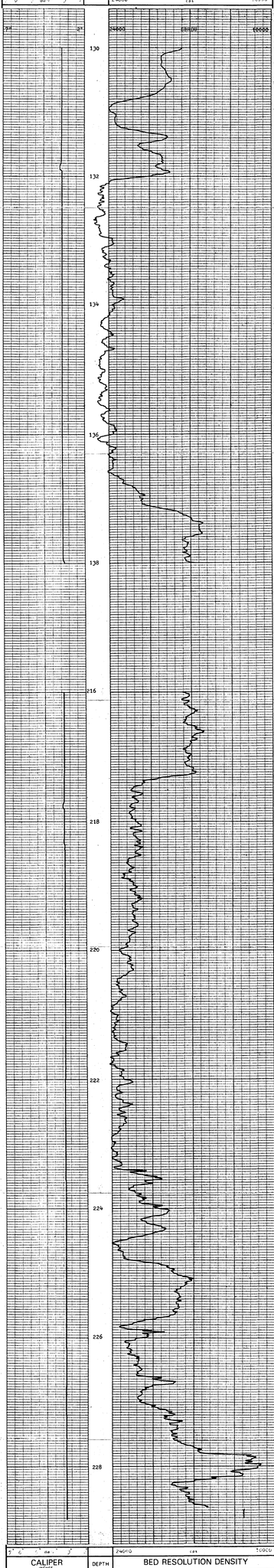
SEAM THICKNESS LOG INTERVALS
FROM 228 138
TO 216 130

LOG	RANGE	SCALE	SPEED	TIME CONSTANT	SENSITIVITY	ZERO
CALIPER	0-10	1"	20	0.5	1	0.0
B.R. DENSITY	2.0-3.0 g/cc	0.1 g/cc	20	0.5	1	2.0

BOREHOLE DATA — REFER TO LITHOLOGY LOG
OPERATION DATA — REFER TO LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA — REFER TO LITHOLOGY LOG
COAL COMBUSTION SONDE
SEAM THICKNESS LOG

B P B SEAM THICKNESS LOG

CALIPER INCHES — DEPTH — BED RESOLUTION DENSITY



CALIPER INCHES — DEPTH — BED RESOLUTION DENSITY

BOREHOLE TK-82D-208
CLIENT CROWS NEST RESOURCES LTD.
AREA TELKWA
COUNTRY CANADA

SEAM THICKNESS LOG

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TK-Telkwa 84/3/A

GAMMA RAY & LONG SPACED DENSITY LOGS

BOREHOLE TW82D-208-A
CLIENT Crows Nest Resources Ltd.
COUNTRY Canada
AREA Telkwa B.C.
DATE LOGGED 16/Sep/82
RUN SCALE 1:100
1 of 3 LOGS

BOREHOLE DATA

PERMANENT DATUM	Ground Level				
ELEVATION OF PD					
LOG MEASURED FROM	RT				
DRILLING MEASURED FROM	RT				
		BIT SIZES	CASING SIZES	CASING SHOE	
1	NQ	TO			
2	HQ	TO	4.2in	42.7m	
3		TO	4.2in	42.7m	
4		TO			

FLUID DATA

NATURE	Super Cal-X/Water
LEVEL	00.00m Unable to obtain
VISCOSITY	00.00s
Rm at meas temp	No sample available.
RMF at meas temp	
RMC at meas temp	
RM at BHT	

OPERATION DATA

FIRST READING	42.00m
LAST READING	00.00m
RECORDED BY	
UNIT-TRUCK No	1124/1218
ENGINEER	W.A.C.C.C.
WITNESS	

EQUIPMENT AND RECORDING DATA

LOG	EQUIPMENT			TAPING			PANEL			CAL CHK	DEPTHS		
	SONDE	SOURCE	CALIBRATOR	LOG TAPE ID	RECORD SPEED	DIRECTORY REPLAY	SPEED	TC SECS	NORM		FROM	TO	INTERVAL
	1198	5821											
GR	"	"	342	Y	9m/m	D	9m/m	1	'	1.82	42	00	42
LSD	"	"	0336	Y	9m/m	D	9m/m	.3	7.21	'	42	00	42

ADDITIONAL SONDES RUN

SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG

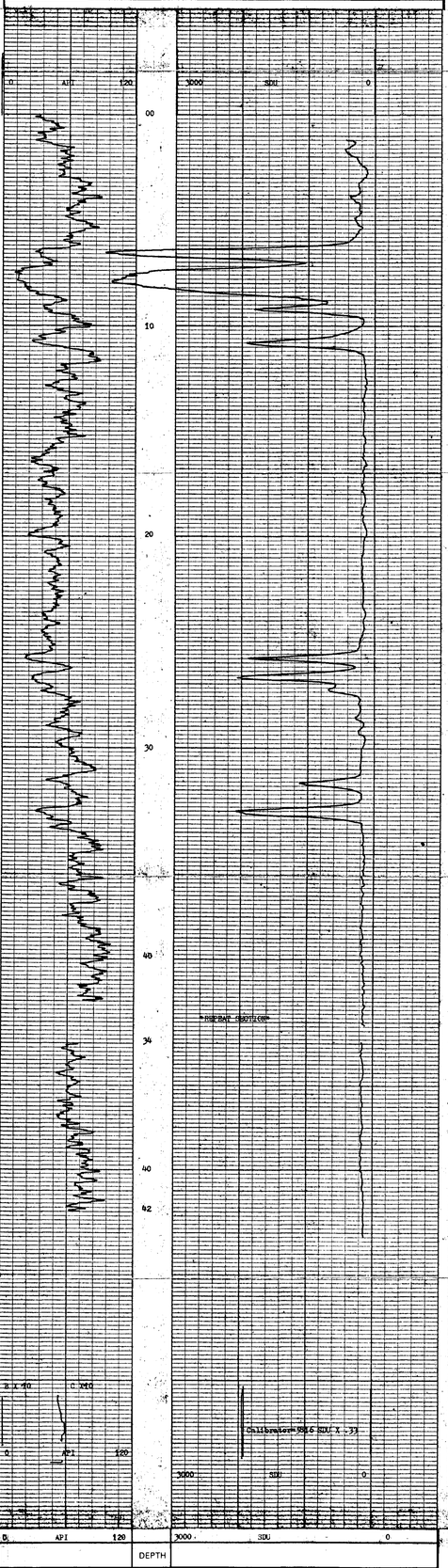
REFER TO ADDITIONAL HEADINGS

REMARKS

No open hole logs were available, CCS only was run at client's request.

DEPTH

0 API 120 | 3000 SDU 0



D 0 API 120 | 3000 SDU 0

DEPTH

BOREHOLE TW82D-208-A
CLIENT Crows Nest Resources Ltd.
AREA Telkwa B.C.
COUNTRY Canada

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BPB

COAL QUALITY LOG

BOREHOLE TW20-208-A (2)
CLIENT Crows Nest Resources Ltd.
AREA Tsiame B.C.
COUNTRY Canada
DATE LOGGED 16/Sep/82
RUN NO. 1
DEPTH DRILLER 1200
DEPTH LOGGER 1201
BTM LOG INTERVAL 1200
TOP LOG INTERVAL 0
CASING DRILLER 0
CASING LOGGER 0
BIT SIZE 6 1/4"
TYPE FLUID AIR
DENSITY
VISCOSITY
PH
FLUID LOSS
SOURCE OF SAMPLE
RM @ MEAS TEMP
RMF @ MEAS TEMP
RMC @ MEAS TEMP
SOURCE RMF RMC
RM @ BHT
TIME SINCE CIRC
MAX REC TEMP
EQUIP LOCATION
RECORDED BY
WITNESSED BY

BOREHOLE DATA
BASE TO LITHOLOGY LOG

OPERATION DATA
EQUIPMENT AND RECORDING DATA

COAL COMBUSTION SONDE

	RUN 1	RUN 2	RUN 3
DATE	16/Sep/82		
TIME	14:30		
LOG NO.	1		
TOP LOG INTERVAL	0		
BTM LOG INTERVAL	1200		
CASING DRILLER	0		
CASING LOGGER	0		
BIT SIZE	6 1/4"		
TYPE FLUID	AIR		
DENSITY			
VISCOSITY			
PH			
FLUID LOSS			
SOURCE OF SAMPLE			
RM @ MEAS TEMP			
RMF @ MEAS TEMP			
RMC @ MEAS TEMP			
SOURCE RMF RMC			
RM @ BHT			
TIME SINCE CIRC			
MAX REC TEMP			
EQUIP LOCATION			
RECORDED BY			
WITNESSED BY			

SONDE TYPE
COAL COMBUSTION SONDE

LOG SUITE
GAMMA RAY
L.S. DENSITY

REMARKS

COAL QUALITY LOG INTERVALS

	Top	Bottom
	34.0m	35.0m
	4.0m	5.0m
	7.0m	8.0m
	12.0m	13.0m
	25.0m	26.0m
	4.0m	5.0m
	7.0m	8.0m

BPB COAL QUALITY LOG

GAMMA RAY API 0 120
COAL BULK DENSITY g/cm³ 1000 1500 2000

GAMMA RAY API 0 120
COAL BULK DENSITY g/cm³ 1000 1500 2000

BPB
BOREHOLE TW20-208-A
CLIENT Crows Nest Resources Ltd.
AREA Tsiame B.C.
COUNTRY Canada
COAL QUALITY LOG

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BOREHOLE TW820-208-A (3)
CLIENT Crows Nest Resources Ltd.
AREA Telkwa B.C.
COUNTRY Canada
DATE LOGGED 16/Sep/82
LOG SCALE 1:100
J. of J. 1000

SEAM THICKNESS LOG

BOREHOLE DATA — REFER TO LITHOLOGY LOG
OPERATION DATA — REFER TO LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA
COAL COMBINATION SONDE — SIDEWALL POSITION

LOG	SERIAL NO.	SERIAL NO.	SERIAL NO.	SERIAL NO.	SERIAL NO.	SERIAL NO.
CALIPER	1	2	3	4	5	6
SONDE	1	2	3	4	5	6
SOURCE SONDE AND CALIBRATION						
SEAM THICKNESS LOG						

SONDE TYPE
COAL COMBINATION SONDE

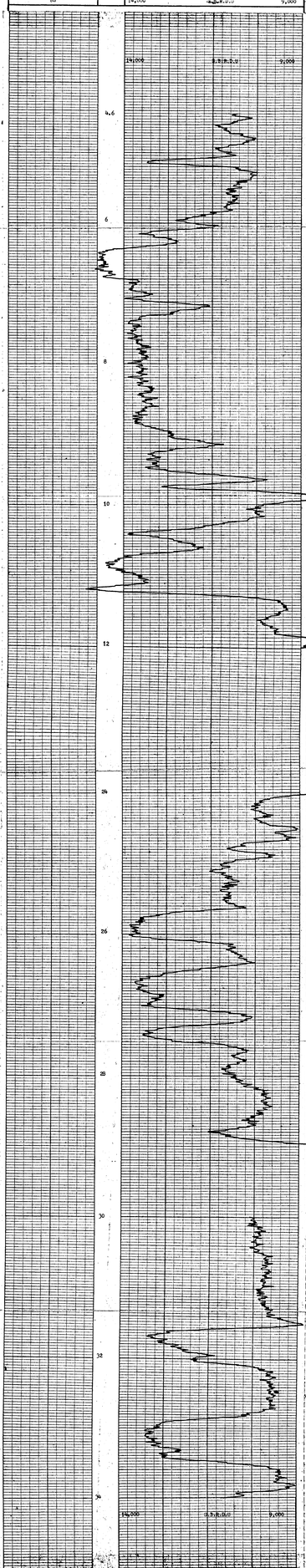
LOG SUITE
CALIPER
B.R. DENSITY

FROM	30.0m	20.0m	12.0m
TO	30.0m	20.0m	4.0m
INTERVAL	4.0m	5.0m	7.4m
FROM			
TO			
INTERVAL			

REMARKS
Caliper log not displayed as tool was run through 20ft.

B P B SEAM THICKNESS LOG

CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
0		14,000 — B.R.R.D.U — 9,000



CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
0		14,000 — B.R.R.D.U — 9,000

BOREHOLE TW820-208-A
CLIENT Crows Nest Resources Ltd.
AREA Telkwa B.C.
COUNTRY Canada

SEAM THICKNESS LOG

MT 88003 R

TK Telkwa 82(31)A

TW-82D-209

TW-82R-209

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LOG DEPTH	0140.00	
TRUE DEPTH	0137.19	
TILT	12.31	DG
BEARING	3.17	DG
NORTHING	+024.52	
EASTING	+001.39	

LOG DEPTH	0130.00	
TRUE DEPTH	0127.42	
TILT	13.26	DG
BEARING	.40	DG
NORTHING	+022.39	
EASTING	+001.27	

LOG DEPTH	0120.00	
TRUE DEPTH	0117.69	
TILT	13.54	DG
BEARING	.01	DG
NORTHING	+020.09	
EASTING	+001.26	

LOG DEPTH	0110.00	
TRUE DEPTH	0107.97	
TILT	13.72	DG
BEARING	357.89	DG
NORTHING	+017.75	
EASTING	+001.26	

LOG DEPTH	0100.00	
TRUE DEPTH	0098.26	
TILT	13.70	DG
BEARING	.12	DG
NORTHING	+015.38	
EASTING	+001.34	

LOG DEPTH	0090.00	
TRUE DEPTH	0088.54	
TILT	13.00	DG
BEARING	3.89	DG
NORTHING	+013.01	
EASTING	+001.34	

LOG DEPTH	0080.00	
TRUE DEPTH	0078.80	
TILT	12.05	DG
BEARING	7.13	DG
NORTHING	+010.77	
EASTING	+001.19	

LOG DEPTH	0070.00	
TRUE DEPTH	0069.02	
TILT	13.12	DG
BEARING	6.64	DG
NORTHING	+008.69	
EASTING	+000.93	

LOG DEPTH	0060.00	
TRUE DEPTH	0059.28	
TILT	12.29	DG
BEARING	3.19	DG
NORTHING	+006.44	
EASTING	+000.66	

LOG DEPTH	0050.00	
TRUE DEPTH	0049.51	
TILT	11.70	DG
BEARING	1.06	DG
NORTHING	+004.31	
EASTING	+000.55	

LOG DEPTH	0040.00	
TRUE DEPTH	0039.72	
TILT	13.56	DG
BEARING	12.63	DG
NORTHING	+002.28	
EASTING	+000.51	

LOG DEPTH	0030.00	
TRUE DEPTH	0030.00	
TILT	13.75	DG
BEARING	23.74	DG
NORTHING	+000.00	
EASTING	+000.00	

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TA TIRAMA 82/2/28

BPB INSTRUMENTS (CANADA) LTD.

BOREHOLE TA-82A-209 (1)

AREA TIRAMA

COUNTRY CANADA

DATE LOGGED 26-02-82

DATUM 0 GL

DATUM DEPTH 1000.00

BOREHOLE DATA

RECORD NO. 1 FROM 0.00 TO 1000.00

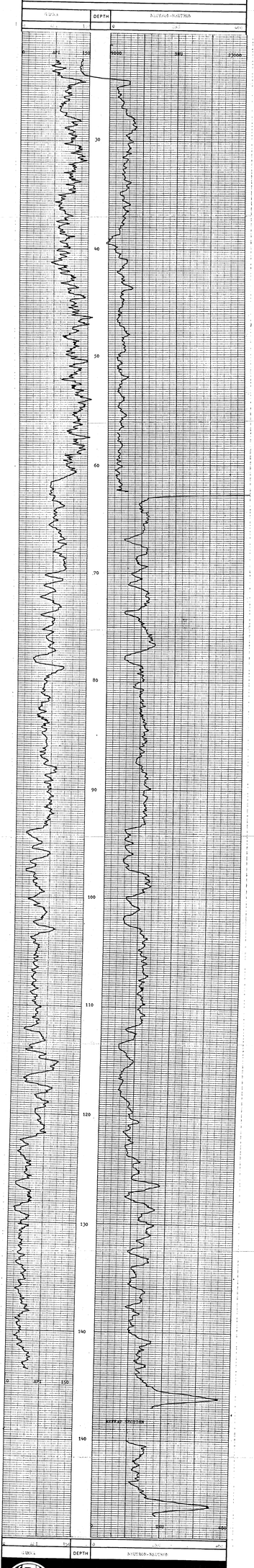
OPERATION DATA

RECORD NO. 1 FROM 0.00 TO 1000.00

EQUIPMENT AND RECORDING DATA

LOG	TRACK	SENSOR	SPEED	FROM	TO
1	1			0.00	1000.00
2	2			0.00	1000.00
3	3			0.00	1000.00
4	4			0.00	1000.00

REMARKS



BPB INSTRUMENTS (CANADA) LTD.

BOREHOLE TA-82A-209

CLIENT CHART EXPLORATION LTD.

AREA TIRAMA

COUNTRY CANADA

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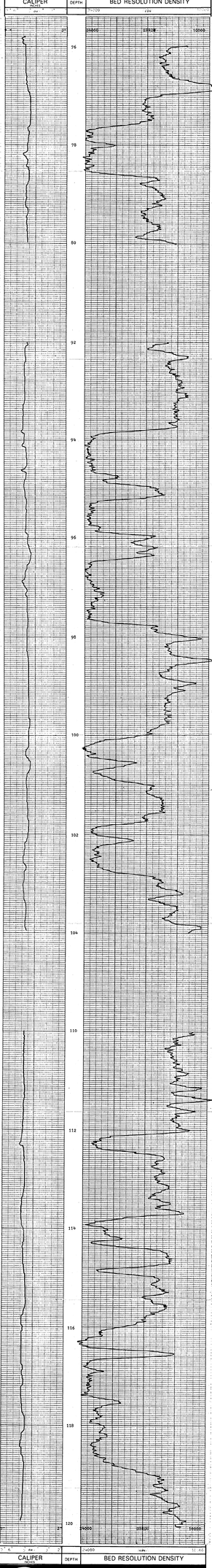
Tx-Tetra 8/9/99

BOREHOLE TX-829-209 (2)
CLIENT [illegible]
AREA TELEKA
COUNTRY CANADA
DATE LOGGED 25-02-82
DEPTH SCALE 1:200
SEAM THICKNESS LOG

BOREHOLE DATA	HEIGHT 10.0 MIN/DIV 100.0
OPERATION DATA	HEIGHT 10.0 MIN/DIV 100.0
EQUIPMENT AND RECORDING DATA	CALIPER CALIBRATION
SEAM THICKNESS LOG INTERVALS	
LOG SUITE	
CALIPER	
B P DENSITY	

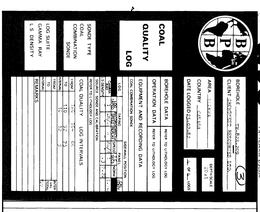
SONDE TYPE	
COAL COMBINATION SONDE	
SEAM THICKNESS LOG INTERVALS	
LOG SUITE	
CALIPER	
B P DENSITY	
REMARKS	

B P B SEAM THICKNESS LOG



BOREHOLE TX-829-209	AREA TELEKA
CLIENT [illegible]	COUNTRY CANADA

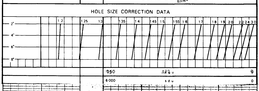
SEAM THICKNESS LOG

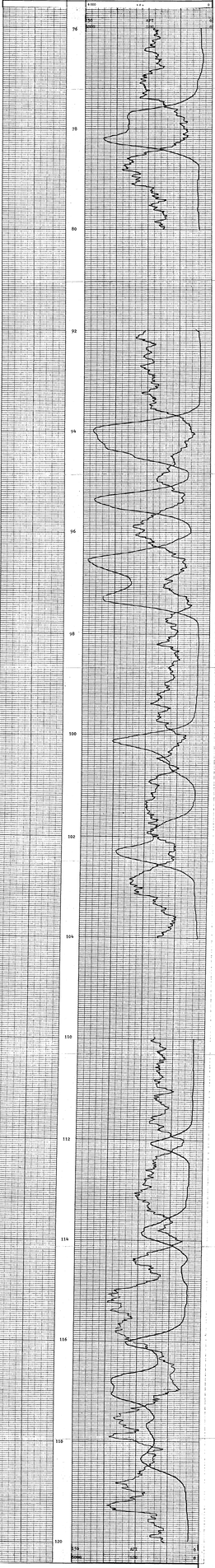


BPB COAL QUALITY LOG

DEPTH: GAMMA RAY / COAL BULK DENSITY

HOLE SIZE CORRECTION DATA





	6100
	990
DEPTH	COAL BULK DENSITY / GAMMA RAY

BOREHOLE [illegible] AREA [illegible]

CLIENT [illegible] COUNTRY [illegible]

COAL QUALITY LOG

COAL LITHOLOGY LOG

BPB

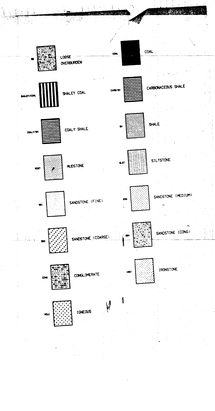
EQUIPMENT AND RECORDING DATA

CALIBRATION DATA

BPB COAL LITHOLOGY LOG

GAMMA RAY | BULK DENSITY | CALIPER

HOLE SIZE CORRECTION DATA



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Tr. Tolkwa 82(3)A

TW-82D-210

DIRECTIONAL SURVEY

TW-82D-210

LOG DEPTH	0250.00	
TRUE DEPTH	0245.51	
TILT	18.28	DG
BEARING	286.57	DG
NORTHING	+038.70	
EASTING	+009.21	

LOG DEPTH	0240.00	
TRUE DEPTH	0236.01	
TILT	13.27	DG
BEARING	4.33	DG
NORTHING	+037.80	
EASTING	+012.21	

LOG DEPTH	0230.00	
TRUE DEPTH	0226.28	
TILT	12.62	DG
BEARING	1.01	DG
NORTHING	+035.51	
EASTING	+012.04	

LOG DEPTH	0220.00	
TRUE DEPTH	0216.52	
TILT	11.19	DG
BEARING	359.33	DG
NORTHING	+033.33	
EASTING	+012.00	

LOG DEPTH	0210.00	
TRUE DEPTH	0206.71	
TILT	10.53	DG
BEARING	359.53	DG
NORTHING	+031.38	
EASTING	+012.02	

LOG DEPTH	0200.00	
TRUE DEPTH	0196.88	
TILT	10.93	DG
BEARING	.80	DG
NORTHING	+029.56	
EASTING	+012.04	

LOG DEPTH	0190.00	
TRUE DEPTH	0187.06	
TILT	9.42	DG
BEARING	1.34	DG
NORTHING	+027.66	

LOG DEPTH	0180.00	
TRUE DEPTH	0177.20	
TILT	7.17	DG
BEARING	11.29	DG
NORTHING	+026.02	
EASTING	+011.97	

LOG DEPTH	0170.00	
TRUE DEPTH	0167.28	
TILT	8.00	DG
BEARING	11.93	DG
NORTHING	+024.80	
EASTING	+011.73	

LOG DEPTH	0160.00	
TRUE DEPTH	0157.38	
TILT	8.04	DG
BEARING	8.99	DG
NORTHING	+023.43	
EASTING	+011.44	

LOG DEPTH	0150.00	
TRUE DEPTH	0147.48	
TILT	6.30	DG
BEARING	22.61	DG
NORTHING	+022.05	
EASTING	+011.22	

LOG DEPTH	0140.00	
TRUE DEPTH	0137.54	
TILT	10.26	DG
BEARING	30.31	DG
NORTHING	+021.04	
EASTING	+010.80	

LOG DEPTH	0130.00	
TRUE DEPTH	0127.70	
TILT	12.08	DG
BEARING	34.82	DG
NORTHING	+019.50	
EASTING	+009.90	

LOG DEPTH	0120.00	
TRUE DEPTH	0117.92	
TILT	8.52	DG
BEARING	38.60	DG
NORTHING	+017.78	
EASTING	+008.70	

LOG DEPTH	0110.00	
TRUE DEPTH	0108.03	
TILT	9.79	DG
BEARING	36.62	DG
NORTHING	+016.62	

TRUE DEPTH	0098.18	
TILT	11.79	DG
BEARING	21.96	DG
NORTHING	+015.26	
EASTING	+006.76	

LOG DEPTH	0090.00	
TRUE DEPTH	0088.39	
TILT	9.00	DG
BEARING	19.71	DG
NORTHING	+013.36	
EASTING	+006.00	

LOG DEPTH	0080.00	
TRUE DEPTH	0078.51	
TILT	10.60	DG
BEARING	29.32	DG
NORTHING	+011.89	
EASTING	+005.47	

LOG DEPTH	0070.00	
TRUE DEPTH	0068.68	
TILT	14.25	DG
BEARING	24.11	DG
NORTHING	+010.28	
EASTING	+004.57	

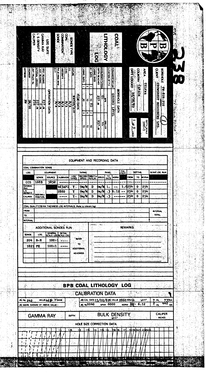
LOG DEPTH	0060.00	
TRUE DEPTH	0058.99	
TILT	14.22	DG
BEARING	19.24	DG
NORTHING	+008.04	
EASTING	+003.56	

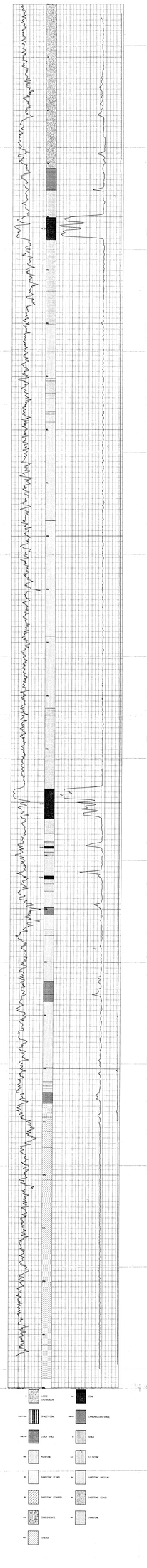
LOG DEPTH	0050.00	
TRUE DEPTH	0049.30	
TILT	14.13	DG
BEARING	23.66	DG
NORTHING	+005.72	
EASTING	+002.75	

LOG DEPTH	0040.00	
TRUE DEPTH	0039.60	
TILT	13.46	DG
BEARING	32.87	DG
NORTHING	+003.48	
EASTING	+001.77	

LOG DEPTH	0030.00	
TRUE DEPTH	0029.87	
TILT	9.28	DG
BEARING	18.64	DG
NORTHING	+001.52	
EASTING	+000.51	

LOG DEPTH	0020.00	
TRUE DEPTH	0020.00	
TILT	5.72	DG


LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA
BPB COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
BULK DENSITY
ADDITIONAL SCANNING RUN
REMARKS



LIGNITE
COAL
SHALTY COAL
CARBONACEOUS SHALE
COALY SHALE
SHALE
PEAT/PEAT
FLUVSTONE
SANDSTONE (FINE)
SANDSTONE (MEDIUM)
SANDSTONE (COARSE)
SANDSTONE (CONG)
CONGLOMERATE
MARL
CHALK

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TK Telkwa 82/3/A

BOREHOLE TW-82R-210 (2)
CLIENT CROWSNEST RESOURCES LTD.
AREA TELKWA
COUNTRY CANADA
DATE LOGGED 02/28/82
OPTIMISCALE 2011
__ OF __ LOGS

SEAM THICKNESS LOG

BOREHOLE DATA — REFER TO LITHOLOGY LOG
OPERATION DATA — REFER TO LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA
COAL COMBINATION SONDE
SIDEWALL POSITION

LOG	TRACING	SCALE	SPEED	MIN.	MAX.
CALIPER	1	2	1	0	6
BR NORM	1	2	1	1	3
SOURCE SONDE AND CALIBRATION					
REFER TO LITHOLOGY LOG					

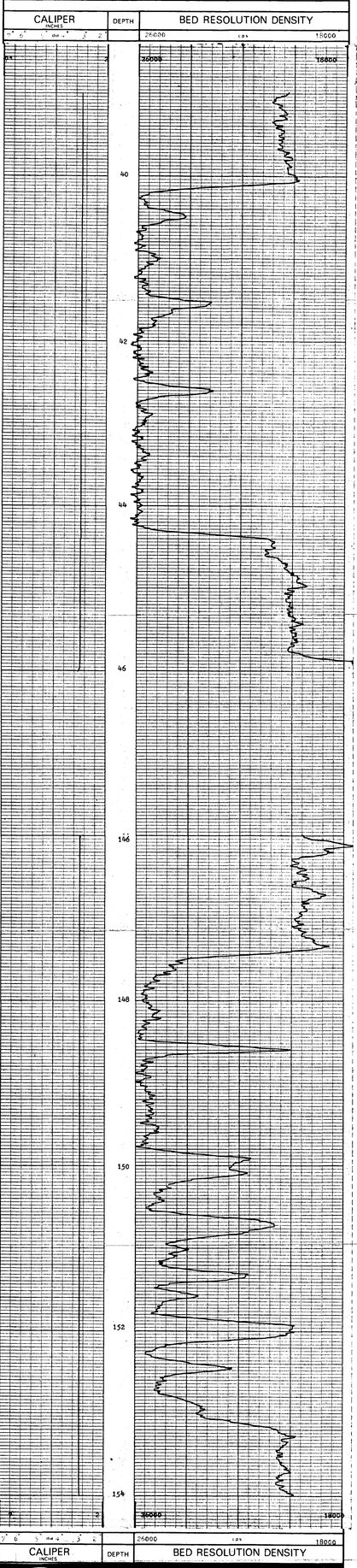
SEAM THICKNESS LOG INTERVALS

FROM	154	
TO	146	
INTERVAL	8	
FROM	46	
TO	37	
INTERVAL	9	
REMARKS		

SONDE TYPE
COAL COMBINATION SONDE

LOG SUITE
CALIPER
BR DENSITY

B P B SEAM THICKNESS LOG



CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY

BOREHOLE TW-82R-210
CLIENT CROWSNEST RESOURCES LTD.
AREA TELKWA
COUNTRY CANADA

SEAM THICKNESS LOG

MT 88003 R

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TK-Telkwa 8-2(3)A

BOREHOLE TK-82R-210 (3)
CLIENT CROWSNEST RESOURCES LTD.
AREA TELKWA
COUNTRY CANADA
DATE LOGGED 02/28/82
DEPTH SCALE 20:1
3 OF 5 LOGS

BOREHOLE DATA — REFER TO LITHOLOGY LOG
OPERATION DATA — REFER TO LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA
COAL COMBINATION SONDE

LOG	TAPING	SIDEWALL POSITION	PANEL
GAMMA RAY	1	1	1
L.S. DENSITY	1	1	1
SOURCE SONDE AND CALIBRATION	1	1	1

REFER TO LITHOLOGY LOG

COAL QUALITY LOG INTERVALS

FROM	3.94	46
TO	3.46	39
INTERVAL	8	7
FROM		
TO		
INTERVAL		

REMARKS

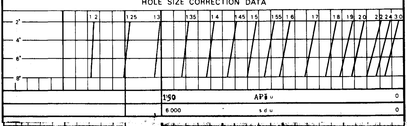
SONDE TYPE
COAL COMBINATION SONDE

LOG SUITE
GAMMA RAY
L.S. DENSITY

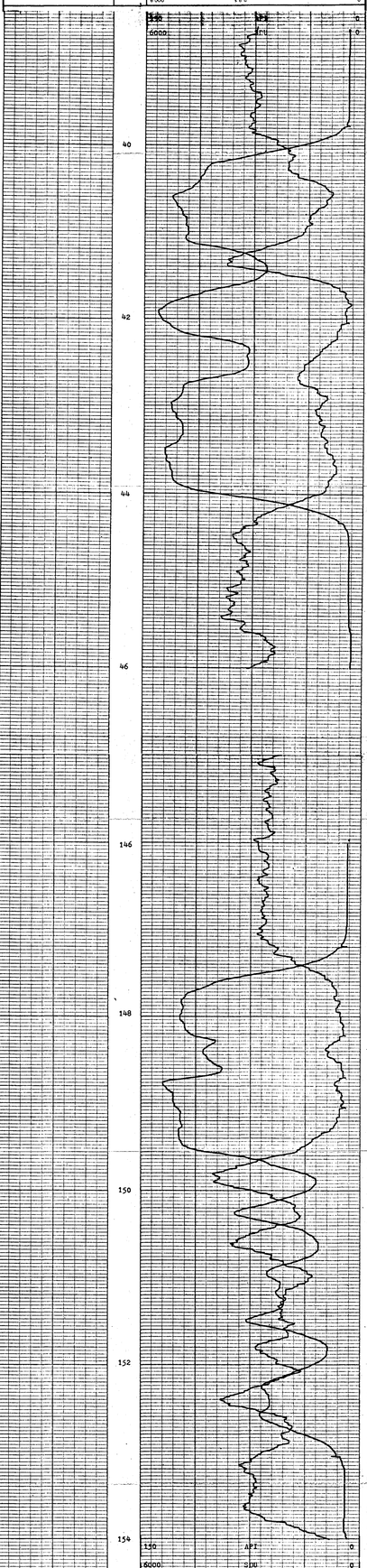
BPB COAL QUALITY LOG

DEPTH	GAMMA RAY
	COAL BULK DENSITY g/cm³

HOLE SIZE CORRECTION DATA



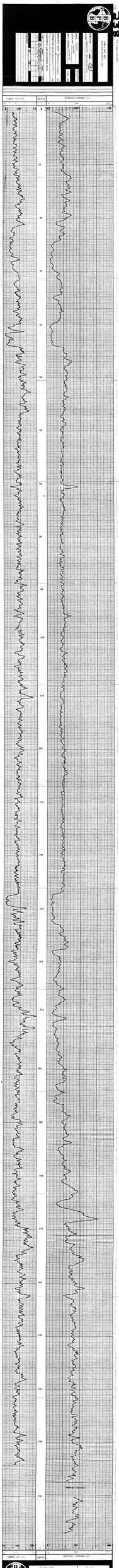
	150 API	0
	6000 kdu	0



	6000 kdu	0
	150 API	0
	COAL BULK DENSITY g/cm³	
DEPTH	GAMMA RAY	

BOREHOLE TK-82R-210
CLIENT CROWSNEST RESOURCES LTD.
AREA TELKWA
COUNTRY CANADA

COAL QUALITY LOG



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TK-Telkwa 82(3)A

FOCUSED ELECTRIC LOG

BOREHOLE TW-82R-210 (5)

CLIENT CROWSNEST RESOURCES LTD.

AREA TELKWA

COUNTRY CANADA

DATE LOGGED 02/28/82

DEPTH SCALE [illegible]

2 OF 2 LOGS

BOREHOLE DATA REFER TO LITHOLOGY LOG

OPERATION DATA REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

LOG	TAPING			PANEL		
	LOG TAPED	RECORD SPEED	DIRECT OR REPLAY	SPEED	T.C. SECS	NORM	CAL COEFF
FE	Y	9m/M	D	9m/M	.3	--	--

SONDE NO 1621 SOURCE NO --

REMARKS

	DEPTH	FOCUSED ELECTRIC LOG
		20 OHM/METERS 2000

		20 OHM/METERS 2000
	DEPTH	FOCUSED ELECTRIC LOG

BOREHOLE TW-82R-210

CLIENT CROWSNEST RESOURCES LTD.

AREA TELKWA

COUNTRY CANADA

MY A584528

TK-Tatkwa 82(3)A

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DIRECTIONAL SURVEY

TW-82D-211

LOG DEPTH	0140.00
TRUE DEPTH	0136.90
TILT	15.04 DG
BEARING	10.88 DG
NORTHING	+025.59
EASTING	+001.63

LOG DEPTH	0130.00
TRUE DEPTH	0127.24
TILT	15.13 DG
BEARING	6.83 DG
NORTHING	+023.04
EASTING	+001.14

LOG DEPTH	0120.00
TRUE DEPTH	0117.59
TILT	14.65 DG
BEARING	.73 DG
NORTHING	+020.44
EASTING	+000.83

LOG DEPTH	0110.00
TRUE DEPTH	0107.92
TILT	13.89 DG
BEARING	355.39 DG
NORTHING	+017.91
EASTING	+000.80

LOG DEPTH	0100.00
TRUE DEPTH	0098.21
TILT	14.15 DG
BEARING	356.87 DG
NORTHING	+015.52
EASTING	+000.99

LOG DEPTH	0090.00
TRUE DEPTH	0088.51
TILT	14.51 DG
BEARING	358.86 DG
NORTHING	+013.08
EASTING	+001.12

LOG DEPTH	0080.00
TRUE DEPTH	0078.83
TILT	10.83 DG
BEARING	7.27 DG
NORTHING	+010.57
EASTING	+001.17

LOG DEPTH	0070.00
TRUE DEPTH	0069.01
TILT	11.07 DG
BEARING	10.40 DG
NORTHING	+008.71
EASTING	+000.93

LOG DEPTH	0060.00
TRUE DEPTH	0059.20
TILT	14.50 DG
BEARING	4.38 DG
NORTHING	+006.82
EASTING	+000.59

LOG DEPTH	0050.00
TRUE DEPTH	0049.52
TILT	12.47 DG
BEARING	3.05 DG
NORTHING	+004.32
EASTING	+000.40

LOG DEPTH	0040.00
TRUE DEPTH	0039.76
TILT	12.63 DG
BEARING	7.49 DG
NORTHING	+002.16
EASTING	+000.28

LOG DEPTH	0030.00
TRUE DEPTH	0030.00
TILT	14.45 DG
BEARING	12.01 DG
NORTHING	+000.00
EASTING	+000.00

BPB INSTRUMENTS (UK) LTD.

COAL LITHOLOGY LOG

WELL NAME & NUMBER: 1 LOWRY'S FARM BOREHOLE

LOCATION: LOWRY'S FARM

TOOL DESCRIPTION: GAMMA RAY DENSITY

LOG RUN NO. 1

DATE: 5-8-83

OPERATOR: [illegible]

WELL: [illegible]

COUNTY: [illegible]

STATE: [illegible]

OTHER SERVICES: [illegible]

PERMANENT DATUM: [illegible]

ELEV.: K.B. [illegible] D.F. [illegible] G.L. [illegible]

LOG MEASURED FROM: [illegible]

DRILLING MEASURED FROM: [illegible]

RUN NO.	BIT FROM	BIT TO	CASING DRILLER	CASING LOGGER	CASING SIZE	WT/FT	TYPE FLUID IN HOLE	DENSITY	VISCOSITY	PH	FLUID LOSS	SOURCE OF SAMPLE	RM @ MEAS. TEMP.	RMF @ MEAS. TEMP.	RMC @ MEAS. TEMP.	SOURCE OF RMF	SOURCE OF RMC	RM @ BHT	TIME SINCE CIRC.	MAX. REC. TEMP.	EQUIP. LOCATION	RECORDED BY	WITNESSED BY
1	0	1055	1055																				

BIT RECORD

BIT NO.	SIZE	MAKE	TYPE	JETS OR TFA

CASING RECORD

SIZE	WT/FT	GRADE	FROM	TO

MUD RECORD

TYPE	WEIGHT	VISCOSITY	PH	FLUID LOSS

EQUIPMENT AND RECORDING DATA

TOOL COMBINATION SHOWN

SIZE	EQUIPMENT SOURCE	EQUIPMENT SERIAL NUMBER	TOOL DIAMETER (IN.)	TOOL LENGTH (FT.)	PANEL SETTING (FT.)	PANEL SETTING (IN.)	LOG SCALE	INITIAL SETTING		RUN OR PASS
								top	bottom	
	1055	1010								
GAMMA RAY		45369	3	14/6	2	14/6	1	+1.3	1155	2	1155
DENSITY		3545502	3	14/6	2	14/6	1	+3.2	--	145	2	145
CALIPER	DENSITY SONDE	--	3	14/6	2	14/6	1	--	--	145	2	145

TOTAL DEPTH DRILLER (FT.) 1055 TOTAL DEPTH LOGGER (FT.) 1010 BOTTOM LOGGED INTERVAL (FT.) 1010 TOP LOGGED INTERVAL (FT.) 0

CASING DRILLER (FT.) 1055 CASING LOGGER (FT.) 1055 BIT SIZE (IN.) 6 TYPE FLUID IN HOLE [illegible]

DENSITY (LB/GAL) [illegible] VISCOSITY (SEC) [illegible] PH [illegible] FLUID LOSS (ML) [illegible]

SOURCE OF SAMPLE [illegible] RM @ MEAS. TEMP. [illegible] RMF @ MEAS. TEMP. [illegible] RMC @ MEAS. TEMP. [illegible]

SOURCE OF RMF [illegible] SOURCE OF RMC [illegible] RM @ BHT [illegible] TIME SINCE CIRC. [illegible]

MAX. REC. TEMP. [illegible] EQUIP. LOCATION [illegible] RECORDED BY [illegible] WITNESSED BY [illegible]

RUN NO. 1 DATE 5-8-83

TOOL DEVIATION RANGE FROM [illegible] TO [illegible] INTERNAL [illegible] EXTERNAL [illegible]

ADDITIONAL SONDES RUN

SONDE	S/N	CENTRE	OFFSET
204	N.R.	1061	---
218	V1251	---	---

NOTE TO ADDITIONAL HEADINGS

REMARKS

[illegible]

BPB COAL LITHOLOGY LOG

CALIBRATION DATA

R_m 242 m_f=4633 3.5mm

R_{mf} 0.8 m_c=1061 ---

(R MAIN SCREEN AT ABOVE VALUE)

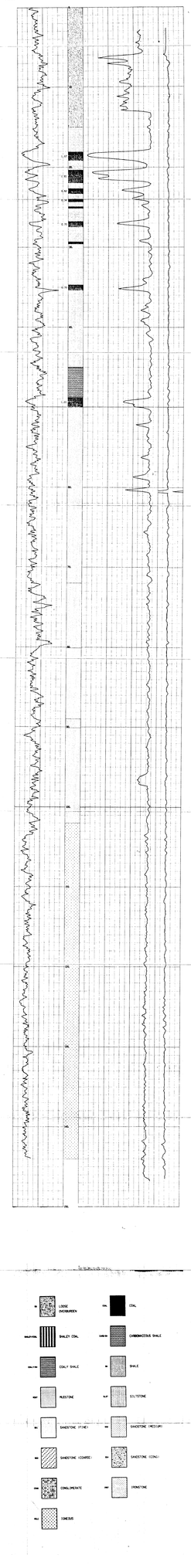
R_m on m=4633/242/0.8 m_c=4850 $\Omega m^2/m$ T= 320 m

R_{mf} on m_f=6000 $\Omega m^2/m$ R_{mf}=7.35 Ωm T= 540 m

R_{mc} on m_c=6000 $\Omega m^2/m$ R_{mc}=6.0 Ωm T= 540 m

GAMMA RAY (API) | BULK DENSITY (g/cc) | CALIPER (INCH)

HOLE SIZE CORRECTION DATA



LEGEND

- LOOSE OVERBURDEN
- COAL
- SHALEY COAL
- CARBONACEOUS SHALE
- COALY SHALE
- SHALE
- K/STONE
- SILTSTONE
- SANDSTONE (FINE)
- SANDSTONE (MEDIUM)
- SANDSTONE (COARSE)
- SANDSTONE (CONG)
- CONGLOMERATE
- IRONSTONE
- GNEISS

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Tk-Telkwa 8a(3)A

SEAM THICKNESS LOG

BOREHOLE	TW-BPB-211 (2)
CLIENT	[illegible]
AREA	[illegible]
COUNTRY	[illegible]
DATE LOGGED	07/28/82
DEPTH SCALE	1 OF 1 LOGS

BOREHOLE DATA	REFER TO LITHOLOGY LOG
OPERATION DATA	REFER TO LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA	
COAL COMBINATION SONDE	
SIDEWALL POSITION	

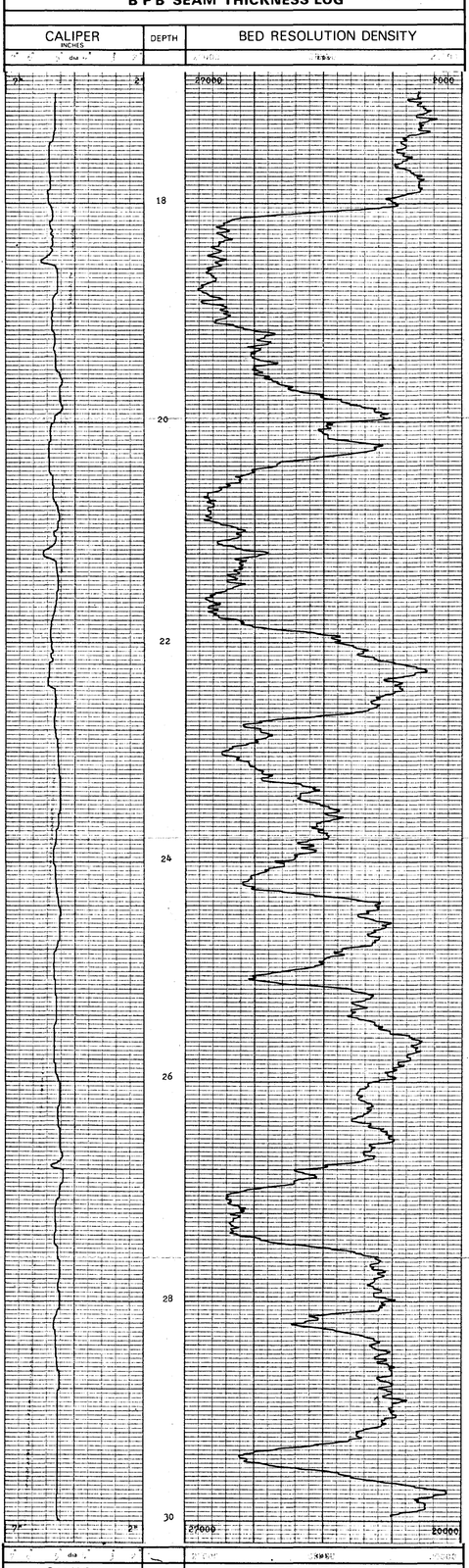
LOG	TAPING	PANEL	
CALIPER	1	1	NORM
BR DENSITY	1	1	
SOURCE SONDE AND CALIBRATION			
REFER TO LITHOLOGY LOG			

SEAM THICKNESS LOG INTERVALS		
FROM	30	
TO	30	
INTERVAL	30	
FROM		
TO		
INTERVAL		
REMARKS		

SONDE TYPE
COAL COMBINATION SONDE

LOG SUITE
CALIPER
BR DENSITY

B P B SEAM THICKNESS LOG



BOREHOLE	TW-BPB-211
CLIENT	CROWSNEST RESOURCES LTD.
AREA	TELKWA
COUNTRY	CANADA

SEAM THICKNESS LOG

MY 88003 R

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BPB

COAL QUALITY LOG

BOREHOLE TA-82A-211 (W)
CLIENT CROWNEST RESOURCES LTD.
AREA [illegible]
COUNTRY CANADA
DATE LOGGED 02/28/82
1 OF 4 LOGS
DEPTH SCALE 1/240

BOREHOLE DATA — REFER TO LITHOLOGY LOG
OPERATION DATA — REFER TO LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA

LOG	RUN NO.	TIME	RECORDED	READING	PANEL SETTING
GAMMA	1	1:30	2/28/82	1500	1500
L.S. DENSITY	1	1:30	2/28/82	1500	1500

COAL COMBINATION SONDE
SIDEWALL POSITION
SOURCE SONDE AND CALIBRATION
REFER TO LITHOLOGY LOG

COAL QUALITY LOG INTERVALS

	FROM	TO	INTERVAL
LOG			
DRILLER	30'	1300'	1270'
LOGGER			

REMARKS

SONDE TYPE
COAL COMBINATION SONDE

LOG SUITE
GAMMA RAY
L.S. DENSITY

BPB COAL QUALITY LOG

DEPTH — GAMMA RAY
COAL BULK DENSITY g/cm³

HOLE SIZE CORRECTION DATA

2" 4" 6" 8"
1.2 1.25 1.3 1.35 1.4 1.45 1.5 1.55 1.6 1.7 1.8 1.9 2.0 2.2 2.4 3.0

150 API 0
6000 s d u 0

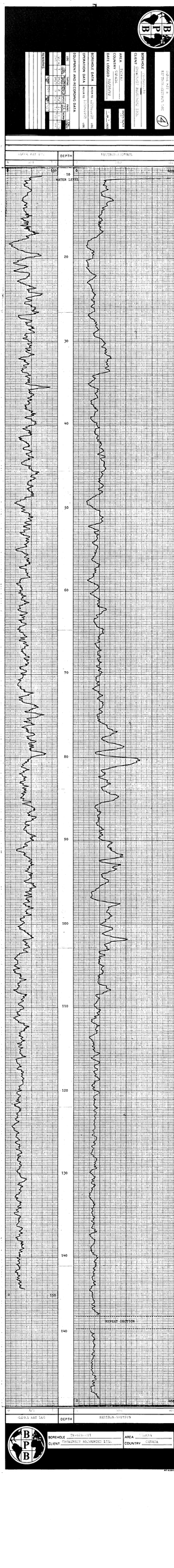
16 18 20 22 24 26 28 30

6000 s d u 0
150 API 0
COAL BULK DENSITY g/cm³
DEPTH — GAMMA RAY

BPB

BOREHOLE TA-82A-211 AREA [illegible]
CLIENT CROWNEST RESOURCES LTD. COUNTRY CANADA

COAL QUALITY LOG


GAMMA RAY API
DEPTH
ELECTRICAL DEPTHS
WATER LEVEL
REPEAT SECTION
BOREHOLE
CLIENT
AREA
COUNTRY
CANADA

TW 212

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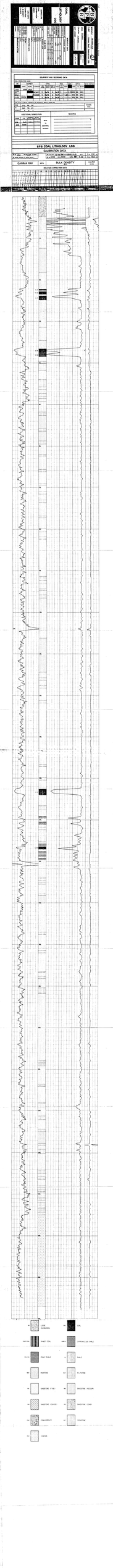
LOG DEPTH	0260.00	
TRUE DEPTH	0254.41	
TILT	15.34	DG
BEARING	11.04	DG
NORTHING	+047.66	
EASTING	+000.10	
LOG DEPTH	0250.00	
TRUE DEPTH	0244.77	
TILT	15.64	DG
BEARING	21.36	DG
NORTHING	+045.07	
EASTING	-000.40	
LOG DEPTH	0240.00	
TRUE DEPTH	0235.14	
TILT	16.08	DG
BEARING	27.93	DG
NORTHING	+042.56	
EASTING	-001.38	
LOG DEPTH	0230.00	
TRUE DEPTH	0225.53	
TILT	15.70	DG
BEARING	12.39	DG
NORTHING	+040.11	
EASTING	-002.68	
LOG DEPTH	0220.00	
TRUE DEPTH	0215.90	
TILT	15.60	DG
BEARING	6.80	DG
NORTHING	+037.46	
EASTING	-003.26	
LOG DEPTH	0210.00	
TRUE DEPTH	0206.27	
TILT	16.13	DG
BEARING	9.60	DG
NORTHING	+034.79	
EASTING	-003.58	
LOG DEPTH	0200.00	
TRUE DEPTH	0196.66	
TILT	15.80	DG
BEARING	3.78	DG
NORTHING	+032.05	
EASTING	-004.05	
LOG DEPTH	0190.00	
TRUE DEPTH	0187.04	
TILT	15.02	DG
BEARING	357.09	DG
NORTHING	+029.33	
EASTING	-004.23	
LOG DEPTH	0180.00	
TRUE DEPTH	0177.38	
TILT	14.67	DG
BEARING	350.73	DG
NORTHING	+026.74	
EASTING	-004.09	

LOG DEPTH	0170.00	
TRUE DEPTH	0167.71	
TILT	13.91	DG
BEARING	344.53	DG
NORTHING	+024.24	
EASTING	-003.69	
LOG DEPTH	0160.00	
TRUE DEPTH	0158.00	
TILT	13.29	DG
BEARING	342.11	DG
NORTHING	+021.93	
EASTING	-003.05	
LOG DEPTH	0150.00	
TRUE DEPTH	0148.27	
TILT	11.96	DG
BEARING	340.11	DG
NORTHING	+019.74	
EASTING	-002.34	
LOG DEPTH	0140.00	
TRUE DEPTH	0138.49	
TILT	11.14	DG
BEARING	339.97	DG
NORTHING	+017.79	
EASTING	-001.63	
LOG DEPTH	0130.00	
TRUE DEPTH	0128.68	
TILT	12.47	DG
BEARING	343.95	DG
NORTHING	+015.97	
EASTING	-000.97	
LOG DEPTH	0120.00	
TRUE DEPTH	0118.92	
TILT	12.38	DG
BEARING	344.19	DG
NORTHING	+013.90	
EASTING	-000.37	
LOG DEPTH	0110.00	
TRUE DEPTH	0109.15	
TILT	7.80	DG
BEARING	355.20	DG
NORTHING	+011.83	
EASTING	+000.20	
LOG DEPTH	0100.00	
TRUE DEPTH	0099.24	
TILT	7.30	DG
BEARING	356.31	DG
NORTHING	+010.48	
EASTING	-000.31	
LOG DEPTH	0090.00	
TRUE DEPTH	0089.32	
TILT	8.92	DG
BEARING	345.64	DG
NORTHING	+009.21	
EASTING	+000.39	

LOG DEPTH	0080.00	
TRUE DEPTH	0079.44	
TILT	8.63	DG
BEARING	348.10	DG
NORTHING	+007.71	
EASTING	+000.78	
LOG DEPTH	0070.00	
TRUE DEPTH	0069.55	
TILT	8.67	DG
BEARING	351.24	DG
NORTHING	+006.24	
EASTING	+001.09	
LOG DEPTH	0060.00	
TRUE DEPTH	0059.66	
TILT	6.94	DG
BEARING	355.68	DG
NORTHING	+004.75	
EASTING	+001.32	
LOG DEPTH	0050.00	
TRUE DEPTH	0049.73	
TILT	6.36	DG
BEARING	.67	DG
NORTHING	+003.54	
EASTING	+001.41	
LOG DEPTH	0040.00	
TRUE DEPTH	0039.79	
TILT	6.44	DG
BEARING	21.17	DG
NORTHING	+002.43	
EASTING	+001.40	
LOG DEPTH	0030.00	
TRUE DEPTH	0029.85	
TILT	9.85	DG
BEARING	35.54	DG
NORTHING	+001.39	
EASTING	+000.99	
LOG DEPTH	0020.00	
TRUE DEPTH	0020.00	
TILT	13.17	DG
BEARING	31.54	DG
NORTHING	+000.00	
EASTING	+000.00	

238


EQUIPMENT AND RECORDING DATA
CALIBRATION DATA
BPB COAL LITHOLOGY LOG
GAMMA RAY
BULK DENSITY
LOW DENSITY
MED. DENSITY
HIGH DENSITY
COAL
CARBONACEOUS SHALE
SHALE
SILTSTONE
SANDSTONE - MEDIUM
SANDSTONE - COARSE
SANDSTONE - CONG.
LIMESTONE
DOLOMITE
CHERT

Tk-Telkwa 82(3)A

NEUTRON-NEUTRON & GAMMA RAY LOG (2)

BOREHOLE TW-82R-212

CLIENT Crows Nest Resources Ltd.

AREA TELKWA

COUNTRY CANADA

DATE LOGGED

DEPTH SCALE 100:1

2 OF 4 LOGS

BOREHOLE DATA — REFER TO LITHOLOGY LOG

OPERATION DATA — REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

REMARKS

BOREHOLE TW-82R-212 AREA TELKWA

CLIENT Crows Nest Resources Ltd COUNTRY Canada

BPB

BOREHOLE TW-82K-212 (3)

CLIENT Crows Nest Resources Ltd.

AREA TRIMMA

COUNTRY CANADA

DATE LOGGED 3 OF 4 LOGS

DEPTH SCALE 1:1000

COAL QUALITY LOG

SONDE TYPE
COAL COMBINATION SONDE

LOG SUITE
GAMMA RAY
L.S. DENSITY

BOREHOLE DATA REFER TO LITHOLOGY LOG

OPERATION DATA REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

LOG	TAPING	SIDEWALL POSITION		
		FAR	NEAR	
GAMMA	Y			
L.S. DENSITY	Y			

SOURCE SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

COAL QUALITY LOG INTERVALS

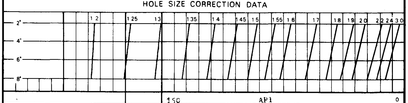
FROM	145	40	26		
TO	144	35	21		
INTERVAL	4	5	5		
FROM					
TO					
INTERVAL					

REMARKS

BPB COAL QUALITY LOG

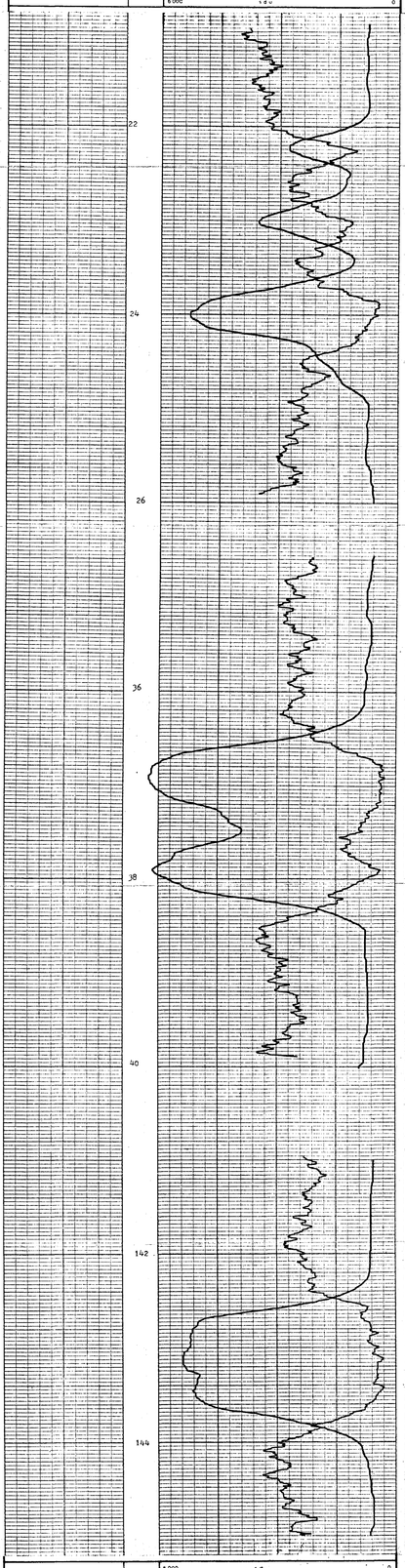
DEPTH	GAMMA RAY
	COAL BULK DENSITY g/cm³

HOLE SIZE CORRECTION DATA



150 API 0

6000 kgs 0



6000 kgs 0

150 API 0

COAL BULK DENSITY g/cm³

DEPTH	GAMMA RAY

BPB

BOREHOLE TW-82K-212

CLIENT Crows Nest Resources Ltd.

AREA TRIMMA

COUNTRY CANADA

COAL QUALITY LOG

238

Tk-Telkwa 88(3)A

BOREHOLE TW-82R-212 (4)
CLIENT Crown Nest Resources Ltd.
AREA TELKWA
COUNTRY CANADA
DATE LOGGED
DEPTH SCALE 20 FT
4 OF 4 LOGS

SEAM THICKNESS LOG

BOREHOLE DATA	REFER TO LITHOLOGY LOG
OPERATION DATA	REFER TO LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA	
COAL COMBINATION SONDE	

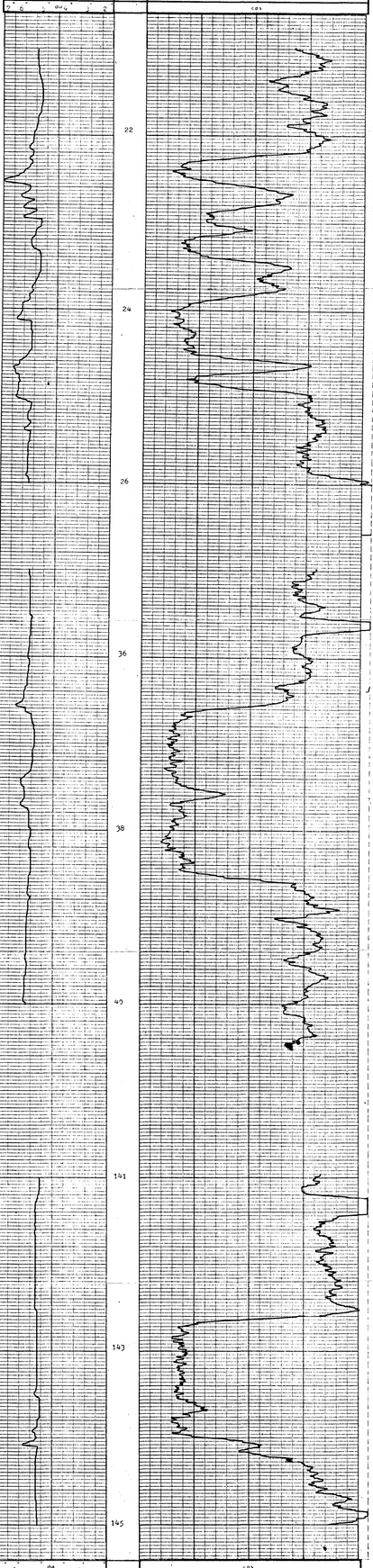
LOG	TAPING			SIDEWALL POSITION		
				PANEL		
	LOG	DATE	DEPTH	LOG	DATE	DEPTH
CALIPER	1	1/2/87	8	1	1/2/87	8
3 FT DENSITY	2	1/2/87	8	1	1/2/87	8
SOURCE SONDE AND CALIBRATION						
REFER TO LITHOLOGY LOG						

SEAM THICKNESS LOG INTERVALS				
FROM	145	140	226	
TO	1	1	35	21
INTERVAL	4	3	2	
FROM				
TO				
INTERVAL				
REMARKS				

SONDE TYPE
COAL COMBINATION SONDE

LOG SUITE
CALIPER
B.R. DENSITY

B P B SEAM THICKNESS LOG



CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY

BOREHOLE TW-82R-212
CLIENT Crown Nest Resources Ltd
AREA TELKWA
COUNTRY CANADA

SEAM THICKNESS LOG

MT 88003 R

COAL LITHOLOGY LOG

BPB

BOREHOLE	TK-82D-213
CLIENT	Crows Nest Resources Ltd
AREA	TELKWA
COUNTRY	CANADA
DATE LOGGED	
DEPTH SCALE	100:1
	1 OF 4 LOGS

TK-Telkwa 82(3)A

ESS

SONDE TYPE	LOG SUITE
COAL COMBINATION SONDE	GAMMA RAY, L.S. DENSITY, CALIPER

BOREHOLE DATA

PERMANENT DATUM	GROUND LEVEL	
ELEVATION OF P.D.		
MEASUREMENTS FROM	BPB GL	DRILLER GL
DEPTH REACHED	167m	167m
CASING SHOE		
BIT SIZES	1 NQ TO TD	2 TO
	3 TO	4 TO
CASING SIZES	1 TO	2 TO

FLUID DATA

NATURE	WATER SUPER GEL-X
SG	N/A
LEVEL	00m
VISCOSITY	N/A
Rm at meas temp	N/A
BHT	N/A

OPERATION DATA

FIRST READING	167
LAST READING	00
INTERVAL LOGGED	167
UNIT-TRUCK No	216
ENGINEER	MacKenzie/KING
WITNESS	

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

LOG	SONDE	SOURCE	CALIBRATOR	LOG TAPED	RECORD SPEED	DIRECT or REPLAY	SPEED	TC SECS	NORM	CAL COEFF	FROM	TO	INTERVAL	SEAM LOG RUN
CCS	168b	5852												
GAMMA RAY			463API	Y	9m/M	D	9m/M	1	---	1.76	167	00	167	
L.S. DENSITY			2860SDU	Ym	9m/M	D	9m/M	.3	7.22	----	167	00	167	
CALIPER	SIDEWALL POSITION		-------	Y	9m/M	D	9m/M	-------	-------	----	167	00	167	

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

FROM	21	INTERVAL TOTAL
TO	13	
INTERVAL	8	

ADDITIONAL SONDES RUN

SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG
204	N-N	100:1	------

REFER TO ADDITIONAL HEADINGS

REMARKS

BPB COAL LITHOLOGY LOG

CALIBRATION DATA

JIG No 242 VALUE 463 @ 2 DIAM
JIG MARK SHOWN AT ABOVE VALUE -

JIG CAL DATE 15-02-82 JIG VALUE 2860 SDU @ g/cm³ 7 ins 237 cps
JIG No 0040 SPAN 6000 NORM SDU/CPS 7.22 2 ins 842 cps

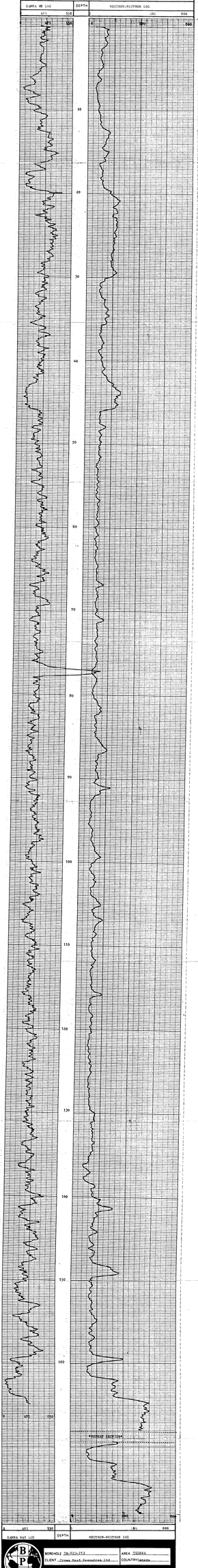
GAMMA RAY	DEPTH	BULK DENSITY g/cm³	CALIPER INCHES

HOLE SIZE CORRECTION DATA

OB	LOOSE OVERBURDEN
COAL	COAL
SHALEY/COAL	SHALEY COAL
CARB/SH	CARBONACEOUS SHALE
COALY/SH	COALY SHALE
SH	SHALE
MDST	MUDSTONE
SLST	SILTSTONE
SS1	SANDSTONE (FINE)
SS2	SANDSTONE (MEDIUM)
SS3	SANDSTONE (COARSE)
SS4	SANDSTONE (CONG)
CONG	CONGLOMERATE
IRST	IRONSTONE
VOLC	IGNEOUS

NEUTRON-NEUTRON & GAMMA RAY LOG

BOREHOLE ZN-E20-213
CLIENT Cross Boot Resources Ltd.
AREA TEXKA
COUNTRY Canada
DATE LOGGED 12-Feb-93
RUN NO. 1
DEPTH DRILLER 1500
DEPTH LOGGER 1500
BTM LOG INTERVAL 1500
TOP LOG INTERVAL 0
CASING DRILLER 0
CASING LOGGER 0
BIT SIZE 7 7/8
TYPE FLUID Fresh Water
DENSITY 1.0
VISCOSITY 50
PH 7.0
FLUID LOSS 0
SOURCE OF SAMPLE Flowline
RM @ MEAS. TEMP. 0.0 @ 0 °C
RMF @ MEAS. TEMP. 0.0 @ 0 °C
RMC @ MEAS. TEMP. 0.0 @ 0 °C
RM @ BHT 0.0 @ 0 °C
TIME SINCE CIRC. 0 hrs
MAX. REC. TEMP. 0 °C
EQUIPMENT LOCATION Edmonton
RECORDED BY Kelly
WITNESSED BY Cross Boot Resources Ltd.



BPB

BOREHOLE ZN-E20-213
CLIENT Cross Boot Resources Ltd.
AREA TEXKA
COUNTRY Canada

Tk-Telkwa 82(3)A

BPB

BOREHOLE TW-82D-213 (3)
CLIENT Crows Nest Resources Ltd.

AREA TELKWA
COUNTRY CANADA
DATE LOGGED

DEPTH SCALE 20:1

1 OF 1 LOGS

COAL QUALITY LOG

SONDE TYPE
COMBINATION SONDE

LOG SUITE
GAMMA RAY
L.S. DENSITY

BOREHOLE DATA — REFER TO LITHOLOGY LOG
OPERATION DATA — REFER TO LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA
COAL COMBINATION SONDE — SIDEWALL POSITION

LOG	TAPING	PANEL			
GAMMA RAY	1865	3605	SPECIAL	3605 NORM	3605
L.S DENSITY	V	2m/M	d	2.5/M	2	---	1.25
	H	2m/M	R	2.5/M	1	2.25	---

SOURCE SONDE AND CALIBRATION
REFER TO LITHOLOGY LOG

COAL QUALITY LOG INTERVALS

	FROM	TO	INTERVAL
	21	13	8

	FROM	TO	INTERVAL

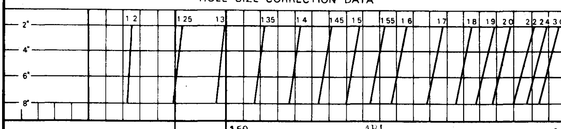
INTERVAL VAL. TOTAL

REMARKS

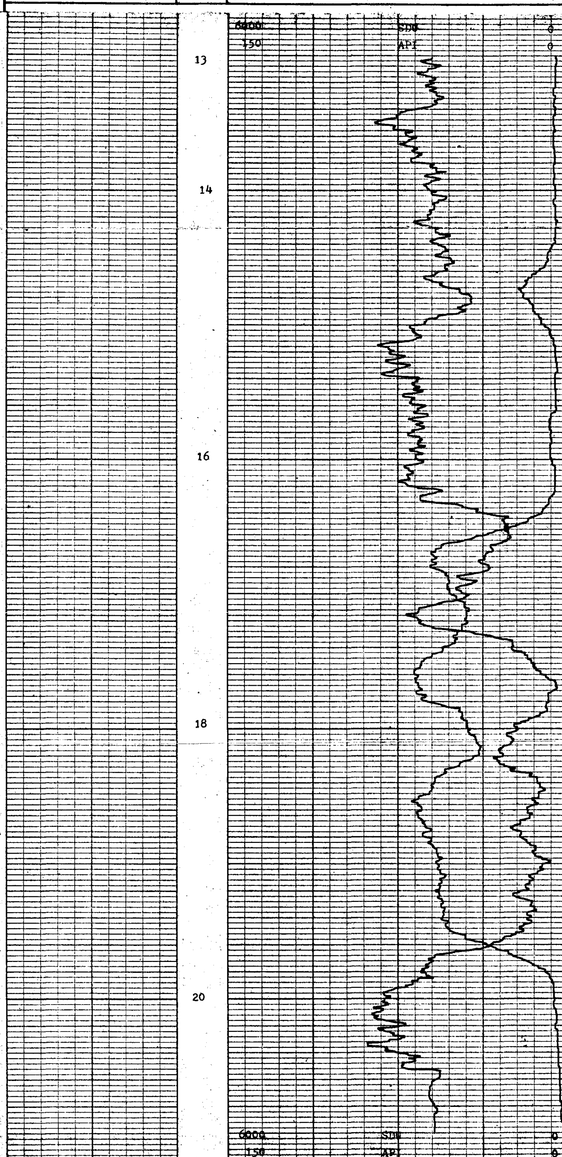
BPB COAL QUALITY LOG

DEPTH | GAMMA RAY
COAL BULK DENSITY g/cm³

HOLE SIZE CORRECTION DATA



150 API 0
6000 s d u 0



6000 s d u 0
150 API 0
COAL BULK DENSITY g/cm³
DEPTH | GAMMA RAY

BPB

BOREHOLE TW-82D-213 | AREA TELKWA
CLIENT Crows Nest Resources Ltd// | COUNTRY CANADA

COAL QUALITY LOG

TK-Telkwa 83(3)A

BOREHOLE TW-82D-213 (4)

CLIENT Crows Nest Resources Ltd.

AREA TELKWA

COUNTRY CANADA

DATE LOGGED

DEPTH SCALE 20:1

OF 4 LOGS

SEAM THICKNESS LOG

BOREHOLE DATA — REFER TO LITHOLOGY LOG

OPERATION DATA — REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

SIDEWALL POSITION

LOG	TAPING		PANEL		CAL COEFF
	LOG TAPED	RECORD SPEED	DIRECT / REPLAY	SPEED	TC SECS	NORM	
CALIPER	Y	2m/M	R	2m/M	.3	----	--
BR DENSITY	Y	2m/M	R	2m/M	.3	5.32	====

SOURCE SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: CALIPER B.R.DENSITY

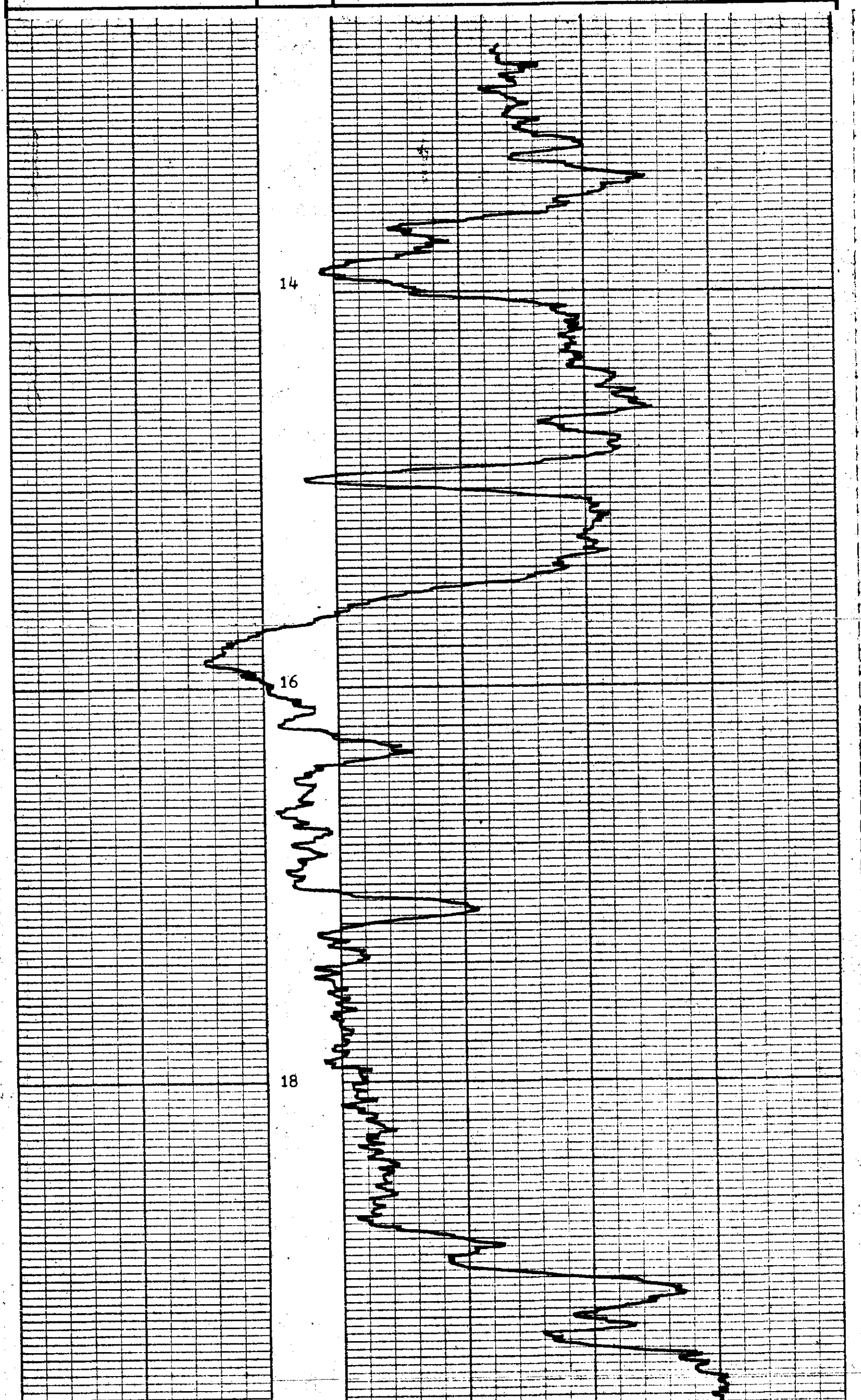
SEAM THICKNESS LOG INTERVALS

	FROM	TO	INTERVAL
	21	13	8
INTERVAL			
FROM			TOTAL
TO			
INTERVAL			=

REMARKS LOGGED THROUGH RODS. CALIPER NOT REPLAYED.

B P B SEAM THICKNESS LOG

CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
" " " " " " dia		17000 cpsSBRDU 11000



CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
" " " " " " dia		17000 cpsSBRDU 11000

BOREHOLE TW-82D-213

CLIENT CROWS Nest Resources Ltd

AREA TELKWA

COUNTRY CANADA

SEAM THICKNESS LOG

MY 88002 R

TK-Tetkwa 84 (3)A

Directional survey

TW-82D-214

LOG DEPTH	0090.00	
TRUE DEPTH	0088.62	
TILT	10.86	DG
BEARING	25.84	DG
NORTHING	+012.71	
EASTING	+007.41	

LOG DEPTH	0080.00	
TRUE DEPTH	0078.80	
TILT	10.22	DG
BEARING	26.56	DG
NORTHING	+011.02	
EASTING	+006.59	

LOG DEPTH	0070.00	
TRUE DEPTH	0068.96	
TILT	9.42	DG
BEARING	26.72	DG
NORTHING	+009.43	
EASTING	+005.79	

LOG DEPTH	0060.00	
TRUE DEPTH	0059.09	
TILT	10.75	DG
BEARING	30.06	DG
NORTHING	+007.97	
EASTING	+005.06	

LOG DEPTH	0050.00	
TRUE DEPTH	0049.27	
TILT	10.84	DG
BEARING	34.95	DG
NORTHING	+006.35	
EASTING	+004.12	

LOG DEPTH	0040.00	
TRUE DEPTH	0039.45	
TILT	9.72	DG
BEARING	36.25	DG
NORTHING	+004.81	
EASTING	+003.04	

LOG DEPTH	0030.00	
TRUE DEPTH	0029.59	
TILT	10.67	DG
BEARING	35.66	DG
NORTHING	+003.45	
EASTING	+002.04	

LOG DEPTH	0020.00	
TRUE DEPTH	0019.76	
TILT	12.55	DG
BEARING	26.44	DG
NORTHING	+001.94	
EASTING	+000.96	

LOG DEPTH	0010.00	
TRUE DEPTH	0010.00	
TILT	13.36	DG
BEARING	18.49	DG
NORTHING	+000.00	
EASTING	+000.00	

S14

TK-Telkwa 82(3)A

COAL LITHOLOGY LOG

BOREHOLE	TK 82D-214 (1)
CLIENT	Crow's Nest Resources Ltd
AREA	TELKWA
COUNTRY	Canada
DATE LOGGED	
DEPTH SCALE	100:1
	1 of 4 LOGS

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: GAMMA RAY, L S DENSITY, CALIPER

BOREHOLE DATA

	BPB	DRILLER
PERMANENT DATUM	GROUND LEVEL	
ELEVATION OF P D		
MEASUREMENTS FROM	GL	GL
DEPTH REACHED	292m	292m
CASING SHOE		
BIT SIZES	1 NQ TO TD	2 TO
CASING SIZES	1 TO; 3 TO	2 TO; 4 TO

FLUID DATA

NATURE	WATER-SUPER GELEX
S G	N/A
LEVEL	00
VISCOSITY	N/A
Rm at meas temp	N/A
B H T	N/A

OPERATION DATA

FIRST READING	289
LAST READING	00
INTERVAL LOGGED	289
UNIT-TRUCK No	216
ENGINEER	MacKenzie/King
WITNESS	

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

LOG	EQUIPMENT: SONDE	EQUIPMENT: SOURCE	EQUIPMENT: CALIBRATOR	TAPING: LOG TAPED	TAPING: RECORD SPEED	TAPING: DIRECT or REPLAY	PANEL: SPEED	PANEL: TC SECS	PANEL: NORM	CAL COEFF	DEPTHS: FROM	DEPTHS: TO	DEPTHS: INTERVAL	SEAM LOG RUN
CCS	168B	5852												
GAMMA RAY			463API	Y	9m/M	D	9m/M	1	---	1.76	289	00	289	
L S DENSITY			2860SDU	Y	9m/M	D	9m/M	.3	7.22	---	289	00	289	
CALIPER	SIDEWALL POSITION			Y	9m/M	D	9m/M	---	---	---	289	00	289	

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

FROM		INTERVAL TOTAL
TO		
INTERVAL		

ADDITIONAL SONDES RUN

SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG
204	N-N	100:1	------
210	VERT	------	------

REFER TO ADDITIONAL HEADINGS

REMARKS

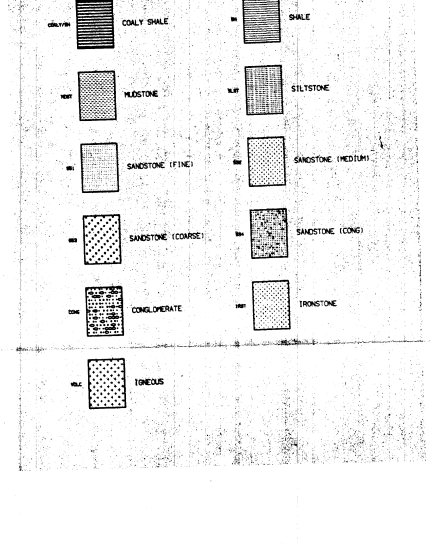
Poor hole conditions, and a bridge at 96m precluded further runs in the hole. Subsequently, all density logs are through the rods. Hole was also making large volume of gas at time of logging.

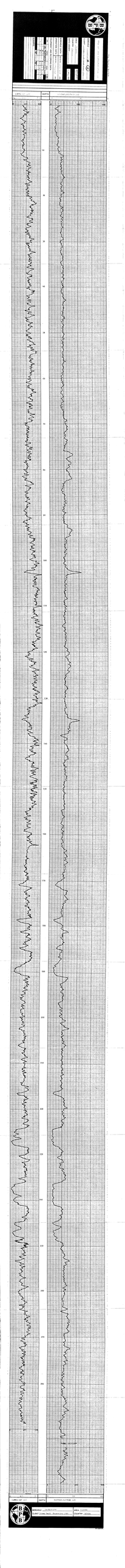
BPB COAL LITHOLOGY LOG

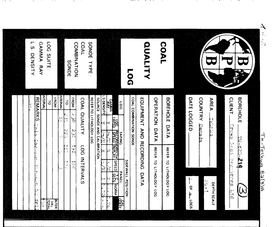
CALIBRATION DATA

JIG No 242	VALUE 463 @ 2 DIAM	JIG CAL DATE 15-02-82	JIG VALUE 2860 SDU @ g/cm³	7 ins 737 cps
JIG MARK SHOWN AT ABOVE VALUE -		JIG No 0040 SPAN 6000	NORM SDU CPS 7.22	2 ins 442 cps

GAMMA RAY	DEPTH	BULK DENSITY g/cm³	CALIPER INCHES
0 API 150		1000 SDU	0





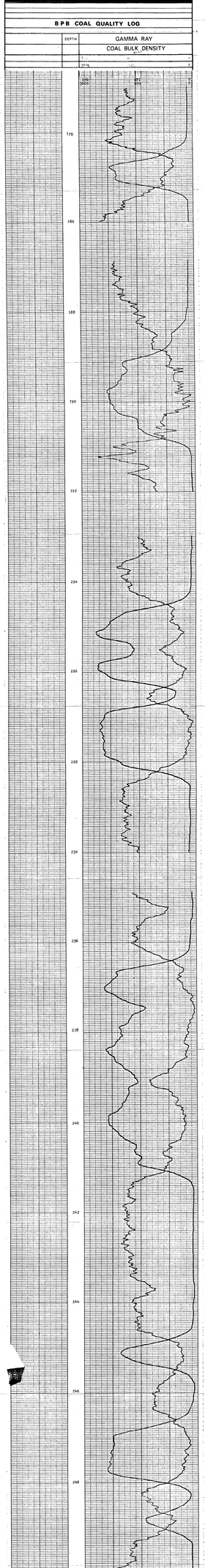


B P B COAL QUALITY LOG

DEPTH

GAMMA RAY

COAL BULK DENSITY



COAL BULK DENSITY

GAMMA RAY

B P B

BOREHOLE 76-30-235

CLIENT Denison Mines (Canada) Ltd.

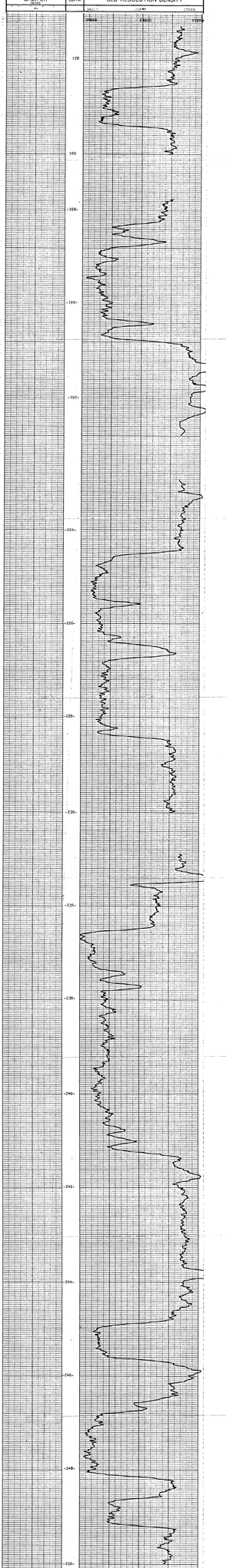
AREA Wollaston

COUNTRY Canada

COAL QUALITY LOG

SEAM THICKNESS LOG

BOREHOLE	74
CLIENT	
AREA	
COUNTRY	
DATE LOGGED	
BOREHOLE DATA	
OPERATION DATA	
EQUIPMENT AND RECORDING DATA	
SEAM THICKNESS LOG INTERVALS	
SEAM THICKNESS LOG INTERVALS	
COMMENTS	



BOREHOLE	74
CLIENT	
AREA	
COUNTRY	
DATE LOGGED	
BOREHOLE DATA	
OPERATION DATA	
EQUIPMENT AND RECORDING DATA	
SEAM THICKNESS LOG INTERVALS	
COMMENTS	
CALIPER	
DEPTH	
BED RESOLUTION DENSITY	

BOREHOLE 74-30-234

CLIENT Cabot Hills Resources Ltd.

AREA CALIPER

COUNTRY CANADA

SEAM THICKNESS LOG

TK-Telkwa 82(3)A

B DIRECTIONAL SURVEY

W-82R-208

OG DEPTH	0310.00
RUE DEPTH	0303.77
ILT	14.39 DG
EARING	6.15 DG
ORTHING	+057.90
ASTING	+005.43
OG DEPTH	0300.00
RUE DEPTH	0294.08
ILT	12.51 DG
EARING	1.54 DG
ORTHING	+055.43
ASTING	+005.17
OG DEPTH	0290.00
RUE DEPTH	0284.32
ILT	9.41 DG
EARING	4.27 DG
ORTHING	+053.26
ASTING	+005.11
OG DEPTH	0280.00
RUE DEPTH	0274.45
ILT	9.40 DG
EARING	4.26 DG
ORTHING	+051.63
ASTING	+004.99
OG DEPTH	0270.00
RUE DEPTH	0264.58
ILT	10.89 DG
EARING	.34 DG
ORTHING	+050.00
ASTING	+004.87
OG DEPTH	0260.00
RUE DEPTH	0254.76
ILT	11.81 DG
EARING	1.38 DG
ORTHING	+048.11
ASTING	+004.85
OG DEPTH	0250.00
RUE DEPTH	0244.97
ILT	12.76 DG
EARING	2.27 DG
ORTHING	+046.06
ASTING	+004.80
OG DEPTH	0240.00
RUE DEPTH	0235.22
ILT	12.40 DG
EARING	2.94 DG
ORTHING	+043.86
ASTING	+004.72
OG DEPTH	0230.00
RUE DEPTH	0225.45
ILT	12.75 DG
EARING	4.34 DG
ORTHING	+041.71
ASTING	+004.61
OG DEPTH	0220.00
RUE DEPTH	0215.70
ILT	13.46 DG
EARING	5.18 DG
ORTHING	+039.51
ASTING	+004.44

LOG DEPTH	0210.00
TRUE DEPTH	0205.98
TILT	13.38 DG
BEARING	4.90 DG
NORTHING	+037.19
EASTING	+004.23
LOG DEPTH	0200.00
TRUE DEPTH	0196.25
TILT	12.41 DG
BEARING	3.26 DG
NORTHING	+034.88
EASTING	+004.03
LOG DEPTH	0190.00
TRUE DEPTH	0186.48
TILT	12.51 DG
BEARING	2.93 DG
NORTHING	+032.74
EASTING	+003.91
LOG DEPTH	0180.00
TRUE DEPTH	0176.72
TILT	13.33 DG
BEARING	4.05 DG
NORTHING	+030.57
EASTING	+003.80
LOG DEPTH	0170.00
TRUE DEPTH	0166.99
TILT	11.71 DG
BEARING	3.96 DG
NORTHING	+028.27
EASTING	+003.63
LOG DEPTH	0160.00
TRUE DEPTH	0157.20
TILT	8.40 DG
BEARING	12.68 DG
NORTHING	+026.25
EASTING	+003.49
LOG DEPTH	0150.00
TRUE DEPTH	0147.31
TILT	10.14 DG
BEARING	12.95 DG
NORTHING	+024.82
EASTING	+003.17
LOG DEPTH	0140.00
TRUE DEPTH	0137.47
TILT	13.07 DG
BEARING	3.65 DG
NORTHING	+023.10
EASTING	+002.78
LOG DEPTH	0130.00
TRUE DEPTH	0127.73
TILT	10.91 DG
BEARING	4.86 DG
NORTHING	+020.85
EASTING	+002.63
LOG DEPTH	0120.00
TRUE DEPTH	0117.91
TILT	11.46 DG
BEARING	4.91 DG
NORTHING	+018.96
EASTING	+002.50
LOG DEPTH	0110.00
TRUE DEPTH	0108.11
TILT	13.27 DG
BEARING	3.83 DG
NORTHING	+016.98
EASTING	+002.33

LOG DEPTH	0100.00
TRUE DEPTH	0098.38
TILT	13.68 DG
BEARING	5.13 DG
NORTHING	+014.69
EASTING	+002.18
LOG DEPTH	0090.00
TRUE DEPTH	0088.66
TILT	13.93 DG
BEARING	6.32 DG
NORTHING	+012.33
EASTING	+001.96
LOG DEPTH	0080.00
TRUE DEPTH	0078.95
TILT	11.88 DG
BEARING	4.94 DG
NORTHING	+009.94
EASTING	+001.70
LOG DEPTH	0070.00
TRUE DEPTH	0069.16
TILT	12.09 DG
BEARING	4.83 DG
NORTHING	+007.88
EASTING	+001.52
LOG DEPTH	0060.00
TRUE DEPTH	0059.38
TILT	13.61 DG
BEARING	5.18 DG
NORTHING	+005.80
EASTING	+001.34
LOG DEPTH	0050.00
TRUE DEPTH	0049.66
TILT	11.37 DG
BEARING	16.00 DG
NORTHING	+003.45
EASTING	+001.13
LOG DEPTH	0040.00
TRUE DEPTH	0039.86
TILT	9.60 DG
BEARING	20.80 DG
NORTHING	+001.56
EASTING	+000.59
LOG DEPTH	0030.00
TRUE DEPTH	0030.00
TILT	9.71 DG
BEARING	14.43 DG
NORTHING	+000.00
EASTING	+000.00

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COAL LITHOLOGY LOG

BHP MINERALS

Borehole No. 238
Grid Ref. 2552 Rig Type
Elevation
Date Started
Date Completed
Logged By
Scale 1:200

EQUIPMENT AND RECORDING DATA

TOOL	SERIAL NO.	CALIBRATION DATE	RUN NO.	TIME CONST.	SPEED	DEPTH	REMARKS
GAMMA	1081	4/5/91	1	0.5	6.1	0-[illegible]	
CALIPER	1081	4/5/91	1	0.5	6.1	0-[illegible]	
DENSITY	1081	4/5/91	1	0.5	6.1	0-[illegible]	
NEUTRON	1081	4/5/91	1	0.5	6.1	0-[illegible]	

TOOL	SERIAL NO.	CALIBRATION DATE	RUN NO.	TIME CONST.	SPEED	DEPTH	REMARKS

CASING 1	
CASING 2	
CASING 3	

BOREHOLE FLUID	
FLUID LEVEL	

ADDITIONAL SONDES R.N.

SONDE	OD	SERIAL NO.	RUN NO.	REMARKS
GR	N.A.	1081		Open hole logs unsatisfactory as hole is
CAL	N.A.	1081		

SPS COAL LITHOLOGY LOG

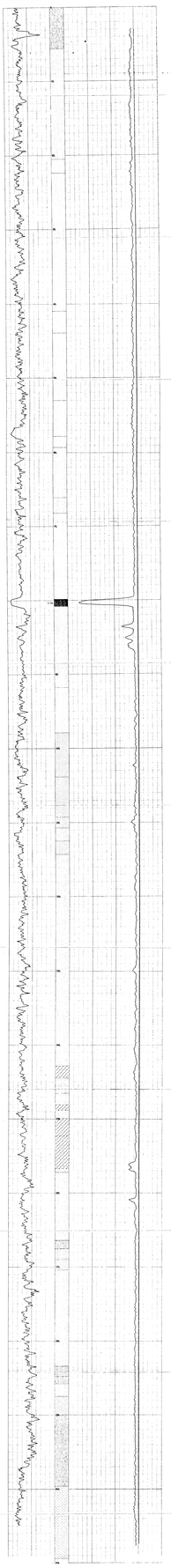
CALIBRATION DATA

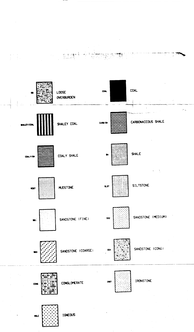
API GAM. value @ 2 mins	
API GAM. SONDE AT HIGH VALUE	

API GR. SONDE value [illegible]	
API GR. SONDE value [illegible]	

GAMMA RAY — API — CALIPER

BULK DENSITY — GM/CC — CALIPER





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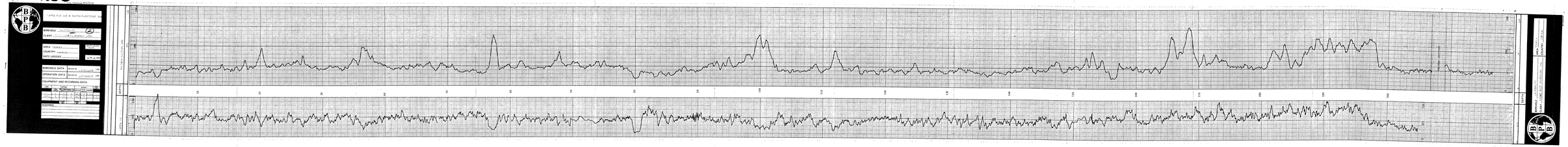

BPB
CLIENT
AREA
COUNTRY
DATE LOGGED
BOREHOLE DATA
OPERATION DATA
EQUIPMENT AND RECORDING DATA
DEPTH

238

TK Telkwa 82(3)A

BPB

BOREHOLE TW-825-215 (3)
CLIENT Crows Nest Resources Ltd.

AREA TELKWA
COUNTRY CANADA
DATE LOGGED

DEPTH SCALE 20:1

3 OF 4 LOGS

COAL QUALITY LOG

BOREHOLE DATA	REFER TO LITHOLOGY LOG
OPERATION DATA	REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

SIDEWALL POSITION

LOG	TAPING			PANEL			CAL COEFF.
	LOG TAPED	RECORD SPEED	DIRECT OR REPLAY	SPEED	T.C. SECS.	NORM	
GAMMA RAY	1	2m/M	R	2m/M	2	---	1.0
L.S. DENSITY	Y	2m/M	R	2m/M	1	2.22	----

SOURCE SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: GAMMA RAY L.S. DENSITY

COAL QUALITY LOG INTERVALS

FROM	90	
TO	78	
INTERVAL	12	
FROM		INTERVAL TOTAL
TO		
INTERVAL		

REMARKS Hole logged through the rod

B P B COAL QUALITY LOG

DEPTH

GAMMA RAY API

COAL BULK DENSITY g/cm³

HOLE SIZE CORRECTION DATA

2" 4" 6" 8"

78 80 82

COAL BULK DENSITY g/cm³

GAMMA RAY

DEPTH

BOREHOLE TW-825-215
CLIENT Crows Nest Resources Ltd.
AREA TELKWA
COUNTRY CANADA

COAL QUALITY LOG

MY 88002 R

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SEAM THICKNESS LOG

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: CALIPER B.R. DENSITY

BOREHOLE TW-82D-215 (4)

CLIENT Crows Nest Resources Ltd.

AREA TELKWA

COUNTRY CANADA

DATE LOGGED

DEPTH SCALE 20:1

4 OF 4 LOGS

BOREHOLE DATA — REFER TO LITHOLOGY LOG

OPERATION DATA — REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

SIDEWALL POSITION

LOG	TAPING: LOG TAPED	TAPING: RECORD SPEED	TAPING: DIRECT or REPLAY	PANEL: SPEED	PANEL: TC SECS	PANEL: NORM	CAL COEFF
CALIPER	Y	2m/M	R	2m/M	.3	----	---
B R DENSITY	Y	2m/M	R	2m/M	.3	5.32	---

SOURCE SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG INTERVALS

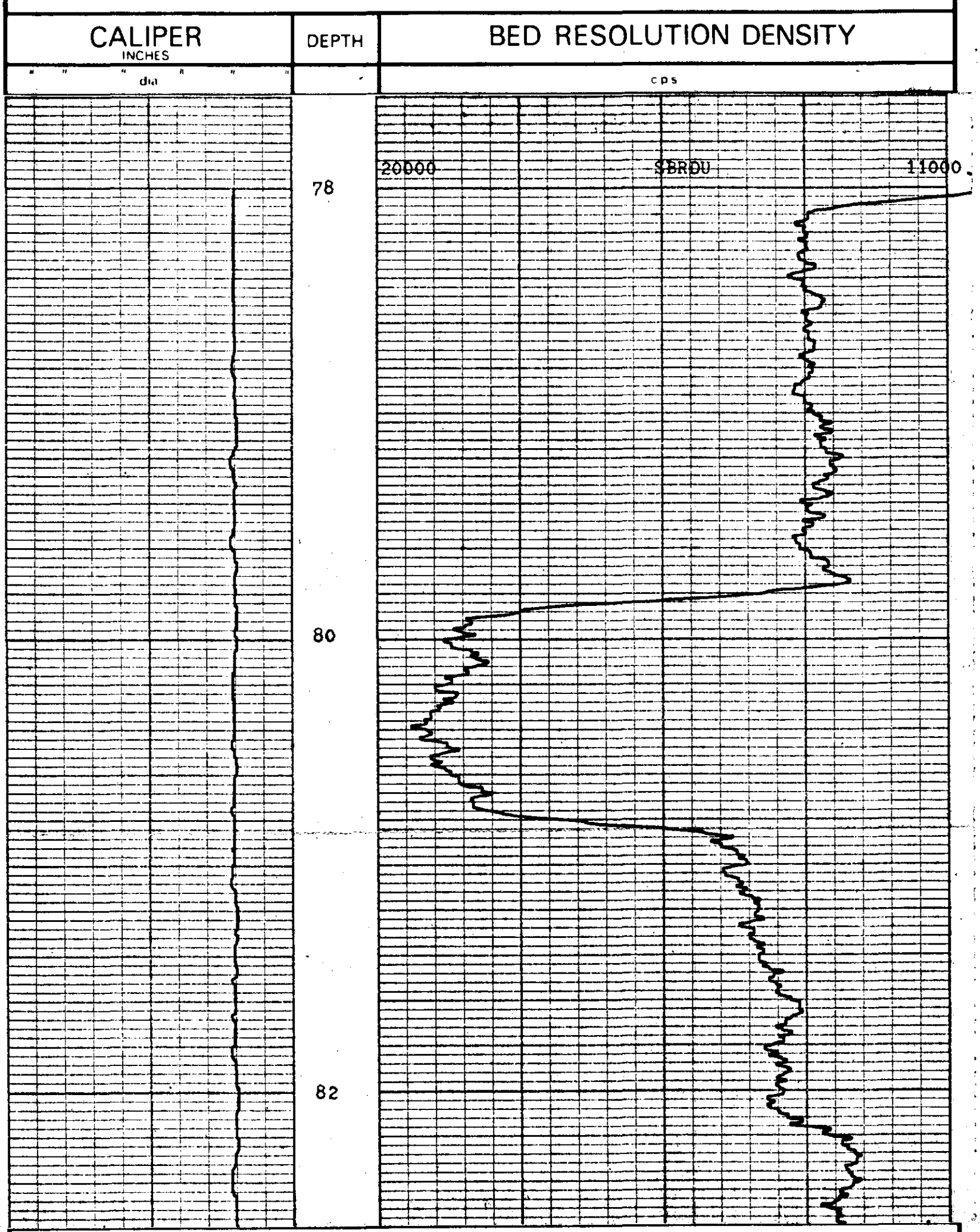
FROM	90
TO	78
INTERVAL	
FROM	
TO	
INTERVAL	

INTERVAL

TOTAL

REMARKS Hole logged through the drill rods, caliper not replayed.

B P B SEAM THICKNESS LOG



CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
dia		cps

BOREHOLE TW-82D-215

CLIENT Crows Nest Resources Ltd.

AREA TELKWA

COUNTRY Canada

SEAM THICKNESS LOG

MY 88002 R

TW 216

TK-Telkwa 82(3)A

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DIRECTIONAL SURVEY

TW-82D-216

LOG DEPTH	0130.00	
TRUE DEPTH	0126.87	
TILT	21.96	DG
BEARING	32.17	DG
NORTHING	+023.06	
EASTING	+009.97	
LOG DEPTH	0120.00	
TRUE DEPTH	0117.60	
TILT	9.19	DG
BEARING	23.32	DG
NORTHING	+019.89	
EASTING	+007.97	
LOG DEPTH	0110.00	
TRUE DEPTH	0107.73	
TILT	11.90	DG
BEARING	21.77	DG
NORTHING	+018.42	
EASTING	+007.34	
LOG DEPTH	0100.00	
TRUE DEPTH	0097.95	
TILT	11.99	DG
BEARING	35.00	DG
NORTHING	+016.51	
EASTING	+006.58	
LOG DEPTH	0090.00	
TRUE DEPTH	0088.17	
TILT	12.35	DG
BEARING	33.18	DG
NORTHING	+014.81	
EASTING	+005.38	
LOG DEPTH	0080.00	
TRUE DEPTH	0078.40	
TILT	13.67	DG
BEARING	26.09	DG
NORTHING	+013.02	
EASTING	+004.21	
LOG DEPTH	0070.00	
TRUE DEPTH	0068.68	
TILT	14.34	DG
BEARING	19.03	DG
NORTHING	+010.89	
EASTING	+003.17	
LOG DEPTH	0060.00	
TRUE DEPTH	0058.99	
TILT	13.85	DG
BEARING	14.13	DG
NORTHING	+008.55	
EASTING	+002.37	
LOG DEPTH	0050.00	
TRUE DEPTH	0049.28	
TILT	13.42	DG
BEARING	12.69	DG
NORTHING	+006.23	
EASTING	+001.78	
LOG DEPTH	0040.00	
TRUE DEPTH	0039.55	
TILT	13.68	DG
BEARING	14.57	DG
NORTHING	+003.96	
EASTING	+001.27	
LOG DEPTH	0030.00	
TRUE DEPTH	0029.83	
TILT	10.44	DG
BEARING	22.04	DG
NORTHING	+001.67	
EASTING	+000.68	
LOG DEPTH	0020.00	
TRUE DEPTH	0020.00	
TILT	6.97	DG
BEARING	28.18	DG
NORTHING	+000.00	
EASTING	+000.00	

BPB

COAL LITHOLOGY LOG

BOREHOLE GEOPHYSICAL LOGS

LOG SUITE

BOREHOLE No. 88-BD-161-D

PROJECT: CONSOL Bell Mountain Tract

OPERATOR: CONSOL Energy Inc.

GEOLOGIST: D. Bird

DRILLER: T. Jones

DATE: 7-7-88

DRILLING METHOD: Rotary

DRILLING FLUID: Air

CASING RECORD: 8" @ 30'

HOLE DATA: SIZE 6 3/4" FROM 0 TO 1,200'

ELEVATION: KB 2,264' DF GL 2,254'

LOGGING DATA: DRILLER 1,200' LOGGER 1,200' LOG BOTTOM 1,200' LOG TOP 0'

LOGGING UNIT: 1

LOGGING ENGINEER: D. Bird

WITNESSED BY: D. Bird

REMARKS: Hole dry

EQUIPMENT AND RECORDING DATA

COAL STRATIGRAPHIC ZONES

LOG	EQUIPMENT		SETTING			PANEL			CPS	DEPTHS	
	SONDE	SOURCE	SERIAL NO.	STRENGTH	UNITS	SETTING	UNITS	SONDE		Start	To Surface
DCD	SDDL	661672	T	34/8	S	34/8	S	1.69	133	80	133
Micro		866008	T	34/8	S	34/8	S	1.70	133	80	133
ALPHA	NEUTRON		T	34/8	S	34/8	S	1.70	133	80	133

COAL STRATIGRAPHIC ZONES (AS INTERVALS FROM TO DRAWN ON)

			INTERVAL TOTAL
TO	44	55	10
INTERVAL	11	10	

ADDITIONAL SONDES RUN

SONDE	SN	LOGGED TO SURFACE
DDS	N-8	100-1
616	YEXT	
	PE	100-1

NEWS TO ADDITIONAL ACCOMP.

REMARKS

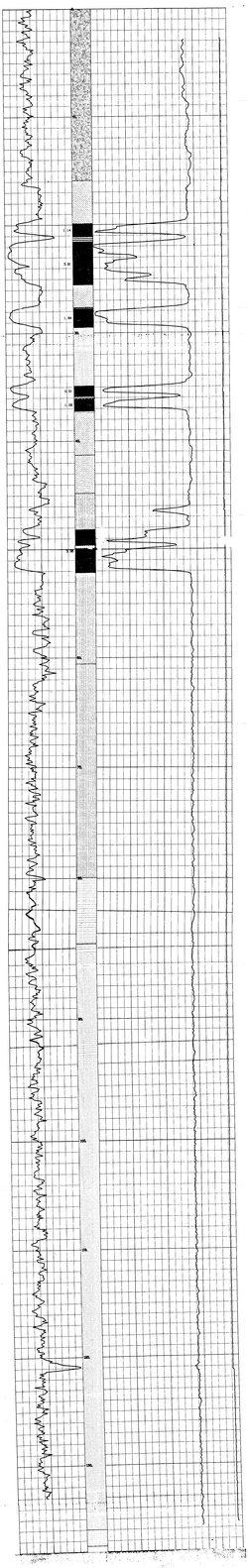
BPB COAL LITHOLOGY LOG

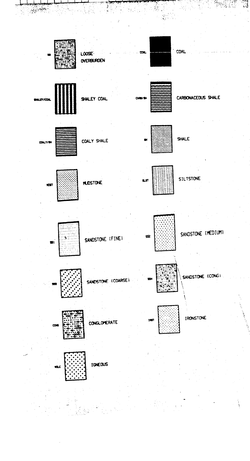
CALIBRATION DATA

API No. 294	TRACE 5.29 V Shale	API 1/2 1775	2 API 1/2 2864 TRACE 5.2 V Shale
API No. 1775	TRACE 5.29 V Shale	API 1/2 2864	2 API 1/2 2864 TRACE 5.2 V Shale
API No. 1775	TRACE 5.29 V Shale	API 1/2 2864	2 API 1/2 2864 TRACE 5.2 V Shale
API No. 1775	TRACE 5.29 V Shale	API 1/2 2864	2 API 1/2 2864 TRACE 5.2 V Shale

GAMMA RAY — GAPI — BULK DENSITY — CALIPER

HOLE SIZE CORRECTION DATA





LOOSE OVERBURDEN

COAL

SHALEY COAL

CARBONACEOUS SHALE

COALY SHALE

SHALE

LIMESTONE

SILTSTONE

SANDSTONE (FINE)

SANDSTONE (MEDIUM)

SANDSTONE (COARSE)

SANDSTONE (CONG.)

CONGLOMERATE

IRONSTONE

GYPSUM

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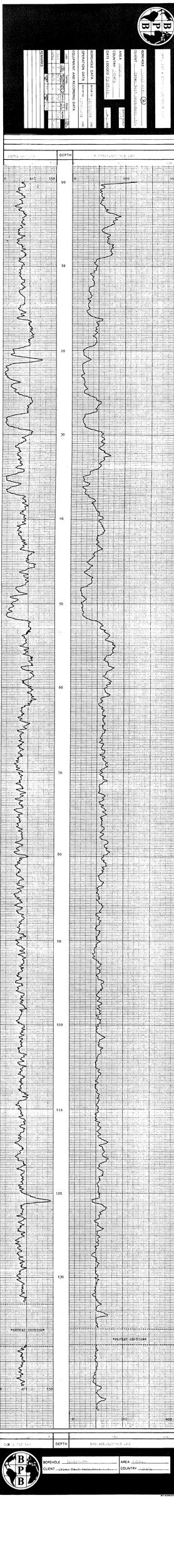

BOREHOLE
CLIENT
AREA
COUNTRY
DATE LOGGED
BOREHOLE DATA
OPERATION DATA
EQUIPMENT AND RECORDING DATA
REMARKS
DEPTH
0
150
100
200
300
400
10
20
30
40
50
60
70
80
90
100
110
120
130
REPEAT SECTION
REPEAT SECTION

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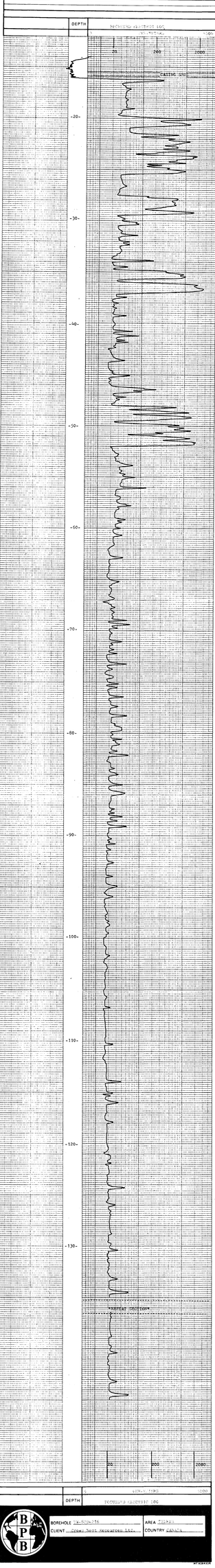
BOREHOLE [illegible]
CLIENT [illegible]
AREA [illegible]
COUNTRY [illegible]
DATE LOGGED [illegible]

BOREHOLE DATA
OPERATION DATA
EQUIPMENT AND RECORDING DATA

LOG	TAPING	PARAM.	LOG

REMARKS



	5	1000
DEPTH	TOGGLED ELECTRIC LOG	

BOREHOLE [illegible]
CLIENT Crown Vent Resources Ltd.
AREA [illegible]
COUNTRY CANADA

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The Petroleum Group

BPB

CONTRACTOR: Dowsett (B)
CLIENT: Trans Lent Resources Ltd.
AREA: [illegible]
COUNTRY: [illegible]
DATE LOGGED: 0.9.88.82
REPORT NO: 1
SCALE: 1:100

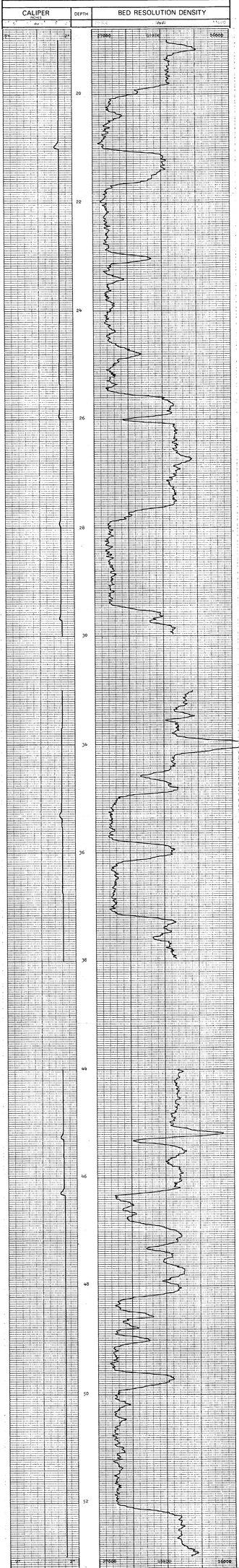
SEAM THICKNESS LOG

BOREHOLE DATA: RKB+10.11=100.00-100
OPERATION DATA: RKB+10.11=100.00-100
EQUIPMENT AND RECORDING DATA: COLLOMBIA SONDE
CONE COMBINATION SONDE

DATE	0.9.88.82		
RUN NO.	1		
DEPTH DRILLER	100.00		
DEPTH LOGGER	100.00		
CASING SHOE DEPTH	0.00		
DENSITY FLUID	1.00		
LEVEL FLUID	FULL		
RECORDED BY	[illegible]		
WITNESSED BY	[illegible]		

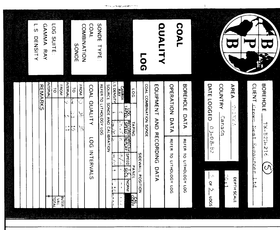
CONE TYPE	COLLOMBIA
CONE COMBINATION SONDE	
TEMP. THICKNESS	0.00
LOG INTERVALS	0.00 - 100.00
TIME CONSTANT	0.5
LOG SHIFT	0.00
CALIPER	0.00
LOG SCALE	1:100
BED RESOLUTION DENSITY	1:100
REMARKS	

B P B SEAM THICKNESS LOG



BOREHOLE	[illegible]-92-216	AREA	[illegible]
CLIENT	Trans Lent Resources Ltd	COUNTRY	[illegible]

SEAM THICKNESS LOG



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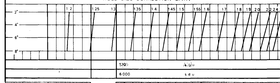
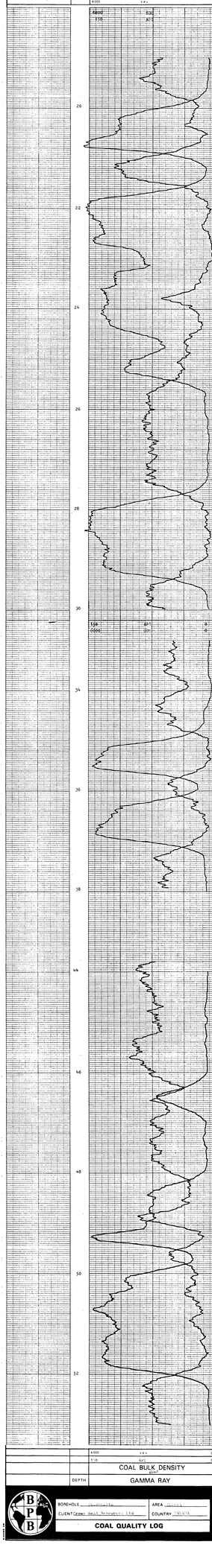
BPB COAL QUALITY LOG

DEPTH	GAMMA RAY
	COAL BULK DENSITY

HOLE SIZE CORRECTION DATA





	COAL BULK DENSITY
DEPTH	GAMMA RAY

BOREHOLE _____ AREA _____

CLIENT _____ COUNTRY _____

COAL QUALITY LOG

TW 217

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Tk-Telkwa 83(8)A

GAMMA RAY AND NEUTRON-NEUTRON LOG

BOREHOLE TW 82D 217 (1)

CLIENT CROWCREST RESOURCES LTD.

AREA TELKWA

COUNTRY CANADA

DATE LOGGED 09/03/82

OPEN SCALE 1:500

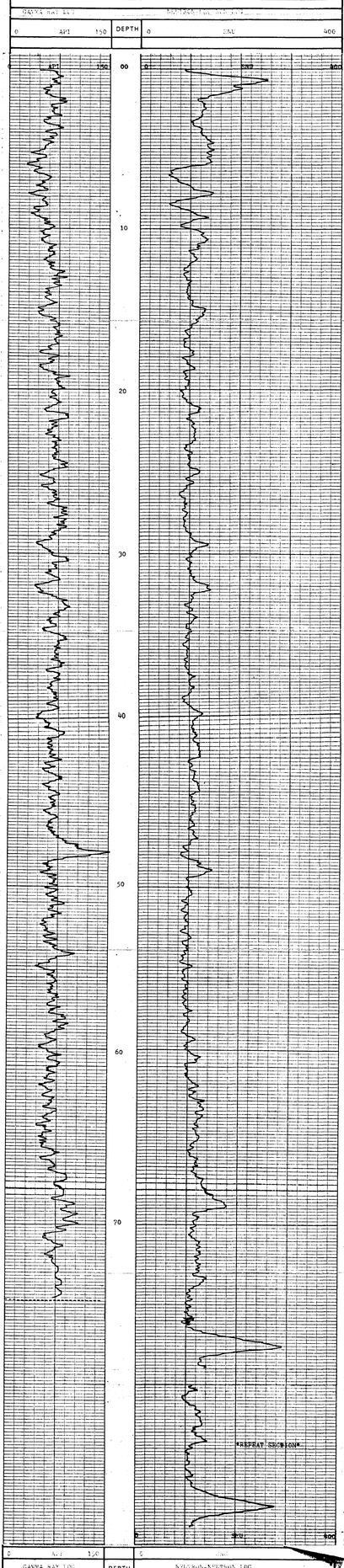
BOREHOLE DATA REFER TO LITHOLOGY LOG

OPERATION DATA REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

LOG	TAPING	RECORDING	SPEED	PANEL	CAL
GAMMA	1	5	1	1	1
N-N	1	5	1	1	7.90

REMARKS LOGGED THROUGH PIPE BLOCKS



BOREHOLE TW 82D 217

CLIENT CROWCREST RESOURCES LTD.

AREA TELKWA

COUNTRY CANADA

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COAL LITHOLOGY LOG

BPB

SPARE TYPE
COAL CONNECTION SONDE
LOG SUITE
GAMMA RAY
GAMMA RAY CALIPER

OPERATING DATA

RECORDED BY			
WITNESSED BY			
DRILLER			
LOGGING UNIT NO.			
DATE	26/9/88		
TIME	1700		
DEPTH DRILLER	76		
DEPTH LOGGER	76		
BOTTOM LOGGED INTERVAL	76		
TOP LOGGED INTERVAL	60		
CASING DRILLER	60		
CASING LOGGER	60		
BIT SIZE	8½"		
TYPE FLUID IN HOLE	WATER		
DENSITY			
VISCOSITY			
PH			
FLUID LOSS			
SOURCE OF SAMPLE			
RM @ MEAS. TEMP			
RMF @ MEAS. TEMP			
RMC @ MEAS. TEMP			
SOURCE OF RMF & RMC			
RM @ BHT			
TIME SINCE CIRC.			
MAX. REC. TEMP.			
EQUIP. LOCATION			
RECORDED BY			
WITNESSED BY			

REMARKS

RUN NO. | BIT | FROM | TO | CASING | WEIGHT | FLUID LEVEL

EQUIPMENT AND RECORDING DATA

COAL CONNECTION SONDE

LOG	EQUIPMENT SONDE	SOURCE	SUBMARINE	LOG NAME	TAPING UNIT NO.	TAPING UNIT SPEED	PANEL NO.	PANEL SPEED	COL. CODE	DEPTHS FROM	DEPTHS TO	SEAM LOG RUN
CCG		3686 9532										
GAMMA RAY				43691	Y	9M/M	D	9	1	--.69	76	60	76
DENSITY				8560DE	Y	9	D	9	.5	7.14--	76	60	76
CALIPER	ADDITIONAL STATION				Tm	9	D	9	.5	----.---	76	60	76

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

	INTERVAL TOTAL
FROM	
TO	
INTERVAL	

ADDITIONAL SONDES RUN

SONDE	LOG	GENERAL / DETAIL INCLUDING KEL/TAC

REFER TO ADDITIONAL REMARKS

REMARKS

Hole logged through rods

BPB COAL LITHOLOGY LOG

CALIBRATION DATA

AC No. 3686 VOLTS @ 2 Chan	AC Cal. DATE 15-02-88 Hi=2550 Volts @ 40cps		P =830 us
AC MARK SHOWN AT ABOVE VALUE -	AC NO600 SPAN 6000 NORM P/F 7.10		P =960 us

GAMMA RAY API BULK DENSITY CALIPER

60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410 420 430 440 450 460 470 480 490 500 510 520 530 540 550 560 570 580 590 600 610 620 630 640 650 660 670 680 690 700 710 720 730 740 750 760 770 780 790 800 810 820 830 840 850 860 870 880 890 900 910 920 930 940 950 960 970 980 990 1000

KWL

60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410 420 430 440 450 460 470 480 490 500 510 520 530 540 550 560 570 580 590 600 610 620 630 640 650 660 670 680 690 700 710 720 730 740 750 760 770 780 790 800 810 820 830 840 850 860 870 880 890 900 910 920 930 940 950 960 970 980 990 1000

OB LOOSE OVERBURDEN

COAL COAL

SHALEY COAL SHALEY COAL

CARB SH CARBONACEOUS SHALE

COALY SH COALY SHALE

SH SHALE

MDST MUDSTONE

SLST SILTSTONE

SS1 SANDSTONE (FINE)

SS2 SANDSTONE (MEDIUM)

SS3 SANDSTONE (COARSE)

SS4 SANDSTONE (CONG)

CONG CONGLOMERATE

IRST IRONSTONE

VOLC IGNEOUS

BPB COAL LITHOLOGY LOG

COMPANY: BRITISH PETROLEUM (E&P) LTD.

WELL: 48/25-1

AREA: SOUTH MORAY FIRTH

OPERATOR: BP PETROLEUM DEVELOPMENT LTD.

LOCATION: 58° 39' 30.0" N 1° 43' 00.0" E

ELEVATION: KB 25m

DATUM: MSL

DATE RUN: 7-JUN-88

LOG SUITE: GAMMA RAY CALIPER

LOG RUN: ONE

DEPTH CONTROL: WIRELINE

DEPTH REFERENCE: KB

PERMANENT DATUM: MSL

ELEVATION: 0m

LOG MEASURED FROM: KB 25m ABOVE PERMANENT DATUM

DRILLING MEASURED FROM: KB

RUN	DATE	CASING DRILLER	CASING LOGGER	BIT SIZE	TYPE FLUID IN HOLE	DENSITY	VISCOSITY	PH	FLUID LOSS	SOURCE OF SAMPLE	RM @ MEAS TEMP	RMF @ MEAS TEMP	RMC @ MEAS TEMP	SOURCE RMF	SOURCE RMC	RM @ BHT	TIME SINCE CIRC	MAX REC TEMP	EQUIP LOCATION	RECORDED BY	WITNESSED BY
ONE	7-JUN-88	1603m	1610m	8.5"	SEAWATER	1.03	35	9.5	6.0	CIRC	0.16 @ 20°C	0.12 @ 20°C	0.20 @ 20°C	MEAS	MEAS	0.10 @ 60°C	5 HRS	60°C	ABERDEEN	J. SMITH	BP

BOREHOLE RECORD

BIT NO	FROM	TO	SIZE
1	0	1610m	8.5"

CASING RECORD

SIZE	WEIGHT	GRADE	FROM	TO
13 3/8"	68 LB/FT	K55	0	1603m

OPEN HOLE

SIZE	FROM	TO
8.5"	1603m	1610m

EQUIPMENT AND RECORDING DATA

COAL COMBINATION ZONES

USE	EQUIPMENT SONDE	EQUIPMENT SOURCE	EQUIPMENT DARKROOM	SERIAL NO	LOG LEVEL	RECORDING SPEED	PANEL NO	PANEL SPEED	GAIN	LOG SCALE	DEPTHS FROM	DEPTHS TO	DEPTHS SCALE	SCALE LOG RUN
GAMMA RAY	1403	1810												
BULK DENSITY		53672	Y	6	D	5	1	5.24	L.04	5"	55.00	1614		
CALIPER	NATURAL GAMMA	660030	Y	5	D	5	1	5.24	L.04	5"	55.00	1614		
		660030	Y	5	D	5	1	5.24	L.04	5"	55.00	1614		

COAL QUALITY/REAL THICKNESS LOG INTERVALS (Refer to remarks log)

FROM	TO	INTERVAL
99	66	66
71	59	54
6	5	12

TOTAL

ADDITIONAL SONDES RUN

SONDE	USE	SERIAL NO	DETAILS
ZDL	RHOB	1403	

NOTES TO ADDITIONAL HEADINGS

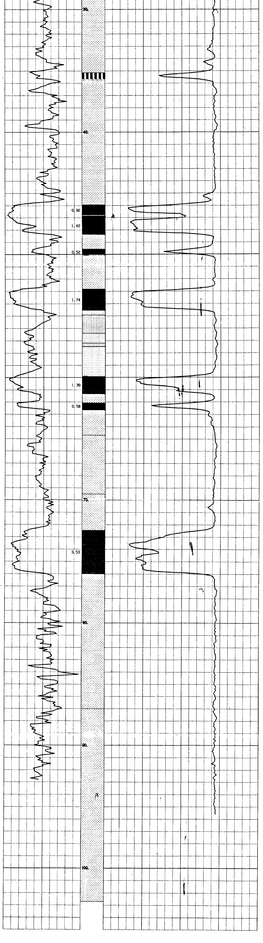
REMARKS

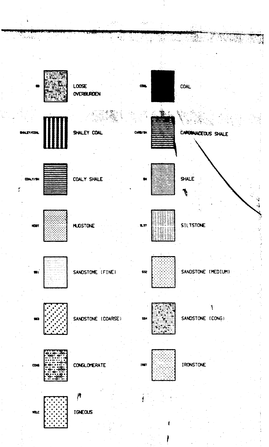
Hole logged through PQ drill rods.

CALIBRATION DATA

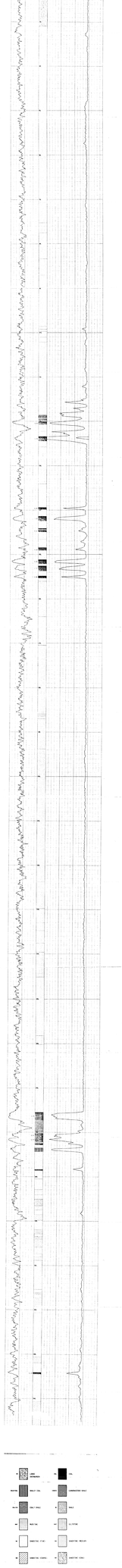
AT HL	252	VALUES @ 7 DAYS	AT CAL DATE	11-03-88	VALUE 2866 SPANS MAX 7 TO 339
AT MAIN BOOM AT ABOVE VALUE			AT 1600	SPAN 6000	NOM 2866 MIN 2.16 TO 680

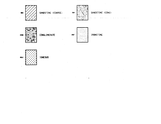
GAMMA RAY | DEPTH | BULK DENSITY | CALIPER

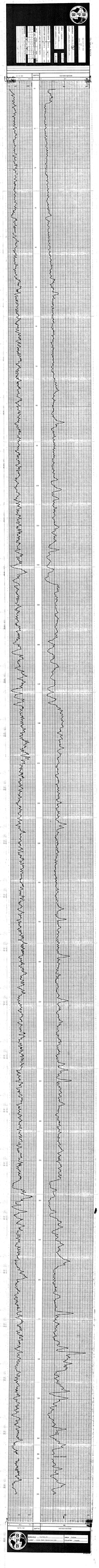




EQUIPMENT AND RECORDING DATA
CALIBRATION DATA
GAMMA RAY
BULK DENSITY




SAND
SANDSTONE
SHALE
SHALE
LIMESTONE
LIMESTONE
SHALY SAND
SHALY SAND
SANDY SHALE
SILTSTONE
CALCAREOUS SHALE
CALCAREOUS SHALE
CALCAREOUS SANDSTONE
COAL
GYPSUM
ANHYDRITE
CHERT



TW 220

TW-82D-220

LOG DEPTH	0320.00
TRUE DEPTH	0319.93
TILT	2.62 DG
BEARING	277.89 DG
NORTHING	+004.51
EASTING	-005.65

LOG DEPTH	0310.00
TRUE DEPTH	0309.94
TILT	2.75 DG
BEARING	314.61 DG
NORTHING	+004.45
EASTING	-005.20

LOG DEPTH	0300.00
TRUE DEPTH	0299.95
TILT	1.98 DG
BEARING	342.57 DG
NORTHING	+004.11
EASTING	-004.85

LOG DEPTH	0290.00
TRUE DEPTH	0289.96
TILT	1.77 DG
BEARING	334.65 DG
NORTHING	+003.78
EASTING	-004.75

LOG DEPTH	0280.00
TRUE DEPTH	0279.96
TILT	1.14 DG
BEARING	2.01 DG
NORTHING	+003.50
EASTING	-004.62

LOG DEPTH	0270.00
TRUE DEPTH	0269.96
TILT	1.07 DG
BEARING	2.57 DG
NORTHING	+003.30
EASTING	-004.62

LOG DEPTH	0260.00
TRUE DEPTH	0259.96
TILT	1.62 DG
BEARING	320.33 DG
NORTHING	+003.41
EASTING	-004.52

LOG DEPTH	0250.00
TRUE DEPTH	0249.96
TILT	1.56 DG
BEARING	324.07 DG
NORTHING	+002.90
EASTING	-004.45

LOG DEPTH	0240.00
TRUE DEPTH	0239.96
TILT	1.56 DG
BEARING	323.87 DG
NORTHING	+002.67
EASTING	-004.29

LOG DEPTH	0230.00
TRUE DEPTH	0229.96
TILT	1.30 DG
BEARING	326.82 DG
NORTHING	+002.46
EASTING	-004.14

LOG DEPTH	0220.00
TRUE DEPTH	0219.96
TILT	1.30 DG
BEARING	322.35 DG
NORTHING	+002.27
EASTING	-004.01

LOG DEPTH	0210.00
TRUE DEPTH	0209.96
TILT	1.28 DG
BEARING	298.87 DG
NORTHING	+002.09
EASTING	-003.87

LOG DEPTH	0200.00
TRUE DEPTH	0199.96
TILT	1.20 DG
BEARING	315.94 DG
NORTHING	+001.98
EASTING	-003.68

LOG DEPTH	0190.00
TRUE DEPTH	0189.96
TILT	1.34 DG
BEARING	305.54 DG
NORTHING	+001.87
EASTING	-003.53

LOG DEPTH	0180.00
TRUE DEPTH	0179.96
TILT	1.41 DG
BEARING	278.72 DG
NORTHING	+001.70
EASTING	-003.34

LOG DEPTH	0170.00
TRUE DEPTH	0169.96
TILT	1.48 DG
BEARING	292.38 DG
NORTHING	+001.66
EASTING	-003.09

LOG DEPTH	0160.00
TRUE DEPTH	0159.96
TILT	1.56 DG
BEARING	305.20 DG
NORTHING	+001.56
EASTING	-002.85

LOG DEPTH	0150.00
TRUE DEPTH	0149.96
TILT	1.56 DG
BEARING	312.15 DG
NORTHING	+001.40
EASTING	-002.63

LOG DEPTH	0140.00
TRUE DEPTH	0139.96
TILT	1.56 DG
BEARING	291.76 DG
NORTHING	+001.22
EASTING	-002.43

TK-Tekkun 82(3)A

TW-82D-220

LOG DEPTH	0130.00	
TRUE DEPTH	0129.96	
TILT	1.77	DG
BEARING	286.66	DG
NORTHING	+001.12	
EASTING	-002.18	

LOG DEPTH	0120.00	
TRUE DEPTH	0119.96	
TILT	1.85	DG
BEARING	291.24	DG
NORTHING	+001.03	
EASTING	-001.88	

LOG DEPTH	0110.00	
TRUE DEPTH	0109.97	
TILT	1.99	DG
BEARING	289.50	DG
NORTHING	+000.91	
EASTING	-001.58	

LOG DEPTH	0100.00	
TRUE DEPTH	0099.98	
TILT	2.19	DG
BEARING	298.00	DG
NORTHING	+000.80	
EASTING	-001.25	

LOG DEPTH	0090.00	
TRUE DEPTH	0089.99	
TILT	1.84	DG
BEARING	319.23	DG
NORTHING	+000.62	
EASTING	-000.91	

LOG DEPTH	0080.00	
TRUE DEPTH	0080.00	
TILT	1.34	DG
BEARING	338.76	DG
NORTHING	+000.37	
EASTING	-000.70	

LOG DEPTH	0070.00	
TRUE DEPTH	0070.00	
TILT	1.34	DG
BEARING	302.37	DG
NORTHING	+000.15	
EASTING	-000.62	

LOG DEPTH	0060.00	
TRUE DEPTH	0060.00	
TILT	1.50	DG
BEARING	258.27	DG
NORTHING	+000.03	
EASTING	-000.42	

LOG DEPTH	0050.00	
TRUE DEPTH	0050.00	
TILT	1.08	DG
BEARING	297.24	DG
NORTHING	+000.08	
EASTING	-000.16	

LOG DEPTH	0040.00	
TRUE DEPTH	0040.00	
TILT	.72	DG
BEARING	347.05	DG
NORTHING	+000.00	
EASTING	+000.00	

EQUIPMENT AND RECORDING DATA

RUN	DATE	DEPTH DRILLER	DEPTH LOGGER	BTM LOGGED INTERVAL	TOP LOGGED INTERVAL	CASING DRILLER	CASING LOGGER	BIT SIZE	TYPE FLUID IN HOLE	DENSITY	VISCOSITY	PH	FLUID LOSS
1	10-Jul-12	1,000	1,000	1,000	0	0	0	8.5	WBM	9.2	40	9	0
2	10-Jul-12	1,000	1,000	1,000	0	0	0	8.5	WBM	9.2	40	9	0
3	10-Jul-12	1,000	1,000	1,000	0	0	0	8.5	WBM	9.2	40	9	0

RUN	TOOL STRING (TOP TO BOTTOM)	VENDOR TOOL CODES
1	GR - CAL - DEN - CN - AC - DIS	
2	GR - CAL - DEN - CN - AC - DIS	
3	GR - CAL - DEN - CN - AC - DIS	

RUN	BOREHOLE RECORD NO.	REMARKS
1		TIME: 0700HR, 10th JULY 2012
2		RUN: ONCE AL ABOVE RIG: 44.2M DRILL
3		TD: 1000m

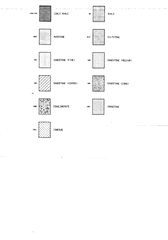
BPB COAL LITHOLOGY LOG

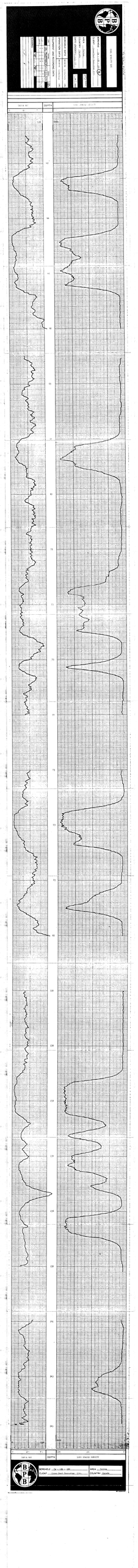
CALIBRATION DATA

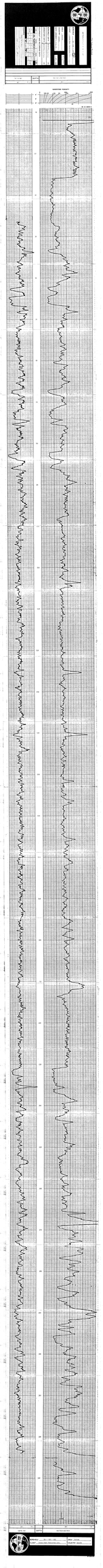
MUD WT. - MUD VISC. - MUD PH		CALIPER CALIBRATION: HOLE DIAM. = (1.1 x BIT) + 2	in
FLUID LOSS - MUD SALINITY		CALIPER CALIBRATION: HOLE DIAM. = (1.1 x BIT) + 2	cm
GAMMA RAY	API	BULK DENSITY	GRAIN DENSITY

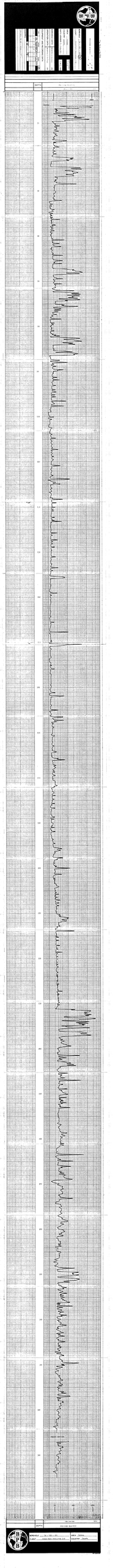
HOLE ENLARGEMENTS (cm)

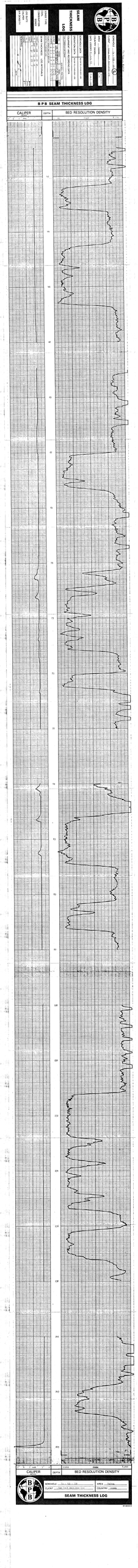
0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40










B P B
SEAM THICKNESS LOG
BOREHOLE
CLIENT
LOCATION
DRILLED
LOGGED
CASING
DRILLER
OPERATOR
REMARKS
DEPTH
Driller
Logger
Scale
Run No.
Date
Time
Recorded by
Witnessed by
Equipment No.
Location
Truck No.
Base No.
Mast No.
Sonde No.
Gamma No.
Caliper No.
Density No.
Source No.
Detector No.
Cable No.
Cable Length
Max. Temp.
Max. Pressure
Fluid Level
Fluid Type
Fluid Density
Fluid Resistivity
Fluid Temp.
Fluid Loss
Rig Time
Operating Time
Standby Time
Tool Type
Tool Length
Tool Weight
Tool Diameter
Centralizers
Sensor Offset
Max. Speed
Max. Recorded Temp.
Max. Recorded Pressure
Time Since Circ.
Time Since Log
Max. Hole Deviation
Bottom Hole Temp.
Equipment Serial No.
Top Log Interval
Bottom Log Interval
Log Measured From
Permanent Datum
Elevation
Above Perm. Datum
Depth Driller
Depth Logger
Bottom Log Interval
Top Log Interval
Casing Driller
Casing Logger
Bit Size
Type Fluid in Hole
Density
Viscosity
pH
Fluid Loss
Source of Sample
Rm @ Meas. Temp.
Rmf @ Meas. Temp.
Rmc @ Meas. Temp.
Source of Rmf & Rmc
Rm @ BHT
Time Circulation Stopped
Time Logger on Bottom
Max. Rec. Temp.
Equipment Location
Recorded By
Witnessed By
B P B
SEAM THICKNESS LOG
CALIPER
DEPTH
BED RESOLUTION DENSITY
BOREHOLE
CLIENT
AREA
COUNTY
SEAM THICKNESS LOG

TW-82D-221 TK-Telkwa 82(3)A

LOG DEPTH	0250.00	
TRUE DEPTH	0249.99	
TILT	1.84	DG
BEARING	184.94	DG
NORTHING	-004.11	
EASTING	-001.80	

LOG DEPTH	0240.00	
TRUE DEPTH	0240.00	
TILT	1.77	DG
BEARING	191.11	DG
NORTHING	-003.79	
EASTING	-001.77	

LOG DEPTH	0230.00	
TRUE DEPTH	0230.00	
TILT	1.55	DG
BEARING	200.67	DG
NORTHING	-003.49	
EASTING	-001.71	

LOG DEPTH	0220.00	
TRUE DEPTH	0220.00	
TILT	1.41	DG
BEARING	218.80	DG
NORTHING	-003.24	
EASTING	-001.61	

LOG DEPTH	0210.00	
TRUE DEPTH	0210.00	
TILT	1.55	DG
BEARING	221.02	DG
NORTHING	-003.04	
EASTING	-001.46	

LOG DEPTH	0200.00	
TRUE DEPTH	0200.00	
TILT	1.41	DG
BEARING	132.77	DG
NORTHING	-002.84	
EASTING	-001.28	

LOG DEPTH	0190.00	
TRUE DEPTH	0190.00	
TILT	1.34	DG
BEARING	180.70	DG
NORTHING	-002.60	
EASTING	-001.22	

LOG DEPTH	0180.00	
TRUE DEPTH	0180.00	
TILT	1.56	DG
BEARING	186.62	DG
NORTHING	-002.36	
EASTING	-001.22	

LOG DEPTH	0170.00	
TRUE DEPTH	0170.00	
TILT	1.42	DG
BEARING	188.26	DG
NORTHING	-002.09	
EASTING	-001.19	

LOG DEPTH	0160.00	
TRUE DEPTH	0160.00	
TILT	1.42	DG
BEARING	202.47	DG
NORTHING	-001.85	
EASTING	-001.15	

LOG DEPTH	0150.00	
TRUE DEPTH	0150.00	
TILT	1.42	DG
BEARING	212.43	DG
NORTHING	-001.62	
EASTING	-001.06	

LOG DEPTH	0140.00	
TRUE DEPTH	0140.00	
TILT	1.20	DG
BEARING	207.95	DG
NORTHING	-001.41	
EASTING	-000.93	

LOG DEPTH	0130.00	
TRUE DEPTH	0130.00	
TILT	1.27	DG
BEARING	208.94	DG
NORTHING	-001.22	
EASTING	-000.83	

LOG DEPTH	0120.00	
TRUE DEPTH	0120.00	
TILT	1.42	DG
BEARING	220.99	DG
NORTHING	-001.03	
EASTING	-000.72	

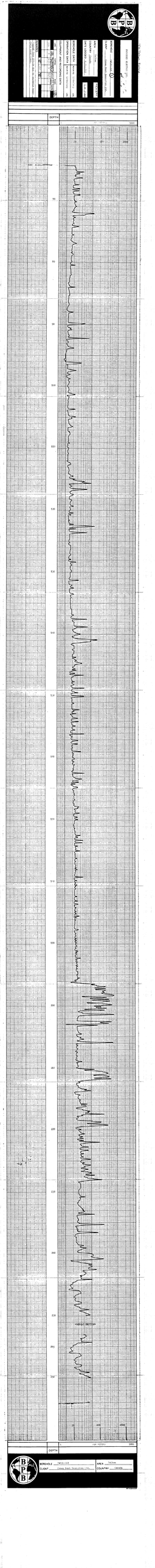
LOG DEPTH	0110.00	
TRUE DEPTH	0110.00	
TILT	1.14	DG
BEARING	200.60	DG
NORTHING	-000.84	
EASTING	-000.56	

LOG DEPTH	0100.00	
TRUE DEPTH	0100.00	
TILT	1.34	DG
BEARING	196.48	DG
NORTHING	-000.65	
EASTING	-000.49	

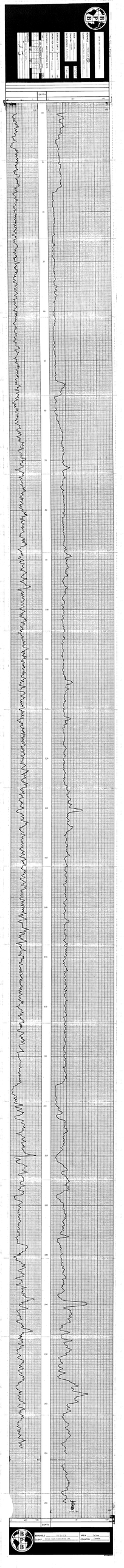
LOG DEPTH	0090.00	
TRUE DEPTH	0090.00	
TILT	1.70	DG
BEARING	224.58	DG
NORTHING	-000.43	
EASTING	-000.42	

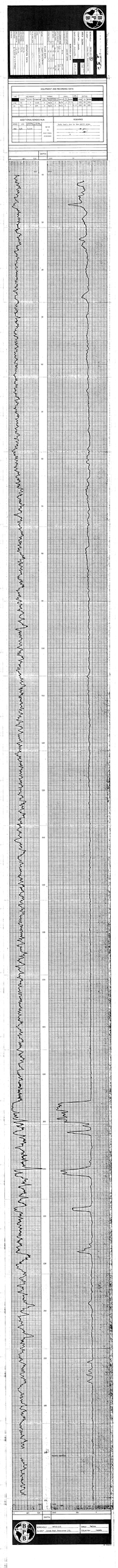
LOG DEPTH	0080.00	
TRUE DEPTH	0080.00	
TILT	1.77	DG
BEARING	224.45	DG
NORTHING	-000.22	
EASTING	-000.21	

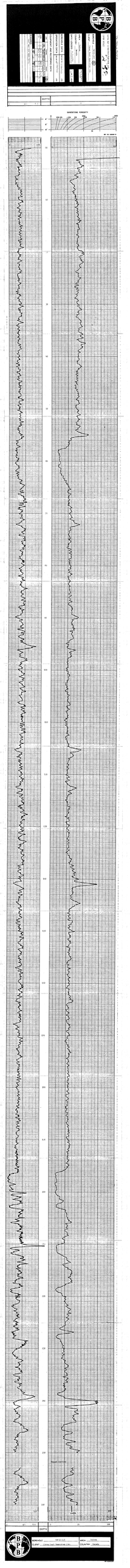
LOG DEPTH	0070.00	
TRUE DEPTH	0070.00	
TILT	1.98	DG
BEARING	221.77	DG
NORTHING	+000.00	
EASTING	+000.00	



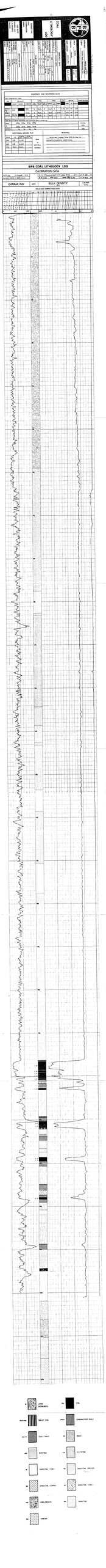
BP
PURPOSE OF THE LOG
WELL
WELLBORE
CLIENT
AREA
COUNTRY
DATE
RIG
DEPTH




EQUIPMENT AND RECORDING DATA
REMARKS
DEPTH



BPB
DEPTH
SANDSTONE POROSITY
DEPTH


COAL LITHOLOGY LOG
BPB COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
BULK DENSITY
NEED BAD CORRECTION DATA
COAL
LIMESTONE
SHALE
CLAYSTONE
SANDSTONE (FINE)
SANDSTONE (COARSE)
SANDSTONE (MEDIUM)
SANDSTONE (COBBLE)
SANDSTONE
CHERT

BOREHOLE 2-2-21 (G)
CLIENT Crown Seat Resources Ltd.
AREA Telkwa
COUNTRY Canada
DATE LOGGED 1/10/02
DEPTH SCALE 1:200
6 of 7 LOGS

SEAM THICKNESS LOG

SONDE TYPE
COAL COMBINATION SONDE

LOG SUITE
CALIPER
B.R. DENSITY

BOREHOLE DATA
RETER TO LITHOLOGY LOG

OPERATION DATA
RETER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

LOG	SONDE	SIDEWALL POSITION	PAD	SIDEWALL POSITION
CALIPER	1	2/3	2/3	2/3
B.R. DENSITY	1	2/3	2/3	2/3

SONDE SIDEWALL POSITION

SONDE	SIDEWALL POSITION	PAD	SIDEWALL POSITION
CALIPER	1	2/3	2/3
B.R. DENSITY	1	2/3	2/3

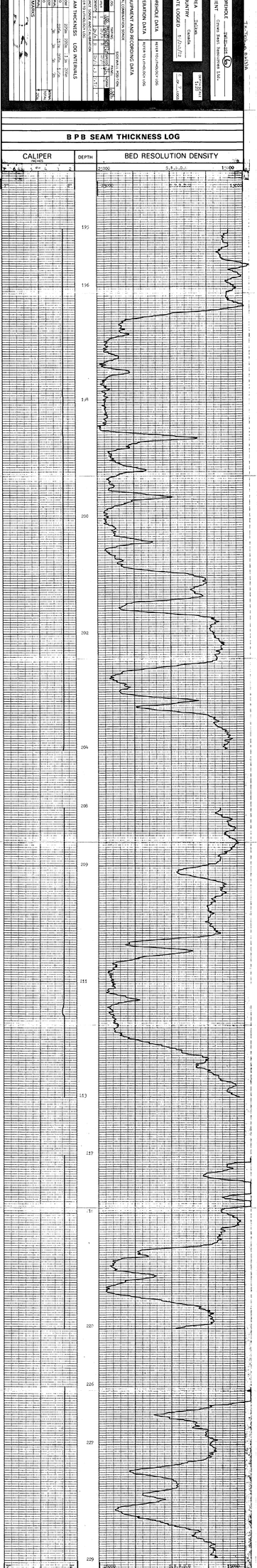
SONDE SIDEWALL POSITION

SONDE	SIDEWALL POSITION	PAD	SIDEWALL POSITION
CALIPER	1	2/3	2/3
B.R. DENSITY	1	2/3	2/3

SEAM THICKNESS LOG INTERVALS

FROM	229m	226m	1.5m	209m
TO	226m	217m	209m	1.5m
INTERVAL	3m	9m	5m	
TOTAL				
INTERVAL				

REMARKS



BOREHOLE 2-2-21
CLIENT Crown Seat Resources Ltd.
AREA Telkwa
COUNTRY Canada

SEAM THICKNESS LOG

TW 2-21

BPB

TOTAL FIELD MAGNETIC INTENSITY

BOREHOLE Crow Nest Resources Ltd. (1)

CLIENT Crow Nest Resources Ltd.

AREA Telkwa

COUNTRY Canada

DATE LOGGED 1/10/92

ENTIRE SCALE 1:200

OPERATOR DATA

RECORD	Littlewood
LOG	

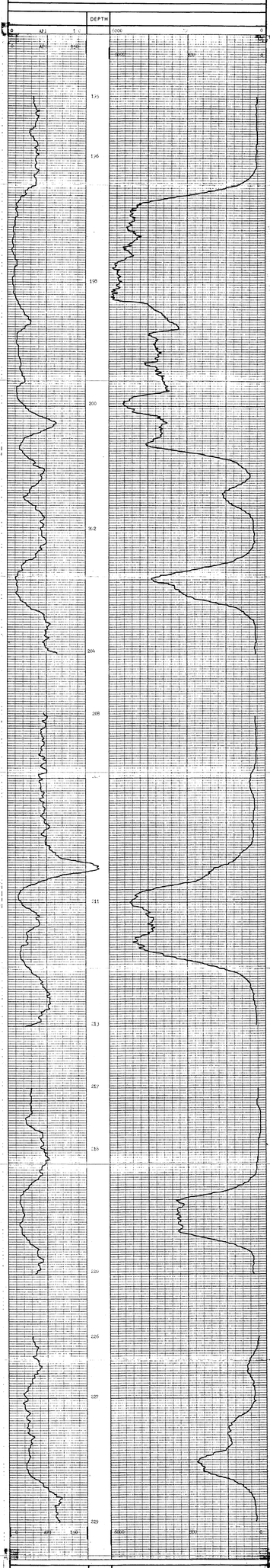
EQUIPMENT AND RECORDING DATA

LOG	FRAME	
1:200	1:200	
1:200	1:200	
1:200	1:200	
1:200	1:200	
1:200	1:200	
1:200	1:200	
1:200	1:200	
1:200	1:200	

1:200	1:200		
1:200	1:200		
1:200	1:200		
1:200	1:200		
1:200	1:200		
1:200	1:200		
1:200	1:200		
1:200	1:200		

REMARKS

200m	1:1 m. 1000s
200m	1:1 m. 1000s
200m	1:1 m. 1000s
200m	1:1 m. 1000s
200m	1:1 m. 1000s
200m	1:1 m. 1000s
200m	1:1 m. 1000s
200m	1:1 m. 1000s



BOREHOLE TW 2-21

CLIENT Crow Nest Resources Ltd.

AREA Telkwa

COUNTRY Canada

BPB

BOREHOLE Deadmoss No 6
CLIENT Coney Park Restorations Ltd.
AREA Skelton
COUNTRY Cumbria
DATE LOGGED 27/12/85

GRAMA RS 1000 BOREHOLE LOGGING UNIT
Ref 1/85

DRILLER	Hall		
RIG	Boyles 250		
DRILLING METHOD	Rotary		
CASING DIAMETER	6"		
CASING DEPTH	73.00		
WATER LEVEL	0.00		
DRILLING FLUID	Water		
RECORDED BY	D.Wright		
WITNESSED BY			

LOGGING DATE	27/12/85		
RUN No.	1		
DEPTH DRILLER	73.00		
DEPTH LOGGER	73.00		
BOTTOM LOGGED INTERVAL	73.00		
TOP LOGGED INTERVAL	0.00		
CASING DRILLER	6" @ 0.00		
CASING LOGGER	6" @ 0.00		
BIT SIZE	5.5/8"		
TYPE FLUID IN HOLE	Water		
DENSITY		VISCOSITY	
PH		FLUID LOSS	
SOURCE OF SAMPLE		RM @ MEAS. TEMP.	
RM @ BHT		MAX REC. TEMP.	
EQUIPMENT No.	0336	LOCATION	
RECORDED BY	D.Wright	WITNESSED BY	

OPERATION DATA

TIME SINCE CIRC.			
TIME ON BOTTOM			
MAX. REC. TEMP.			
EST. CEMENT TOP			
EQUIPMENT No.	0336	LOCATION	Skelton
RECORDED BY	D.Wright	WITNESSED BY	

REMARKS

Tool was run through rods. Hole was flowing water.

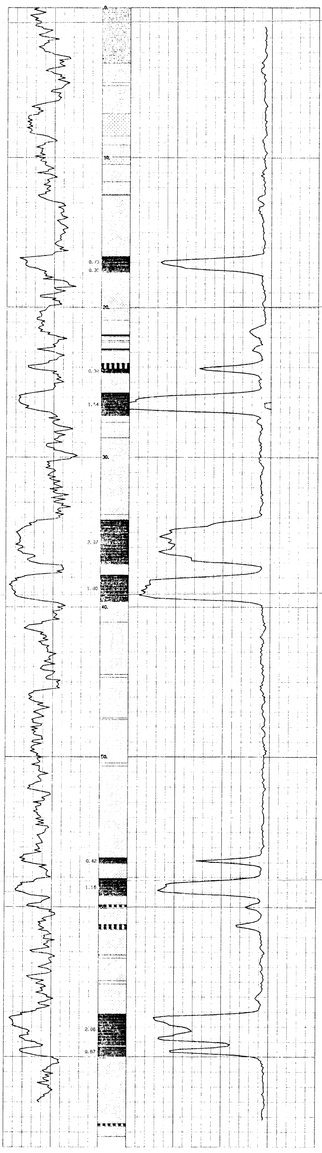
EQUIPMENT AND RECORDING DATA

LOG	EQUIPMENT: SONDE	EQUIPMENT: SOURCE	EQUIPMENT: CALIBRATION	TAPING: UNIT	TAPING: CORRECTION	TAPING: DEPTH REF.	PANEL: SAMPLES	PANEL: TIME CONST.	PANEL: NORM	CAL. LOG	DEPTHS: FROM	DEPTHS: TO	DEPTHS: EXTRA
	1½	5821	0336	T	0m/s	R	0m/s	1	0.89	*	73	00	73
	1½		371	T	0m/s	R	0m/s	1	1.61	*	73	00	73

ADDITIONAL SONDES RUN

SONDE	LOG	GENERAL SCALE	DETAIL SCALE
856	N/R	1:100	

REFER TO ADDITIONAL HEADINGS



LOOSE OVERBURDEN		COAL	COAL
SHALEY COAL		CARB-SH	CARBONACEOUS SHALE
COALY SHALE		SH	SHALE
MDST	MUDSTONE	SLST	SILTSTONE
SS1	SANDSTONE (FINE)	SS2	SANDSTONE (MEDIUM)
SS3	SANDSTONE (COARSE)	SS4	SANDSTONE (CONG)
CONG	CONGLOMERATE	IRST	IRONSTONE
VOLC	IGNEOUS		

BPB

JOB SITE LOC.

BOREHOLE TW82-006 222 (2)

CLIENT Crows Nest Resources Ltd.

AREA Telkwa

COUNTRY Canada

DATE LOGGED 17/07/82

1:250

1:1000

BOREHOLE DATA

PERMANENT DATUM Ground Level

ELEVATION OF P.D. 0 m

MEASUREMENTS MADE 0 m ABOVE P.D.

DRILLER

CASING SIZES 1 2 3

BIT SIZES 1 2 3

CASING FROM 0 0 0

TO 23 0 0

CASING WEIGHT 0 0 0

CASING GRADE 0 0 0

CASING JOINTS 0 0 0

FLUID DATA

NATURE Water

LEVEL 0 m

TYPE Unknown

VISCOSITY Unknown

RESISTIVITY Unknown

OPERATION DATA

HOLE READING 23 m

CASING READING 0 m

CASING SHOE READING 0 m

UNIT / TRUCK No. Unit 6855

ENGINEER Jack Fee & W.Lawrence

WITNESS

LOG	EQUIPMENT			TAPING			PANEL		CAL LENGTH	DEPTHS		
	SONDE	SOURCE	CALIBRATOR	LOG RATES	RECORDER/MECH SPEED	RETEST	SPEED	SCL NORM		FROM	TO	INTERVAL
	115		10.36	3	m/m		m/	.	'	23	00	23
			3.1	3	m/h	3	m/	1	'	1.1	00	23

EQUIPMENT AND RECORDING DATA

ADDITIONAL SONDES RUN

SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG
115	N/A	1:1.00	

REFER TO ADDITIONAL HEADINGS

REMARKS

Tool was run through rods. Hole was flowing water.

DEPTH

0 AP 120 | 3000 SDU 0

00 10 20 30 40 50 60 70 80

12 11 10 9 8 7 6

Anomalous readings

0 AP 120 | 3000 SDU 0

DEPTH

BPB

BOREHOLE TW82-006 222

CLIENT Crows Nest Resources Ltd.

AREA Telkwa

COUNTRY Canada

MF 82160 B

GAMMA RAY & NEUTRON/NEUTRON LOG.

BOREHOLE TW82-220 (3)

CLIENT Crown Nest Resources Ltd.

AREA Telkwa

COUNTRY Canada

DATE LOGGED 17/Jul/82

DEPTH SCALE 1:100

2 OF 4 LOGS

BOREHOLE DATA REFER TO G.R & LSD LOG

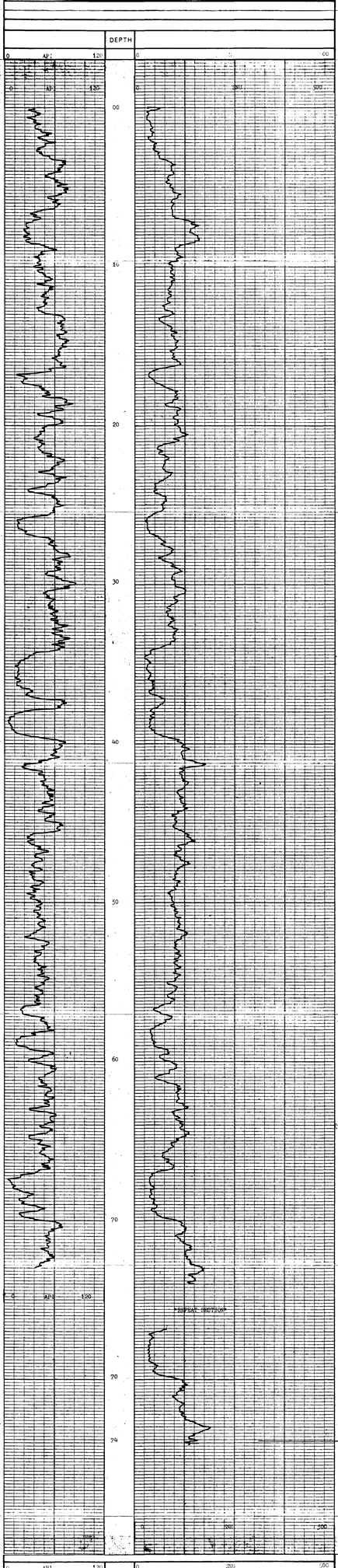
OPERATION DATA REFER TO G.R & LSD LOG

EQUIPMENT AND RECORDING DATA

LOG	TAPING LOG.	TAPING RECORD	SPEED	PANEL SCALE	CALIBRATION
G.R	Y	9m/m	D	1	1.33
GR	Y	9m/m	D	1	1.1

REMARKS

N/N tool was run in rods.



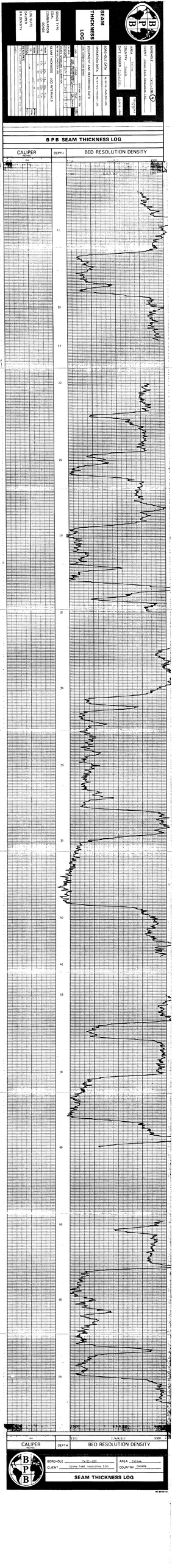
BOREHOLE TW82D-220

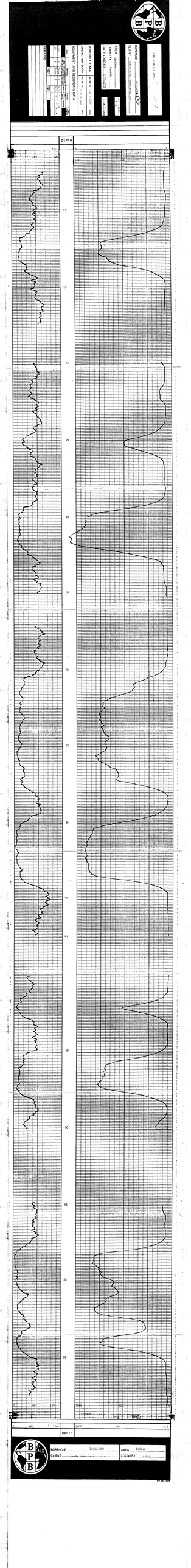
CLIENT Crows Nest Resources Ltd.

AREA Telkwa

COUNTRY Canada

MT A58455R


SEAM THICKNESS LOG
BOREHOLE
CLIENT
AREA
COUNTRY
DATE LOGGED
OPERATION DATA
EQUIPMENT AND RECORDING DATA
BORHOLE DATA
SEAM THICKNESS LOG INTERVALS
CALIPER
DEPTH
BED RESOLUTION DENSITY
SEAM THICKNESS LOG



BOREHOLE
CLIENT
AREA
COUNTRY
DATE LOGGED
BOREHOLE DATA
OPERATION DATA
EQUIPMENT AND RECORDING DATA
DEPTH
BOREHOLE
CLIENT
AREA
COUNTRY
DEPTH

Directional Survey

TK [illegible] E2(3)A

TW-32D-223

LOG DEPTH 0230.00
TRUE DEPTH 0229.73
TILT 2.12 DG
BEARING 264.10 DG
NORTHING -007.23
EASTING -005.66

LOG DEPTH 0220.00
TRUE DEPTH 0219.74
TILT 4.24 DG
BEARING 228.07 DG
NORTHING -007.20
EASTING -005.29

LOG DEPTH 0210.00
TRUE DEPTH 0209.77
TILT 4.24 DG
BEARING 225.16 DG
NORTHING -006.70
EASTING -004.74

LOG DEPTH 0200.00
TRUE DEPTH 0199.80
TILT 3.96 DG
BEARING 218.62 DG
NORTHING -006.18
EASTING -004.21

LOG DEPTH 0190.00
TRUE DEPTH 0189.82
TILT 3.39 DG
BEARING 203.36 DG
NORTHING -005.64
EASTING -003.78

LOG DEPTH 0180.00
TRUE DEPTH 0179.84
TILT 2.97 DG
BEARING 195.40 DG
NORTHING -005.10
EASTING -003.55

LOG DEPTH 0170.00
TRUE DEPTH 0169.85
TILT 1.63 DG
BEARING 250.19 DG
NORTHING -004.60
EASTING -003.41

LOG DEPTH 0160.00
TRUE DEPTH 0159.85
TILT 1.35 DG
BEARING 244.45 DG
NORTHING -004.50

LOG DEPTH 0150.00
TRUE DEPTH 0149.85
TILT 2.68 DG
BEARING 191.83 DG
NORTHING -004.40
EASTING -002.93

LOG DEPTH 0140.00
TRUE DEPTH 0139.86
TILT 2.82 DG
BEARING 194.32 DG
NORTHING -003.94
EASTING -002.83

LOG DEPTH 0130.00
TRUE DEPTH 0129.87
TILT 2.82 DG
BEARING 194.32 DG
NORTHING -003.46
EASTING -002.71

LOG DEPTH 0120.00
TRUE DEPTH 0119.88
TILT 2.54 DG
BEARING 187.20 DG
NORTHING -002.98
EASTING -002.59

LOG DEPTH 0110.00
TRUE DEPTH 0109.89
TILT 2.97 DG
BEARING 195.43 DG
NORTHING -002.54
EASTING -002.53

LOG DEPTH 0100.00
TRUE DEPTH 0099.90
TILT 2.55 DG
BEARING 193.24 DG
NORTHING -002.04
EASTING -002.39

LOG DEPTH 0090.00
TRUE DEPTH 0089.91
TILT 1.70 DG
BEARING 177.92 DG
NORTHING -001.61
EASTING -002.29

LOG DEPTH 0080.00
TRUE DEPTH 0079.91
TILT 3.05 DG
BEARING 211.85 DG
NORTHING -001.31
EASTING -002.30

LOG DEPTH 0070.00
TRUE DEPTH 0069.92
TILT 2.05 DG
BEARING 278.79 DG
NORTHING -000.86
EASTING -002.02

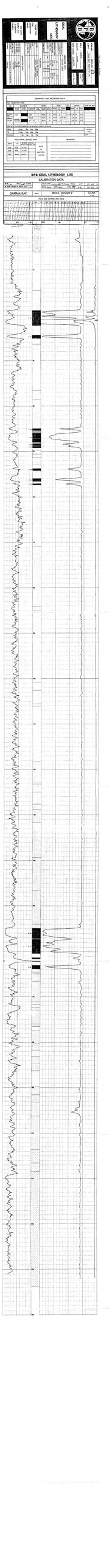
LOG DEPTH 0060.00
TRUE DEPTH 0059.93
TILT 1.98 DG
BEARING 277.60 DG
NORTHING -000.91
EASTING -001.67

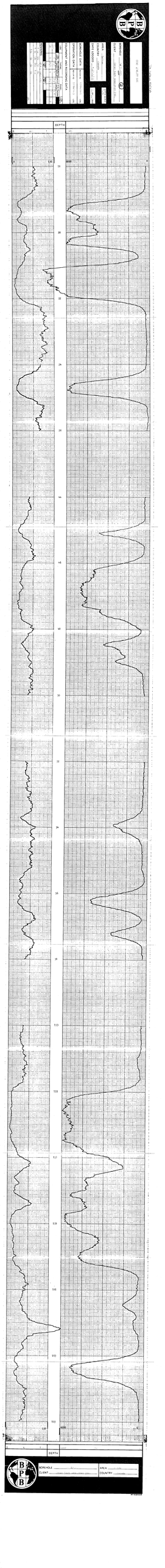
LOG DEPTH 0050.00
TRUE DEPTH 0049.94
TILT 3.39 DG
BEARING 254.56 DG
NORTHING -000.96
EASTING -001.32

LOG DEPTH 0040.00
TRUE DEPTH 0039.96
TILT 3.25 DG
BEARING 241.19 DG
NORTHING -000.80
EASTING -000.75

LOG DEPTH 0030.00
TRUE DEPTH 0029.98
TILT 3.40 DG
BEARING 206.15 DG
NORTHING -000.53
EASTING -000.26

LOG DEPTH 0020.00
TRUE DEPTH 0020.00
TILT 3.40 DG
BEARING 205.73 DG
NORTHING +000.00
EASTING +000.00


BPB
COAL LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA
CALIBRATION DATA
GAMMA RAY
BULK DENSITY
HOLE SIZE CORRECTION DATA


B P B
DEPTH
SCHEDULE
CLIENT
AREA
COUNTRY

SEAM THICKNESS LOG

BOREHOLE TW82-223 (3)
CLIENT Crows Nest Resources Ltd.
AREA Telkwa
COUNTRY Canada
DATE LOGGED [illegible]/82
DEPTH SCALE 1:20
1 OF 1 LOGS

Tk Telkwa 82(3)

BOREHOLE DATA: REFER TO LITHOLOGY LOG
OPERATION DATA: REFER TO LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA: COAL COMBINATION SONDE

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: CALIPER, B.R. DENSITY

SOURCE SONDE AND CALIBRATION: REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG INTERVALS

REMARKS

B P B SEAM THICKNESS LOG

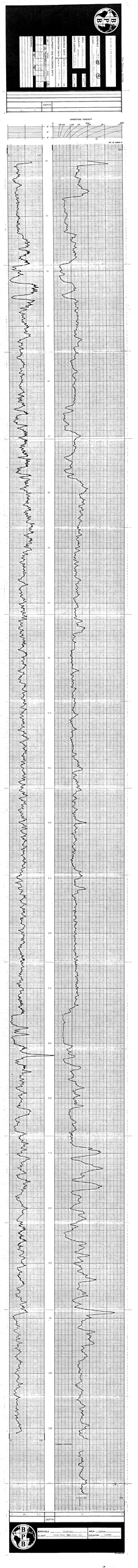
CALIPER (INCHES)	DEPTH	BED RESOLUTION DENSITY

CALIPER	DEPTH	BED RESOLUTION DENSITY
7 6 dia 4 3 2		25000 S.B.R.D.U 15000

BOREHOLE TW82-223
CLIENT Crows Nest Resources Ltd.
AREA Telkwa
COUNTRY Canada

SEAM THICKNESS LOG

MY 88002 R



BP
BP
DEPTH
SANDSTONE POROSITY
DEPTH

Tk Telkwa 6a(3)A

223
(5)

BOREHOLE
CLIENT Crows Nest Resources Ltd.
AREA Telkwa
COUNTRY Canada
DATE LOGGED
DEPTH SCALE
OF LOGS

BOREHOLE DATA REFER TO Lithology LOG
OPERATION DATA REFER TO Lithology LOG
EQUIPMENT AND RECORDING DATA

LOG	TAPING	PANEL	

REMARKS

238

DEPTH

DEPTH CHA METERS 5000

BOREHOLE TW82-22
CLIENT Crows Nest Resources Ltd.
AREA Telkwa
COUNTRY Canada

COAL LITHOLOGY LOG

BOREHOLE: TH82D-224 (1)
CLIENT: Crows Nest Resources Ltd.
AREA: Telkwa
COUNTRY: Canada
DATE LOGGED: 20/Jul/82
DEPTH SCALE: 1:100
1 OF 5 LOGS

Tk-Telkwa 82(3)A

SONDE TYPE: COAL COMBINATION SONDE
LOG SUITE: GAMMA RAY, L S DENSITY, CALIPER

BOREHOLE DATA
PERMANENT DATUM: GROUND LEVEL
MEASUREMENTS FROM: G.L (BPB), G.L (DRILLER)
DEPTH REACHED: 247.0m (BPB), 247.0m (DRILLER)
CASING SHOE: 60.0m (BPB), 60.0m (DRILLER)

FLUID DATA
NATURE: Super Gel-X/Water
No sample available

OPERATION DATA
FIRST READING: 247.0m
LAST READING: 00.0m
INTERVAL LOGGED: 247.0m
UNIT-TRUCK No: U21/V218
WITNESS: D.Fisher & W.Cavendish

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

LOG	SONDE	SOURCE	CALIBRATOR	LOG TAPED	RECORD SPEED	DIRECT or REPLAY	SPEED	TC SECS	NORM	CAL COEFF	FROM	TO	INTERVAL	SEAM LOG RUN
	119													
GAMMA RAY			371	Y	9m/m	D	9m/m	1	"	1/60	246	00	246	
L S DENSITY	SIDEWALL POSITION		0336	Y	9m/m	D	9m/m	.3	7.14	"	246	00	246	
CALIPER			7"..2"	Y	9m/m	D	9m/m	.3	"	"	246	00	246	

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

FROM	225m	221m	214m	INTERVAL TOTAL
TO	222m	216m	206m	
INTERVAL	3m	5m	8m	16m

ADDITIONAL SONDES RUN

SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG
206	F/E	1:100	
216	N/N	1:100	
215	Vert.	Cont.	

REFER TO ADDITIONAL HEADINGS

REMARKS
No reliable mud sample available.

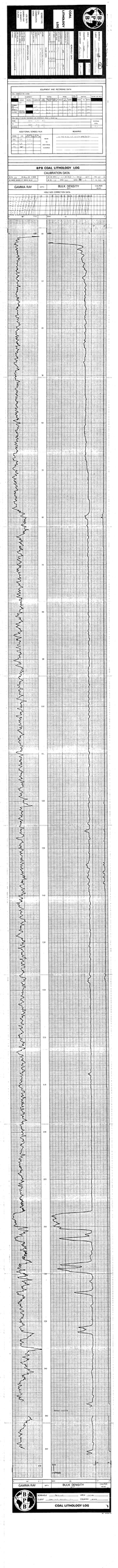
BPB COAL LITHOLOGY LOG

CALIBRATION DATA

JIG No 371 VALUE 494 @ 2 DIAM
JIG MARK SHOWN AT ABOVE VALUE -/10
JIG CAL DATE 06/Jul/82 JIG VALUE 5740 SDU @ g/cm³ 2" ins 297 cps
JIG No 0336 SPAN 6000 NORM SDU/CPS 7.14 7" ins 603 cps

GAMMA RAY | DEPTH | BULK DENSITY g/cm³ | CALIPER INCHES

HOLE SIZE CORRECTION DATA


COAL LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA
BPB COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
BULK DENSITY
COAL LITHOLOGY LOG

Tek-Telkwa 82/5/8

BPB

COAL QUALITY LOG.

3

BOREHOLE Tek20-220

CLIENT Crows Nest Resources Ltd.

AREA Telkwa

COUNTRY Canada

DATE LOGGED 20/2/82

SPEED SCALE 1:100

1 of 1 LOGS

BOREHOLE DATA	REFER TO lithology	LOG
OPERATION DATA	REFER TO lithology	LOG

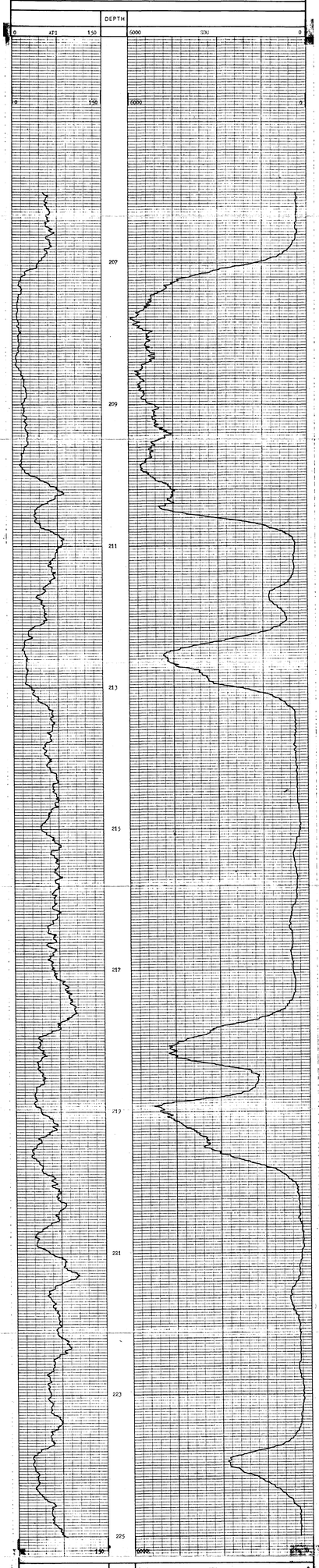
EQUIPMENT AND RECORDING DATA

LOG	TAPING MODE	TAPING SPEED	SPEED	TC	NORM	LOG

LOG	TAPING MODE	TAPING SPEED	SPEED	TC	NORM	LOG
1	1	2	2	2	7.5	1
2	2	2	2	2	7.5	1
3	2	2	2	2	7.5	1
4	2	2	2	2	7.5	1
5	2	2	2	2	7.5	1
6	2	2	2	2	7.5	1
7	2	2	2	2	7.5	1
8	2	2	2	2	7.5	1
9	2	2	2	2	7.5	1
10	2	2	2	2	7.5	1
11	2	2	2	2	7.5	1
12	2	2	2	2	7.5	1
13	2	2	2	2	7.5	1
14	2	2	2	2	7.5	1
15	2	2	2	2	7.5	1
16	2	2	2	2	7.5	1

REMARKS

220a	211a	215a	
222a	213a	220a	
1/2	1/2	1/2	1/2



BOREHOLE Tek20-225

CLIENT Crows Nest Resources Ltd.

AREA Telkwa

COUNTRY Canada

MTA 5243 X

BPB

SEAM THICKNESS LOG

SONDE TYPE
COAL COMBINATION SONDE

SONDE SERIAL NUMBER

LOG SUITE
CALIPER
BR DENSITY

COAL COMBINATION SONDE

SCHLUMBERGER	
SPECIAL SYMBOL	
SPECIAL SYMBOL	
SPECIAL SYMBOL	
SPECIAL SYMBOL	
SPECIAL SYMBOL	
SPECIAL SYMBOL	
SPECIAL SYMBOL	
SPECIAL SYMBOL	

BOREHOLE DATA — REFER TO LITHOLOGY LOG

OPERATION DATA — REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

LOG							
LOG							
SPEED							
SENSITIVITY							
TIME CONSTANT							
SPEED							
SENSITIVITY							
TIME CONSTANT							

REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG INTERVALS

FROM	207m	221m	224m	
TO	220m	224m	225m	
FROM	3m	3m	3m	
TO				
FROM				
TO				

TOTAL

REMARKS

TK-TELKWA P&A/OB

BOREHOLE TWB23-224 (4)

CLIENT Crows Nest Resources Ltd.

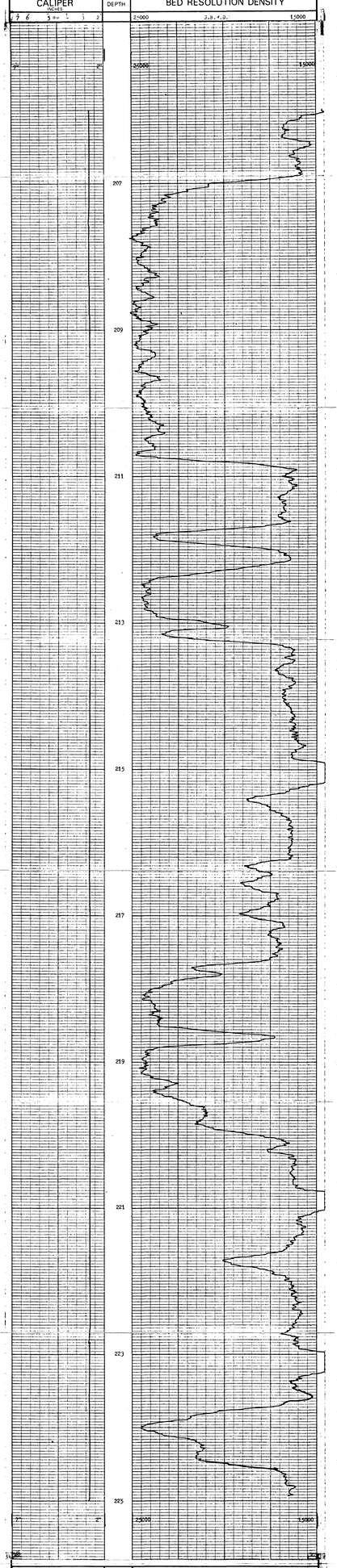
AREA Telkwa

COUNTRY Canada

DATE LOGGED 22/5/82

OPERATOR L. Jones

B P B SEAM THICKNESS LOG



BOREHOLE TWB23-224

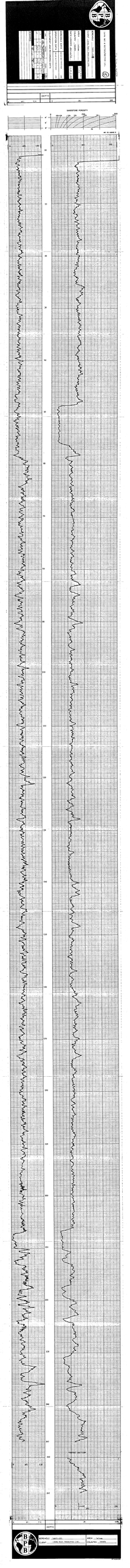
CLIENT Crows Nest Resources Ltd.

AREA Telkwa

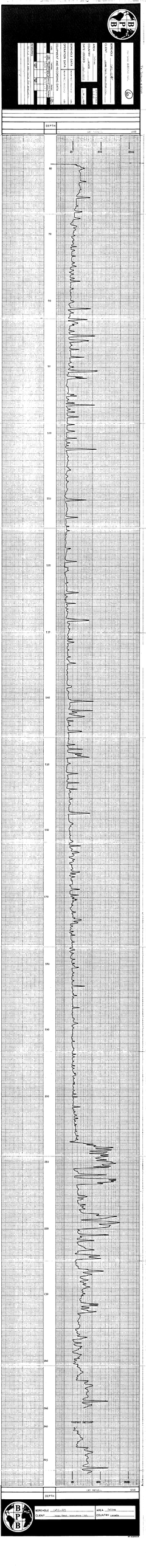
COUNTRY Canada

SEAM THICKNESS LOG

MY 88003 R



BPB
BPB
SANDSTONE POROSITY
DEPTH



BOREHOLE
CLIENT
AREA
COUNTRY
DATE
BOREHOLE DATA
OPERATION DATA
COUNTRY AND COORDINATE DATA
DEPTH
LOG NUMBER
GRAPHIC SECTION
BOREHOLE
CLIENT
AREA
COUNTRY