TK-Tekwa 82(3)A

Directional survey

TW-82D-250

3

LOG DEPTH	0170.00	
TRUE DEPTH	0170.00	
TILT	1.16	DG
BEARING	288.61	DG
NORTHING	+000.25	
EASTING	-000.07	

LOG DEPTH	0160.00	
TRUE DEPTH	0160.00	
TILT	.28	DG
BEARING	181.02	DG
NORTHING	+000.18	
EASTING	+000.11	

LOG DEPTH	0150.00	
TRUE DEPTH	0150.00	
TILT	.50	DG
BEARING	54.24	DG
NORTHING	+000.23	
EASTING	+000.11	

LOG DEPTH	0140.00	
TRUE DEPTH	0140.00	
TILT	.64	DG
BEARING	318.19	DG
NORTHING	+000.18	
EASTING	+000.04	

LOG DEPTH	0130.00	
TRUE DEPTH	0130.00	
TILT	.28	DG
BEARING	296.48	DG
NORTHING	+000.10	
EASTING	+000.12	

LOG DEPTH	0120.00	
TRUE DEPTH	0120.00	
TILT	.00	DG
BEARING	293.99	DG
NORTHING	+000.08	
EASTING	+000.16	

LOG DEPTH	0110.00	
TRUE DEPTH	0110.00	
TILT	.28	DG
BEARING	5.09	DG
NORTHING	+000.08	
EASTING	+000.16	

LOG DEPTH	0100.00	
TRUE DEPTH	0100.00	
TILT	.50	DG
BEARING	55.80	DG
NORTHING	+000.03	
EASTING	+000.16	

LOG DEPTH	0090.00	
TRUE DEPTH	0090.00	
TILT	.36	DG
BEARING	17.57	DG
NORTHING	-000.01	
EASTING	+000.09	

LOG DEPTH	0080.00	
TRUE DEPTH	0080.00	
TILT	.28	DG
BEARING	355.89	DG
NORTHING	-000.07	
EASTING	+000.07	

LOG DEPTH	0070.00	
TRUE DEPTH	0070.00	
TILT	.24	DG
BEARING	63.81	DG
NORTHING	-000.12	
EASTING	+000.07	

LOG DEPTH	0060.00	
TRUE DEPTH	0060.00	
TILT	.32	DG
BEARING	141.65	DG
NORTHING	-000.14	
EASTING	+000.03	

LOG DEPTH	0050.00	
TRUE DEPTH	0050.00	
TILT	.58	DG
BEARING	179.08	DG
NORTHING	-000.10	
EASTING	+000.00	

LOG DEPTH	0040.00	
TRUE DEPTH	0040.00	
TILT	.72	DG
BEARING	210.42	DG
NORTHING	+000.00	
EASTING	+000.00	

COAL LITHOLOGY LOG

COMPANY	BPB INSTRUMENTS (GEOPHYSICS) LTD
WELL	COLLIERY
FIELD	
COUNTY	
LOCATION	
DATE	
RUN NO.	ONE
DRILLER	
LOGGER	
BIT	
CASING	
MUD	
MAX. TEMP.	
RIG	
REMARKS	

COMPANY	BPB INSTRUMENTS (GEOPHYSICS) LTD
WELL	COLLIERY
FIELD	
COUNTY	
DATE	
RUN	ONE
DRILLER	
LOGGER	
BIT	
CASING	
MUD	
MAX. TEMP.	
RIG	
REMARKS	

EQUIPMENT AND RECORDING DATA

COAL COMBUSTION SONDE

No.	Type	Serial No.	Calibration Date	Diameter	Length	Density	Thickness	Density	Thickness	Density	Thickness	Density	Thickness	Density	Thickness
COAL COMBUSTION SONDE															
GAMMA	TITIN	BPB		37L	4	N/A	3	N/A	1	1.40	3.50	55	158		
BULK DENSITY				42R	4	N/A	3	N/A	2.5	2.37	3.50	55	158		
CALIPER	PROXIMITY			2" x 1"	4	N/A	3	N/A	1.5	1	3.50	55	158		

COAL COLLIERY CALIBRATION CALIBRATION LOG PROXIMITY PAD & GRAMMA

Probe	1.00 in.	1.25 in.	1.50 in.	1.75 in.	2.0 in.	2.25 in.	2.5 in.	2.75 in.	3.0 in.		
Gamma	1.00 in.	1.25 in.	1.50 in.	1.75 in.	2.0 in.	2.25 in.	2.5 in.	2.75 in.	3.0 in.		
Gamma	3.25 in.	3.5 in.	3.75 in.	4.0 in.	4.25 in.	4.5 in.	4.75 in.	5.0 in.	5.25 in.		

ADDITIONAL SONDES PLAN					
SONDE	No.	SERIAL No.	CALIBRATION DATE		
JUL	A/B	3.1/B			
JUS	A/B	3.1/B			
JLS	NaI(L)	C.S.S.			
JU	N.J.S	3.1/B			

REMARKS

BPB COAL LITHOLOGY LOG

CALIBRATION DATA

JS to JTS	value 1000 c.p.s	JS to JU	1.5 Deg/Sec max ±25%	500 c.p.s — 1 g/cc	F_{ma} 600 c.p.s
JS same source of which value	15.5	JS to TITIN	Gma 5000	Gma 2.7 - 3.0	F_{ma} 250 c.p.s

GAMMA RAY	BPB	BULK DENSITY	CALIPER

BULK DEN CORRECTION DATA

| | | | | | | | | | | | | | | |

BPB

COAL QUALITY LOG

WELL	
FIELD	
COUNTY	
STATE	
LOCATION	
OTHER SERVICES	
PERMANENT DATUM	GL
LOG MEASURED FROM	KB
DRILLING MEASURED FROM	KB
ELEVATION	K.B.
	D.F.
	G.L.

DATE	
RUN NO.	
DEPTH-DRILLER	
DEPTH-LOGGER	
BTM. 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 RMF	SOURCE RMC
RM @ BHT	
TIME SINCE CIRC.	
TIME SINCE CIRCULATION	
MAX. REC. TEMP.	
EQUIP. LOCATION	
RECORDED BY	
WITNESSED BY	

OPERATOR'S RIG NO. | OPERATOR'S RIG TYPE

BIT RUN DATA

BIT NO.	SIZE	TYPE	MAKE	JETS	IN	OUT	FOOTAGE	HOURS

CASING RECORD

SIZE	WEIGHT	GRADE	THREAD	FROM	TO

MUD RECORD

DATE	DEPTH	TYPE	WT.	VIS.	WL	PH	PV	YP	GEL	CL	CA

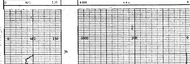
REMARKS

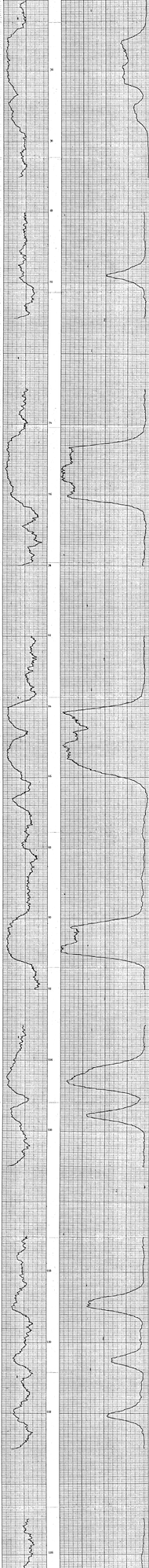
BPB COAL QUALITY LOG

DATA NO.

COAL BULK DENSITY

HOLE SIZE CORRECTION DATA





COAL BULK DENSITY

SCHEDULE

CLIENT

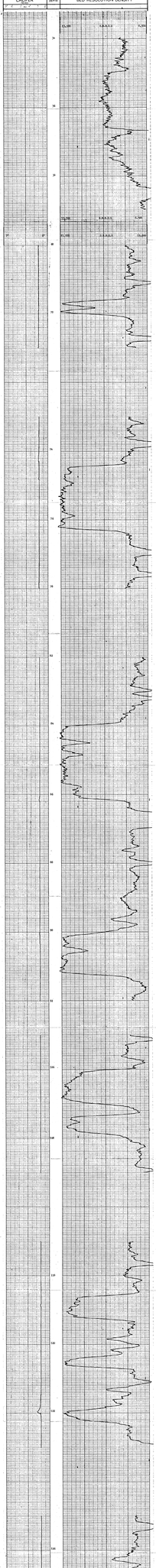
AREA

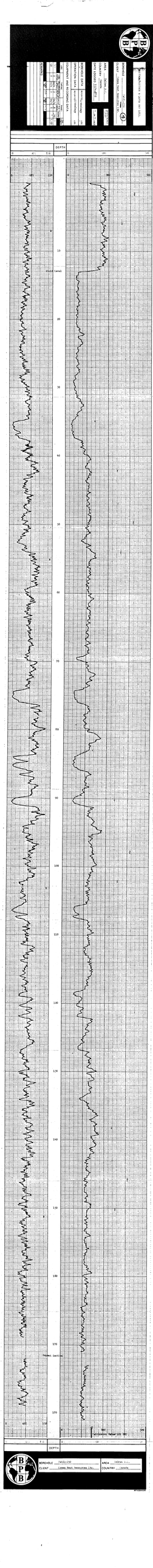
COUNTRY

COAL QUALITY LOG

8 P.B SEAM THICKNESS LOG

CALIPER	DEPTH	BED RESOLUTION DENSITY




BPB
DEPTH
FIGGE Level
TRANS SECTION
DEPTH
BORE-HOLE
CLIENT
AREA
COUNTRY

BPB

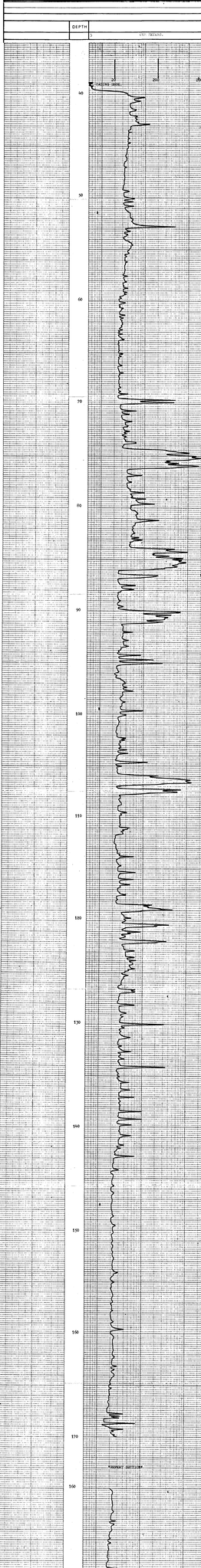
BOREHOLE TW80-230 (5)
CLIENT Crown Point Resources Ltd.
AREA Yellowknife
COUNTRY Canada
DATE LOGGED 5-6-80

WELLSITE GEOLOGIST INC.

DOWNHOLE DATA
OPERATOR DATA
COMMENT ON PHOTOGRAPHIC DATA
REMARKS

DEPTH

CPS (Minimum) 0 — 3000



DEPTH

CPS (Minimum) 0 — 3000

BPB

BOREHOLE TW80-230
CLIENT Crown Point Resources Ltd.
AREA Yellowknife
COUNTRY Canada

BPB INSTRUMENTS

MULTI-REC SONIC LOG

BOREHOLE	MC-20-C
AREA	Yellow Knife
COUNTRY	Canada
DATE	1-Jan-1970
RUN NUMBER	1
DATE LOGGED	1-Jan-1970
DRILLER'S TD	1000
LOGGER'S TD	1000
TOP LOG INTERVAL	0
BOTTOM LOG INTERVAL	1000
CASING DRILLER	0
CASING LOGGER	0
BIT SIZE	0
TYPE FLUID IN HOLE	Water
DENSITY	1.0
VISCOSITY	1.0
PH	7.0
FLUID LEVEL	Full
MAX. RECORDED TEMP.	0
ESTIMATED BHT	0
TIME SINCE CIRCULATION	0
TIME SINCE LAST RUN	0
MAXIMUM RECORDED DEPTH	1000
LOGGING DISTANCE	1000
LOGGING SPEED	30
TIME CONSTANT	0.1
SAMPLE RATE	0.5
RECORDED	Digital
DATA PROCESSED	Digital
OPERATOR	Jim Bell
OPERATOR'S STATION	1
RIG	Bell
RIG TYPE	Cable
RIG NO.	1
DRILLING CONTRACTOR	Bell
DRILLING METHOD	Cable
CASING	
BIT	
MUD	
RECORDED BY	Jim Bell
WITNESSED BY	

BPB INSTRUMENTS (Canada) Ltd.
Calgary, Alberta, Canada

CLIENT: Dome Petr. Resources Ltd.
COUNTRY: Canada
WELL: MC-20-C
FIELD: Yellow Knife
DATE LOGGED: 1-Jan-1970

RUN NUMBER: 1

EQUIPMENT AND RECORDING DATA

SONDE No.

	TRANSDUCER MANUFACTURER		CENTRALISER OPEN	CENTRALISER CLOSED	GENERAL LOGGING SPEED	TC	BUCK	DETAIL LOGGING SPEED	TC	BUCK	DATA RECORDED FROM	TO	INTERVAL	DATA DISPLAYED FROM	TO	INTERVAL
CHANNEL 1		61 - 80	4"	4"							0	20	3/4d			
CHANNEL 2		61 - 80	4"	4"	0kft/s	-3					0	20	3/4d	0	20	3/4d
CHANNEL 3		61 - 80	4"	4"							0	20	3/4d	0	20	3/4d
CHANNEL 4		61 - 80	4"	4"	0kft/s	-3					0	20	3/4d	0	20	3/4d

INTERVAL SPEED: BOTH AUTO AND MANUAL RECORDING: DIGITAL

FROM	
TO	
INTERVAL	

INTERVAL TIME: 10 ms

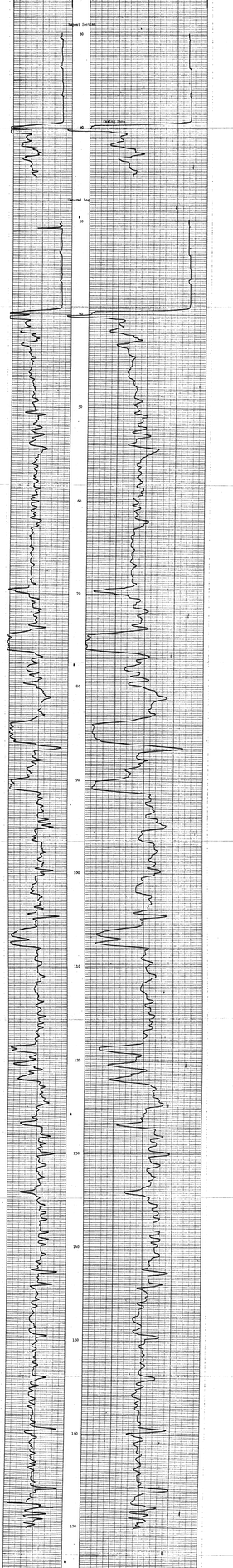
REMARKS

TOP OF SONDE

1	2	3	4
1"	1"	1"	1"

CHANNEL 1 | DEPTH | CHANNEL 2

1 | INTERVAL TRANSIT TIME (s) | 100 | INTERVAL TRANSIT TIME (s) | 100
microseconds/ft. | microseconds/ft.



100 microseconds/ft. 100 | DEPTH | 100 microseconds/ft. 100
CHANNEL 1 | CHANNEL 2

BPB INSTRUMENTS

BOREHOLE: MC-20-C | AREA: Yellow Knife
CLIENT: Dome Petr. Resources Ltd. | COUNTRY: Canada

MC SONIC LOG

TW-250A

238

T4-T8 Hole 8138

COAL LITHOLOGY LOG

BPB

BOREHOLE	2402-2-2-A
CLIENT	Crows Nest Resources Ltd.
AREA	Kootenay
COUNTRY	Canada
DATE LOGGED	11/4/88
DEPTH SCALE	1:100
1 cm = 2.00m	

BOREHOLE DATA	
PERMANENT/TEMP	Permanent casing
CLEARANCE OF PIG	
HOLE/BRANCH/TRAPPER	8138
DEPTH RECORDED	32.00
DRILLER	Smith
DATE RECORDED	11/4/88
DATE RUN	11/4/88
SONDE SIZE	1 2 3 4
FROM	0 0 0 0
TO	32 32 32 32
DIAMETER	76 76 76 76
FLUID LEVEL	Dry
FLUID TYPE	Air
FLUID DENSITY	
Max pressure (MPa)	
BIT	76 mm Smith 4151J4151H

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

OPERATION DATA	
FIRST READING	0.00m
LAST READING	32.00m
CUTTING CODES	2/2/2/2
CUTTING No.	2/2/2/2
WITNESS	Jim Mc Alister

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

LOG	EQUIPMENT: SONDE	EQUIPMENT: SOURCE	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
	1198	5121												
GAMMA RAY			321	Y	9m/m	D	9m/m	1	*	1.66	42	00	42	
DENSITY			0336	Y	9m/m	D	9m/m	.3	7.20	*	42	00	42	
CALIPER	SIDEWALL POSITION		7"..2"	Y	9m/m	D	9m/m	.3	*	*	42	00	42	

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

FROM	30.00m	INTERVAL TOTAL
TO	32.00m	
INTERVAL	2.00m	6.00m

ADDITIONAL SONDES RUN			
SONDE	LOG	GENERAL SCALE	DETAIL SCALE LOG

REFER TO ADDITIONAL HEADINGS

REMARKS

BPB COAL LITHOLOGY LOG

CALIBRATION DATA

JG No. 1 VALUE 0000 @ 2 DAM

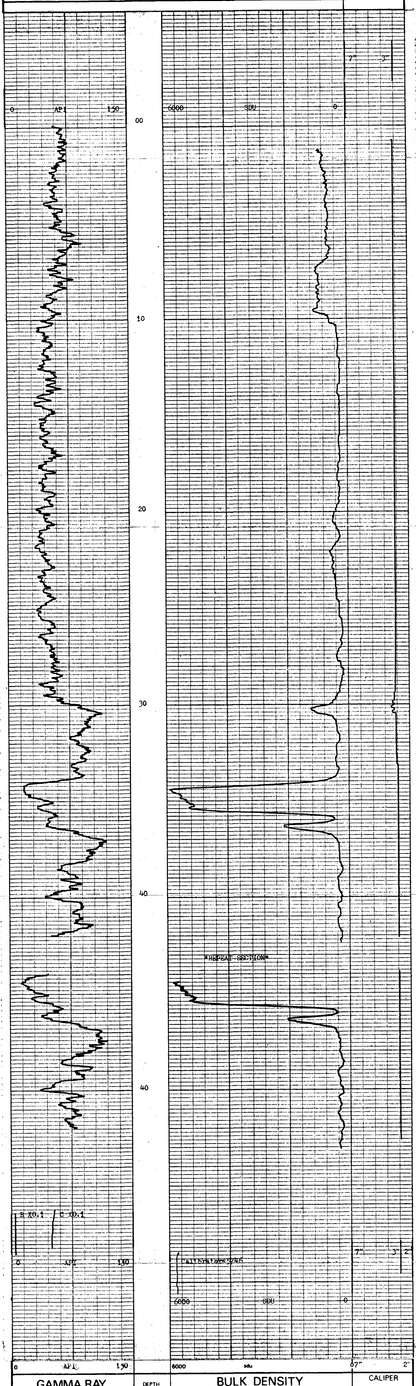
JG MARK SHOWN AT ABOVE VALUE X 0.1

JG CAL DATE 11/4/88 JG VALUE 0000 SDU @ g/cm³ 2.00 cps

JG No. 0336 SPAN 0000 NORM 2.00 = 7.20 g/cm³ 2.00 cps

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

HOLE SIZE CORRECTION DATA



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

BPB

BOREHOLE	2402-2-2-A
AREA	Kootenay
CLIENT	Crows Nest Resources Ltd.
COUNTRY	Canada

COAL LITHOLOGY LOG

MT A10261 E

238 TK-Telkwa 82(3)A

BPB

BOREHOLE TW82-2-0-A (2)

CLIENT Crows Nest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

DATE LOGGED 16/Aug/82

DEPTH SCALE 1:20

2 OF 3 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	DIRECTOR REPLAY	SPEED	J.C. SECS	NORM	
GAMMA RAY	Y	20m/m	N	20m/m	2	'	1.00
L.S DENSITY	Y	20m/m	N	20m/m	.3	7.00	'

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	30.0m
TO	32.0m
INTERVAL	2.0m
FROM	
TO	
INTERVAL	
INTERVAL TOTAL	

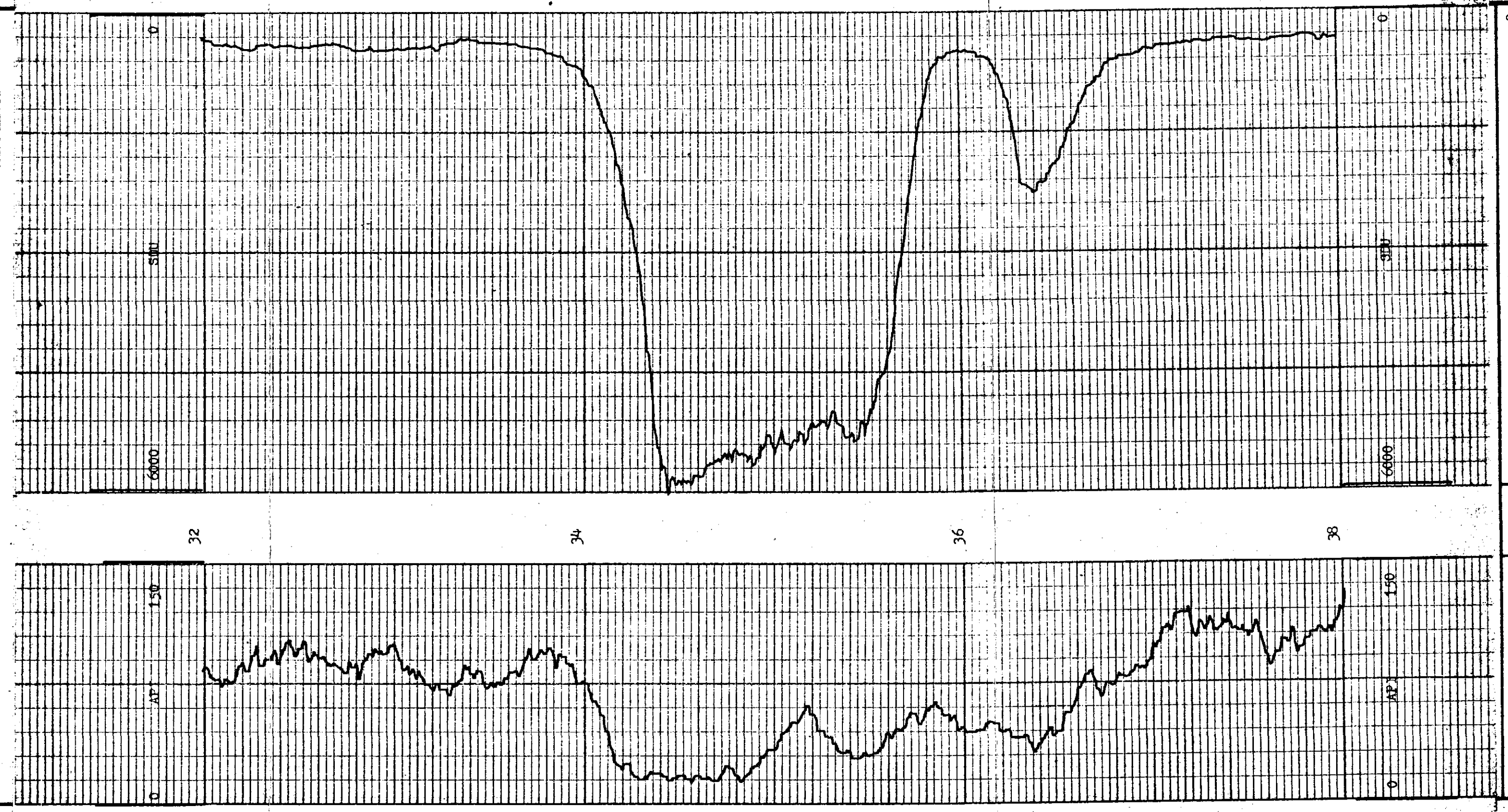
REMARKS

BPB COAL QUALITY LOG

COAL BULK DENSITY g/cm³

HOLE SIZE CORRECTION DATA

GAMMA RAY



BOREHOLE TW82-2-0-A

CLIENT Crows Nest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

COAL QUALITY LOG

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Tk-Telkwa 82(3)A

BPB

BOREHOLE TW82D-250-A
CLIENT Crows Nest Resources Ltd.
(3)

AREA Telkwa B.C.
COUNTRY Canada
DATE LOGGED 16/Aug/82

DEPTH SCALE 1:20
2 OF 2 LOGS

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	DIRECT/ REPLAY	SPEED	PANEL	CAL COEFF
CALIPER	Y	2m/m	R	2m/m	1	
BR DENSITY	Y	2m/m	R	2m/m	.3	

SOURCE SONDE AND CALIBRATION
REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG INTERVALS

		TC SECS	NORM
FROM	30.00m		
TO	32.00m		
INTERVAL	6.00m		
FROM			
TO			
INTERVAL			
REMARKS			

INTERVAL TOTAL # 6

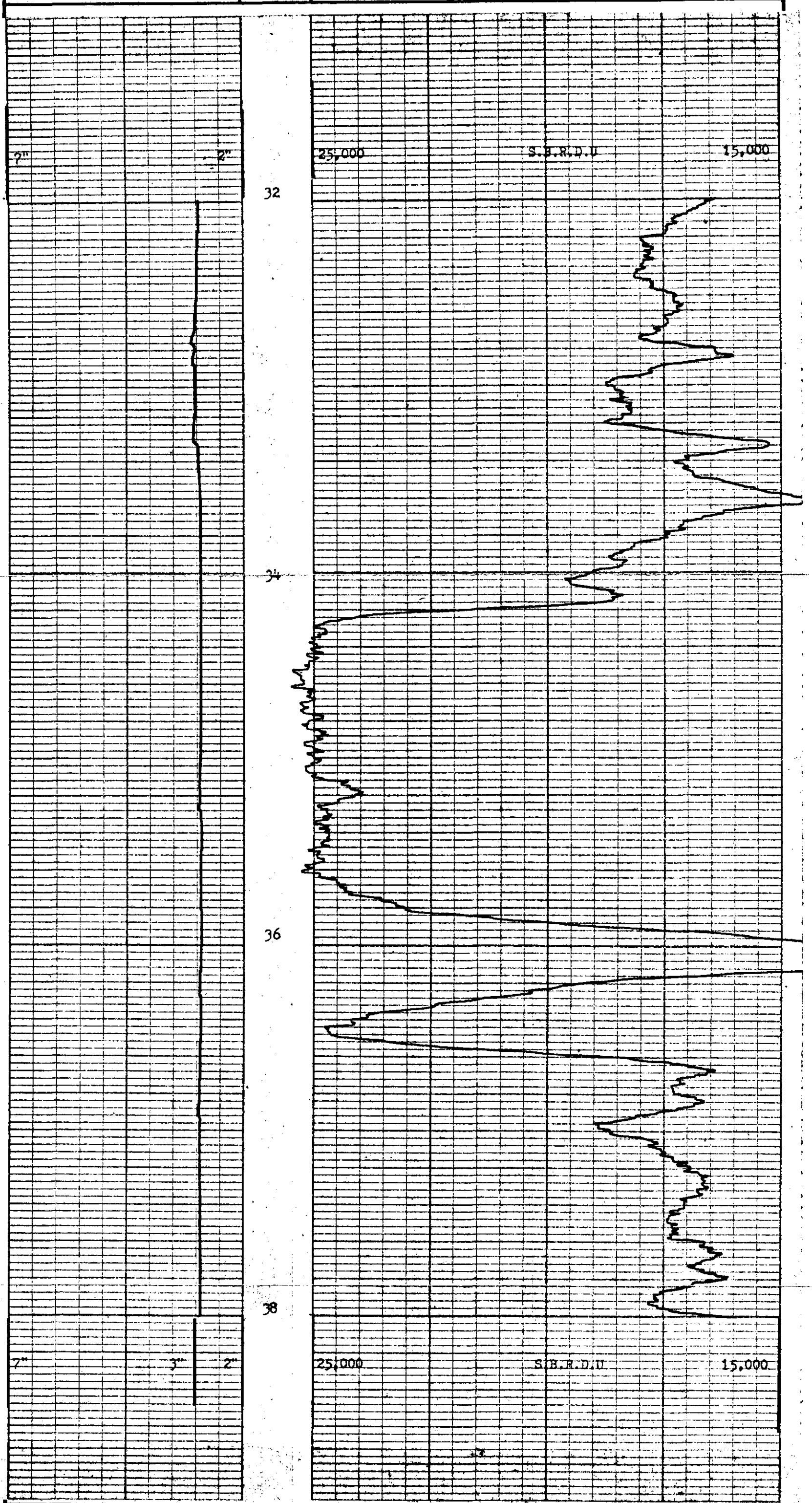
SEAM THICKNESS

SONDE TYPE
COAL
COMBINATION
SONDE

LOG SUITE
CALIPER
B.R. DENSITY

B P B SEAM THICKNESS LOG

CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
7" 6" 5" dia 4" 3" 2"		25,000 S.B.R.D.U 15,000



CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
7" 6" 5" dia 4" 3" 2"		25,000 S.B.R.D.U 15,000

BPB

BOREHOLE TW82D-250-A
CLIENT Crows Nest Resources Ltd.
AREA Telkwa B.C.
COUNTRY Canada

SEAM THICKNESS LOG

MY 88002 R

00238

TW-261

Page 1 of 2

Directional Survey

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TW-82D-251

IK Telkwa 82(3)A

LOG DEPTH	0350.00
TRUE DEPTH	0350.00
TILT	1.64 DG
BEARING	80.43 DG
NORTHING	+000.77
EASTING	+003.86

LOG DEPTH	0340.00
TRUE DEPTH	0340.00
TILT	1.28 DG
BEARING	34.89 DG
NORTHING	+000.72
EASTING	+003.58

LOG DEPTH	0330.00
TRUE DEPTH	0330.00
TILT	1.22 DG
BEARING	49.24 DG
NORTHING	+000.54
EASTING	+003.45

LOG DEPTH	0320.00
TRUE DEPTH	0320.00
TILT	1.16 DG
BEARING	45.69 DG
NORTHING	+000.40
EASTING	+003.29

LOG DEPTH	0310.00
TRUE DEPTH	0310.00
TILT	1.36 DG
BEARING	45.87 DG
NORTHING	+000.25
EASTING	+003.14

LOG DEPTH	0300.00
TRUE DEPTH	0300.00
TILT	1.56 DG
BEARING	54.83 DG
NORTHING	+000.09
EASTING	+002.97

LOG DEPTH	0290.00
TRUE DEPTH	0290.00
TILT	1.42 DG
BEARING	74.20 DG
NORTHING	-000.06
EASTING	+002.75

LOG DEPTH	0280.00
TRUE DEPTH	0280.00
TILT	1.14 DG
BEARING	69.44 DG
NORTHING	-000.13
EASTING	+002.51

LOG DEPTH	0270.00
TRUE DEPTH	0270.00
TILT	1.28 DG
BEARING	43.15 DG
NORTHING	-000.20
EASTING	+002.32

LOG DEPTH	0260.00
TRUE DEPTH	0260.00
TILT	1.42 DG
BEARING	179.57 DG
NORTHING	-000.36
EASTING	+002.17

LOG DEPTH	0250.00
TRUE DEPTH	0250.00
TILT	.78 DG
BEARING	100.78 DG
NORTHING	-000.40
EASTING	+001.93

LOG DEPTH	0240.00
TRUE DEPTH	0240.00
TILT	.70 DG
BEARING	95.83 DG
NORTHING	-000.38
EASTING	+001.79

LOG DEPTH	0230.00
TRUE DEPTH	0230.00
TILT	.78 DG
BEARING	117.80 DG
NORTHING	-000.37
EASTING	+001.67

LOG DEPTH	0220.00
TRUE DEPTH	0220.00
TILT	.93 DG
BEARING	112.38 DG
NORTHING	-000.30
EASTING	+001.55

LOG DEPTH	0210.00
TRUE DEPTH	0210.00
TILT	.90 DG
BEARING	98.25 DG
NORTHING	-000.24
EASTING	+001.40

LOG DEPTH	0200.00
TRUE DEPTH	0200.00
TILT	.30 DG
BEARING	121.43 DG
NORTHING	-000.22
EASTING	+001.24

LOG DEPTH	0190.00
TRUE DEPTH	0190.00
TILT	.46 DG
BEARING	129.42 DG
NORTHING	-000.19
EASTING	+001.20

LOG DEPTH	0180.00
TRUE DEPTH	0180.00
TILT	.64 DG
BEARING	148.95 DG
NORTHING	-000.14
EASTING	+001.13

LOG DEPTH	0170.00
TRUE DEPTH	0170.00
TILT	.56 DG
BEARING	149.64 DG
NORTHING	-000.04
EASTING	+001.08

LOG DEPTH	0160.00
TRUE DEPTH	0160.00
TILT	.28 DG
BEARING	210.27 DG
NORTHING	+000.03
EASTING	+001.03

LOG DEPTH	0150.00
TRUE DEPTH	0150.00
TILT	.10 DG
BEARING	270.20 DG
NORTHING	+000.06
EASTING	+001.05

258 W-82D-251 TK Telkwa 82(3)A

LOG DEPTH 0140.00
TRUE DEPTH 0140.00
TILT .41 DG
BEARING 320.20 DG
NORTHING +000.08
EASTING +001.07

LOG DEPTH 0130.00
TRUE DEPTH 0130.00
TILT .63 DG
BEARING 67.27 DG
NORTHING +000.01
EASTING +001.11

LOG DEPTH 0120.00
TRUE DEPTH 0120.00
TILT .53 DG
BEARING 123.09 DG
NORTHING -000.04
EASTING +001.01

LOG DEPTH 0110.00
TRUE DEPTH 0110.00
TILT .32 DG
BEARING 153.28 DG
NORTHING +000.01
EASTING +000.94

LOG DEPTH 0100.00
TRUE DEPTH 0100.00
TILT .32 DG
BEARING 109.71 DG
NORTHING +000.06
EASTING +000.91

LOG DEPTH 0090.00
TRUE DEPTH 0090.00
TILT .72 DG
BEARING 89.58 DG
NORTHING +000.08
EASTING +000.86

LOG DEPTH 0080.00
TRUE DEPTH 0080.00
TILT 1.00 DG
BEARING 92.54 DG
NORTHING +000.07
EASTING +000.73

LOG DEPTH 0070.00
TRUE DEPTH 0070.00
TILT .81 DG
BEARING 52.98 DG
NORTHING +000.08
EASTING +000.56

LOG DEPTH 0060.00
TRUE DEPTH 0060.00
TILT .95 DG
BEARING 60.56 DG
NORTHING +000.00
EASTING +000.44

LOG DEPTH 0050.00
TRUE DEPTH 0050.00
TILT 1.14 DG
BEARING 123.00 DG
NORTHING -000.08
EASTING +000.30

LOG DEPTH 0040.00
TRUE DEPTH 0040.00
TILT .78 DG
BEARING 99.14 DG
NORTHING +000.02
EASTING +000.13

LOG DEPTH 0030.00
TRUE DEPTH 0030.00
TILT .28 DG
BEARING .80 DG
NORTHING +000.04
EASTING +000.00

LOG DEPTH 0020.00
TRUE DEPTH 0020.00
TILT .00 DG
BEARING 293.99 DG
NORTHING +000.00
EASTING +000.00

238

COMPANY	CONSOLIDATION COAL CO.
WELL	LATTIMER
FIELD	
COUNTY	CARBON
STATE	PENNSYLVANIA
OTHER SERVICES	
SECT.	TWP.
RGE.	
PERMANENT DATUM	GROUND LEVEL
ELEV.	
LOG MEASURED FROM	KB 10 FT. ABOVE PERM. DATUM
DRILL. MEASURED FROM	KB
DATE	10-8-74
RUN NO.	ONE
DEPTH-DRILLER	1000
DEPTH-LOGGER	1000
BTM. LOG INTERVAL	1000
TOP LOG INTERVAL	0
CASING-DRILLER	10
CASING-LOGGER	
BIT SIZE	8 3/4
TYPE FLUID IN HOLE	AIR
DENS.	
VISC.	
PH	
FLUID LOSS	
SOURCE OF SAMPLE	
RM @ MEAS. TEMP.	
RMF @ MEAS. TEMP.	
RMC @ MEAS. TEMP.	
SOURCE RMF / RMC	
RM @ BHT	
MAX. REC. TEMP.	
EQUIP. LOCATION	
RECORDED BY	
WITNESSED BY	

B.P.B. COAL QUALITY LOG

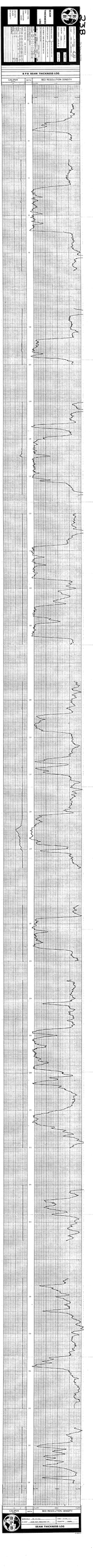
COAL BULK DENSITY

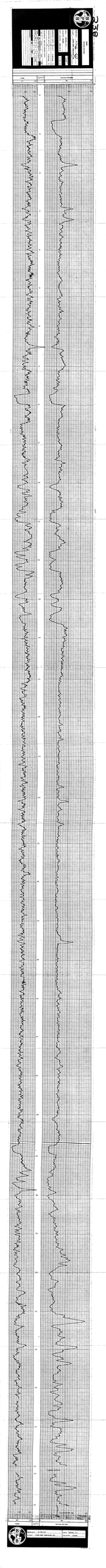
GAMMA RAY — COAL BULK DENSITY

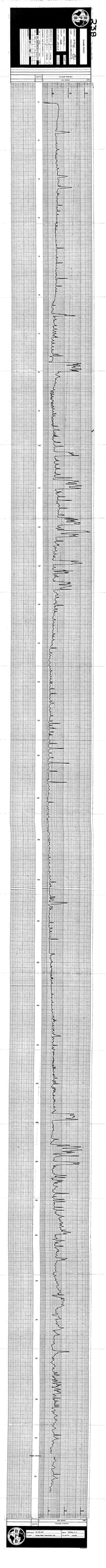
COAL BULK DENSITY

COMPANY CONSOLIDATION COAL CO.	DATE 10-8-74
WELL LATTIMER	COUNTY CARBON
FIELD	STATE PENNSYLVANIA

COAL QUALITY LOG


CSB
B.P.S. SEAM THICKNESS LOG
CALIPER
BIT SIZE
BED RESOLUTION DENSITY
SEAM THICKNESS LOG


Date
Time
Operations Engineer
Operations Supervisor
Comments
Well Name
Field
Operator
Contractor
Rig


Liquid Nitrogen
Jet Noise
Time Scale
Time Scale
Time Scale

2-38

COMPANY	CONOCO INC.
WELL	CONOCO 2-38
FIELD	WILDCAT
COUNTY	ALLEN
STATE	KANSAS
LOCATION	2310' FSL & 2310' FEL
SEC. 2	TWP. 26 S.
RGE. 18 E.	
PERMANENT DATUM	GROUND LEVEL
ELEV.	1000
LOG MEASURED FROM	KELLY BUSHING
DRILLING MEASURED FROM	KELLY BUSHING
DATE	1-2-79
RUN NO.	ONE
TYPE LOG	SONIC
DEPTH-DRILLER	1000
DEPTH-LOGGER	1000
BTM. LOG INTERVAL	1000
TOP LOG INTERVAL	SURFACE
CASING-DRILLER	8 5/8 @ 20
CASING-LOGGER	20
BIT SIZE	7 7/8
TYPE FLUID IN HOLE	WATER
DENS.	
VISC.	
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	

EQUIPMENT AND REMARKS DATA

TOOL NO.	DIST.	TYPE	SERIAL NO.	TOOL TYPE	SERIAL NO.	TOOL TYPE	SERIAL NO.

TW-252

TK Telkwa E 2(3)A

Directional survey

238

TW-82D-252

LOG DEPTH 0200.00
TRUE DEPTH 0197.67
TILT 39.40 DG
BEARING 48.07 DG
NORTHING +003.45
EASTING +006.32

LOG DEPTH 0190.00
TRUE DEPTH 0190.00
TILT .50 DG
BEARING 69.52 DG
NORTHING +000.02
EASTING +001.55

LOG DEPTH 0180.00
TRUE DEPTH 0180.00
TILT .50 DG
BEARING 112.57 DG
NORTHING +000.25
EASTING +001.47

LOG DEPTH 0170.00
TRUE DEPTH 0170.00
TILT .70 DG
BEARING 117.50 DG
NORTHING +000.82
EASTING +001.39

LOG DEPTH 0160.00
TRUE DEPTH 0160.00
TILT .56 DG
BEARING 139.94 DG
NORTHING -000.76
EASTING +001.28

LOG DEPTH 0150.00
TRUE DEPTH 0150.00
TILT .56 DG
BEARING 154.62 DG
NORTHING -000.69
EASTING +001.21

LOG DEPTH 0140.00
TRUE DEPTH 0140.00
TILT .70 DG
BEARING 84.85 DG
NORTHING -000.60
EASTING +001.17

LOG DEPTH 0130.00
TRUE DEPTH 0130.00
TILT .84 DG
BEARING 93.07 DG
NORTHING -000.61
EASTING +001.45

LOG DEPTH 0120.00
TRUE DEPTH 0120.00
TILT 1.13 DG
BEARING 132.42 DG
NORTHING -000.60
EASTING +000.90

LOG DEPTH 0110.00
TRUE DEPTH 0110.00
TILT .98 DG
BEARING 118.38 DG
NORTHING -000.47
EASTING +000.75

LOG DEPTH 0100.00
TRUE DEPTH 0100.00
TILT .92 DG
BEARING 100.02 DG
NORTHING -000.39
EASTING +000.60

LOG DEPTH 0090.00
TRUE DEPTH 0090.00
TILT 1.00 DG
BEARING 108.28 DG
NORTHING -000.36
EASTING +000.44

LOG DEPTH 0080.00
TRUE DEPTH 0080.00
TILT 1.00 DG
BEARING 105.99 DG
NORTHING -000.30
EASTING +000.29

LOG DEPTH 0070.00
TRUE DEPTH 0070.00
TILT .60 DG
BEARING 19.29 DG
NORTHING -000.26
EASTING +000.11

LOG DEPTH 0060.00
TRUE DEPTH 0060.00
TILT 1.02 DG
BEARING 223.93 DG
NORTHING -000.36
EASTING +000.08

LOG DEPTH 0050.00
TRUE DEPTH 0050.00
TILT 1.77 DG
BEARING 138.54 DG
NORTHING -000.23
EASTING +000.20

LOG DEPTH 0040.00
TRUE DEPTH 0040.00
TILT 1.69 DG
BEARING 123.93 DG
NORTHING +000.00
EASTING +000.00

COMPANY	SEC
WELL	
FIELD	
COUNTY	
STATE	
LOCATION	
SEC	TWP	RGE
OTHER SERVICES	
PERMANENT DATUM	ELEV.
LOG MEASURED FROM	ABOVE PERM. DATUM
DRILLING MEASURED FROM	
DATE	
RUN NO.	
DEPTH-DRILLER	
DEPTH-LOGGER	
BTM. LOG INTERVAL	
TOP LOG INTERVAL	
CASING-DRILLER	
CASING-LOGGER	
BIT SIZE	
TYPE FLUID IN HOLE	
DENSITY	VISC.
PH	FLUID LOSS
SOURCE OF SAMPLE	
RM @ MEAS. TEMP.	
RMF @ MEAS. TEMP.	
RMC @ MEAS. TEMP.	
SOURCE RMF	SOURCE RMC
RM @ BHT	@ °F
TIME SINCE CIRC.	
MAX. REC. TEMP.	°F
EQUIP. LOCATION	
RECORDED BY	
WITNESSED BY	

SUMMARY AND RATINGS (%)

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BPB

COAL QUALITY LOG

COMPANY: BOREHOLE GEOPHYSICS LTD.

WELL: BORDER

FIELD: COAL CREEK

COUNTY: LAMPASAS

STATE: TEXAS

OTHER SERVICES: NONE

SEC: TWP: RGE:

PERMANENT DATUM: GROUND LEVEL

ELEV.: K.B.: D.F.: G.L.:

DATE: 1-7-81

RUN NO.: ONE

DEPTH-DRILLER: 1200

DEPTH-LOGGER: 1200

BTM. LOG INTERVAL: 1200

TOP LOG INTERVAL: SURFACE

CASING-DRILLER: 8 5/8 @ 30

CASING-LOGGER: NONE

BIT SIZE: 7 7/8

TYPE FLUID IN HOLE: AIR

DENSITY: NONE

VISCOSITY: NONE

PH: NONE

FLUID LOSS: NONE

SOURCE OF SAMPLE: NONE

RM @ MEAS. TEMP.: NONE

RMF @ MEAS. TEMP.: NONE

RMC @ MEAS. TEMP.: NONE

SOURCE: RMF: RMC:

RM @ BHT: NONE

TIME SINCE CIRCULATION: NONE

TIME SINCE STOP: NONE

MAX. RECORDED TEMP.: NONE

EQUIPMENT LOCATION: NONE

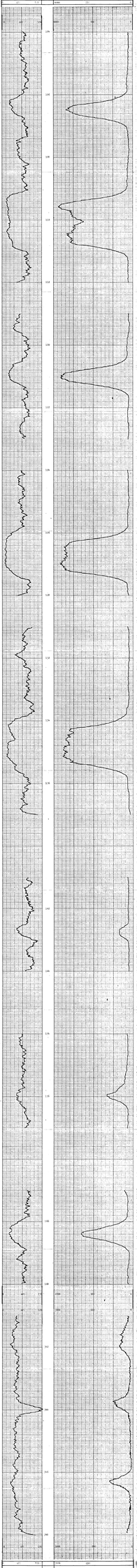
RECORDED BY: NONE

WITNESSED BY: NONE

BPB COAL QUALITY LOG

DATE 1/7 | COAL BULK DENSITY

HOLE SIZE CORRECTION DATA



DATE 1/81 | COAL BULK DENSITY

BOREHOLE: BORDER | AREA: [illegible]

CLIENT: [illegible] | COUNTY: LAMPASAS

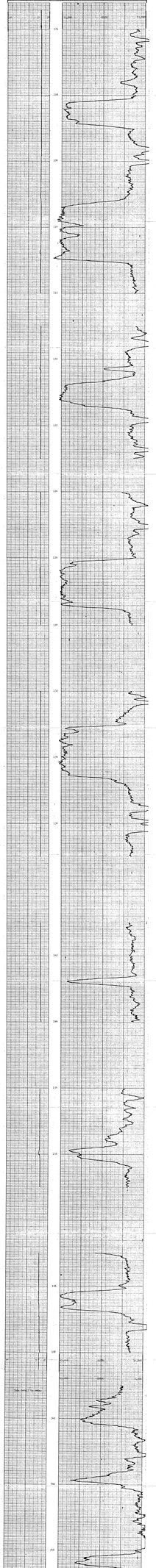
COAL QUALITY LOG

238

BPB	
SEAM THICKNESS LOG	
COMPANY	BPB
WELL	
FIELD	
COUNTY	
STATE	
LOCATION	
DATE	
RUN	
DEPTH DRILLER	
DEPTH LOGGER	
BTM 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 RMF	
SOURCE RMC	
RM @ BHT	
TIME CIRC. STOPPED	
TIME LOGGER ON BOTTOM	
MAX. REC. TEMP.	
EQUIPMENT NO.	
LOCATION	
RECORDED BY	
WITNESSED BY	

BPB SEAM THICKNESS LOG

CALIPER	DEPTH	BED RESOLUTION DENSITY
6" 12"		2.000 2.500



CALIPER	DEPTH	BED RESOLUTION DENSITY
6" 12"		2.000 2.500

BPB	
COMPANY	
WELL	AREA
FIELD	COUNTY
STATE	

SEAM THICKNESS LOG

238

Fig. Triton 1.0/1.0

BPB

SCHLUMBERGER

BOREHOLE: [illegible]

FIELD: [illegible]

AREA: [illegible]

COUNTRY: [illegible]

DATE LOGGED: [illegible]

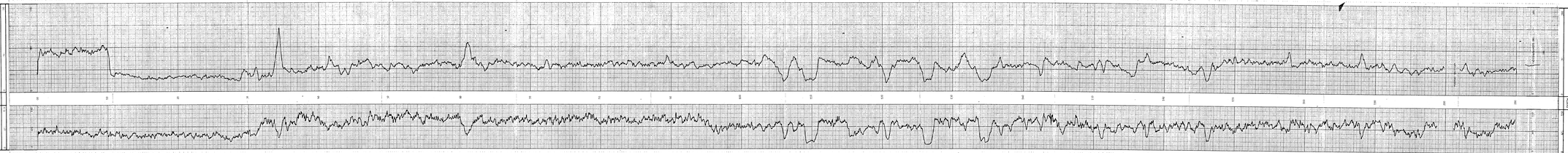
BOREHOLE DATA: [illegible]

OPERATION DATA: [illegible]

EQUIPMENT AND RECORDING DATA

Run	Depth	Speed	Time Const.	Sensitivity
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

REMARKS



BPB

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BP

PRESSURE GRADIENT LOGS

CONTRACTOR: SCHLUMBERGER

CLIENT: CONOCO (CANADA) LTD.

AREA: CONOCO

COUNTRY: CANADA

WELL LOCATION: BELLEVUE

DATE: 1-2-1980

RUN NO: 1

DEPTH: 0 (FT. METERS) 100

0 100 200

CASING SHOE

40

50

60

70

80

90

100

110

120

130

140

150

160

170

180

190

200

210

220

230

PERMEABLE SECTION

DEPTH: 0 (FT. METERS) 100

BP

BOREHOLE: 7M-23-PIP

CLIENT: Conoco North Pennsylvania Ltd.

AREA: BELLEVUE

COUNTRY: Canada

BP 0000000

238

MC SONIC LOG

FIELD	Gaspé
WELL	Gaspé Bay No. 1
COUNTY	Gaspé
PROVINCE	Quebec
COUNTRY	Canada
DATE	1-Jan-1900
DATUM	Kelly Bushing
ELEVATION	0
DATUM ELEVATION	0
DEPTH DATUM	Kelly Bushing
DEPTH DRILLED	1,000
PORTABLE DATA	
RECORDED BY	
WITNESSED BY	
DRILLING MEASURED FROM	
TIME SINCE CIRCULATION	
TIME SINCE CIRCULATION	
TIME LOGGER ON BOTTOM	
MAX. REC. TEMP.	
EQUIPMENT LOCATION	
RECORDED BY	
WITNESSED BY	

EQUIPMENT AND RECORDING DATA

SONDE No.	CENTRALIZERS SET TO				DIAMETER			
	TRANSDUCER SPACING		GENERAL DIR. OF HOL.		DATA RECORDED		DATA DISPLAYED	
	FROM	TO	APPROX.	TO WELL	APPROX.	TO WELL	FROM	TO	NOMINAL	FROM	TO	NOMINAL
CHANNEL 1	41 - No.	47	47				2100	100	5.12	2100	100	5.12
CHANNEL 2	41 - No.	47	47	Vertical			2100	100	5.12	2100	100	5.12
CHANNEL 3	41 - No.	47	47				2100	100	5.12	2100	100	5.12
CHANNEL 4	41 - No.	47	47				2100	100	5.12	2100	100	5.12

INTERVAL ZONES OMITTED WITH PRECEDING CODE: ...

PRESS. TO	INTERVAL TOTAL
PRESS. TO	

REMARKS

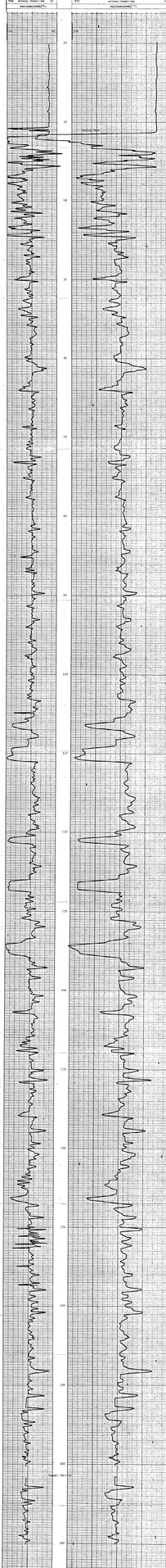
LOG OF DATA

1	2	3	4
1"	1"	1"	1"

DATA OF CHANNEL CONTAINED CONDITIONED DATA

PRE-PROCESSING DATA

CHANNEL 1	DEPTH	CHANNEL 2
TIME INTERVAL TRANSIT TIME 10	SYNC	INTERVAL TRANSIT TIME 10
MICROSECONDS(T)		MICROSECONDS(T)

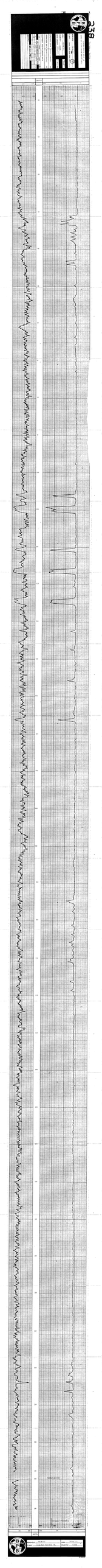


SYNC	MICROSECONDS(T) 10	DEPTH	SYNC	MICROSECONDS(T) 10
CHANNEL 1			CHANNEL 2	

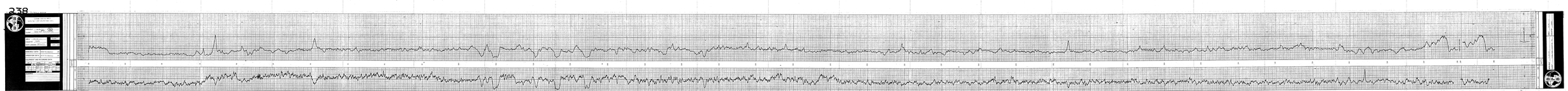
BORDEREAU No. 3-1-1-2 AREA Gaspé

CLIENT Canada Trust Transportation Ltd. COUNTRY Canada

MC SONIC LOG



238



TW-253

Directional Survey

TW-82D-253

238

LOG DEPTH	0350.00
TRUE DEPTH	0349.74
TILT	2.90 DG
BEARING	297.39 DG
NORTHING	-004.48
EASTING	-009.60

LOG DEPTH	0340.00
TRUE DEPTH	0339.75
TILT	2.97 DG
BEARING	299.89 DG
NORTHING	-004.71
EASTING	-009.19

LOG DEPTH	0330.00
TRUE DEPTH	0329.76
TILT	3.18 DG
BEARING	290.46 DG
NORTHING	-004.97
EASTING	-008.70

LOG DEPTH	0320.00
TRUE DEPTH	0319.78
TILT	2.69 DG
BEARING	309.12 DG
NORTHING	-005.16
EASTING	-008.18

LOG DEPTH	0310.00
TRUE DEPTH	0309.79
TILT	2.62 DG
BEARING	292.52 DG
NORTHING	-005.46
EASTING	-007.82

LOG DEPTH	0300.00
TRUE DEPTH	0299.80
TILT	2.97 DG
BEARING	251.20 DG
NORTHING	-005.64
EASTING	-007.40

LOG DEPTH	0290.00
TRUE DEPTH	0289.81
TILT	2.47 DG
BEARING	229.89 DG
NORTHING	-005.47
EASTING	-006.99

LOG DEPTH	0280.00
TRUE DEPTH	0279.82
TILT	2.55 DG
BEARING	237.11 DG
NORTHING	-005.19
EASTING	-006.57

LOG DEPTH	0270.00
TRUE DEPTH	0269.83
TILT	2.90 DG
BEARING	248.20 DG
NORTHING	-004.95
EASTING	-006.20

LOG DEPTH	0260.00
TRUE DEPTH	0259.84
TILT	2.83 DG
BEARING	244.16 DG
NORTHING	-004.76
EASTING	-005.75

LOG DEPTH	0250.00
TRUE DEPTH	0249.85
TILT	2.61 DG
BEARING	239.14 DG
NORTHING	-004.55
EASTING	-005.28

LOG DEPTH	0240.00
TRUE DEPTH	0239.86
TILT	2.48 DG
BEARING	235.83 DG
NORTHING	-004.31
EASTING	-004.89

LOG DEPTH	0230.00
TRUE DEPTH	0229.87
TILT	2.48 DG
BEARING	236.19 DG
NORTHING	-004.07
EASTING	-004.53

LOG DEPTH	0220.00
TRUE DEPTH	0219.88
TILT	2.40 DG
BEARING	238.43 DG
NORTHING	-003.83
EASTING	-004.17

LOG DEPTH	0210.00
TRUE DEPTH	0209.89
TILT	2.48 DG
BEARING	240.24 DG
NORTHING	-003.61
EASTING	-003.81

LOG DEPTH	0200.00
TRUE DEPTH	0199.90
TILT	2.48 DG
BEARING	228.40 DG
NORTHING	-003.39
EASTING	-003.44

LOG DEPTH	0190.00
TRUE DEPTH	0189.91
TILT	2.33 DG
BEARING	219.10 DG
NORTHING	-003.10
EASTING	-003.11

LOG DEPTH	0180.00
TRUE DEPTH	0179.92
TILT	2.61 DG
BEARING	224.70 DG
NORTHING	-002.79
EASTING	-002.86

LOG DEPTH	0170.00
TRUE DEPTH	0169.93
TILT	2.83 DG
BEARING	230.88 DG
NORTHING	-002.46
EASTING	-002.53

LOG DEPTH	0160.00
TRUE DEPTH	0159.94
TILT	2.62 DG
BEARING	229.10 DG
NORTHING	-002.15
EASTING	-002.15

LOG DEPTH	0150.00
TRUE DEPTH	0149.95
TILT	2.34 DG
BEARING	217.70 DG
NORTHING	-001.85
EASTING	-001.80

TW-82D-253

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LOG DEPTH	0140.00	
TRUE DEPTH	0139.96	
TILT	1.98	DG
BEARING	204.17	DG
NORTHING	-001.53	
EASTING	-001.55	

LOG DEPTH	0130.00	
TRUE DEPTH	0129.97	
TILT	1.84	DG
BEARING	199.78	DG
NORTHING	-001.21	
EASTING	-001.41	

LOG DEPTH	0120.00	
TRUE DEPTH	0119.98	
TILT	1.56	DG
BEARING	190.62	DG
NORTHING	-000.91	
EASTING	-001.31	

LOG DEPTH	0110.00	
TRUE DEPTH	0109.98	
TILT	1.56	DG
BEARING	195.57	DG
NORTHING	-000.64	
EASTING	-001.26	

LOG DEPTH	0100.00	
TRUE DEPTH	0099.98	
TILT	1.92	DG
BEARING	215.30	DG
NORTHING	-000.38	
EASTING	-001.18	

LOG DEPTH	0090.00	
TRUE DEPTH	0089.99	
TILT	1.64	DG
BEARING	211.24	DG
NORTHING	-000.10	
EASTING	-000.99	

LOG DEPTH	0080.00	
TRUE DEPTH	0079.99	
TILT	1.00	DG
BEARING	196.59	DG
NORTHING	+000.13	
EASTING	-000.92	

LOG DEPTH	0070.00	
TRUE DEPTH	0069.99	
TILT	.72	DG
BEARING	194.84	DG
NORTHING	+000.30	
EASTING	-000.79	

LOG DEPTH	0060.00	
TRUE DEPTH	0059.99	
TILT	1.42	DG
BEARING	238.08	DG
NORTHING	+000.42	
EASTING	-000.76	

LOG DEPTH	0050.00	
TRUE DEPTH	0049.99	
TILT	1.16	DG
BEARING	341.52	DG
NORTHING	+000.55	
EASTING	-000.55	

LOG DEPTH	0040.00	
TRUE DEPTH	0039.99	
TILT	1.44	DG
BEARING	331.97	DG
NORTHING	+000.36	
EASTING	-000.48	

LOG DEPTH	0030.00	
TRUE DEPTH	0029.99	
TILT	2.26	DG
BEARING	291.15	DG
NORTHING	+000.14	
EASTING	-000.36	

LOG DEPTH	0020.00	
TRUE DEPTH	0020.00	
TILT	1.94	DG
BEARING	319.43	DG
NORTHING	+000.00	
EASTING	+000.00	

COMPANY	CONSOLIDATION COAL CO.
WELL	BFB COAL LITHOLOGY LOG
FIELD	CALDWELL CO.
COUNTY	CALDWELL
STATE	WEST VIRGINIA
OTHER SERVICES	
SECT.	
TWP.	
RGE.	
PERMANENT DATUM	GROUND LEVEL
ELEV.	
LOG MEASURED FROM	KB
DRILLING MEASURED FROM	KB
DATE	9-8-81
RUN NO.	ONE
DEPTH-DRILLER	1000
DEPTH-LOGGER	1000
BTM. LOG INTERVAL	1000
TOP LOG INTERVAL	SURFACE
CASING-DRILLER	8 5/8 @ 20
CASING-LOGGER	
BIT SIZE	7 7/8
TYPE FLUID IN HOLE	AIR
DENSITY	
VISCOSITY	
PH	
FLUID LOSS	
SOURCE OF SAMPLE	
RM @ MEAS. TEMP.	
RMF @ MEAS. TEMP.	
RMC @ MEAS. TEMP.	
SOURCE RMF / RMC	
RM @ BHT	
MAX. REC. TEMP.	
EQUIP. LOCATION	
RECORDED BY	
WITNESSED BY	

EQUIPMENT AND RECORDING DATA

TOOL TYPE (AND SERIAL NO.)	TOOL POSITION	BOREHOLE RECORD			CASING RECORD		
		BIT SIZE	FROM	TO	SIZE	WGT.	FROM TO
		7 7/8	SURFACE	1000	8 5/8	24	SURFACE 20

238

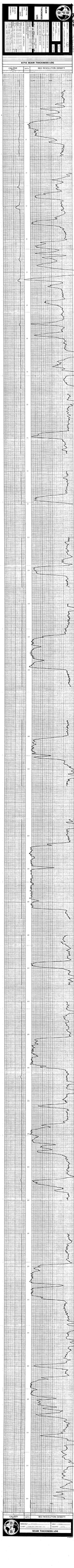
COMPANY	BP
WELL	
FIELD	
COUNTY	
STATE	
LOCATION	
API SERIAL NO.	
SECTION	
TOWNSHIP	
RANGE	
PERMANENT DATUM	GL
ELEVATION	
LOG MEASURED FROM	KB
DRILLING MEASURED FROM	KB
DATE	
RUN NO.	
DEPTH-DRILLER	
DEPTH-LOGGER	
BTM. LOG INTERVAL	
TOP LOG INTERVAL	
CASING-DRILLER	
CASING-LOGGER	
BIT SIZE	
TYPE FLUID IN HOLE	
DENSITY	
VISCOSITY	
PH	
FLUID LOSS	
SOURCE OF SAMPLE	
RM @ MEAS. TEMP.	
RMF @ MEAS. TEMP.	
RMC @ MEAS. TEMP.	
SOURCE RMF / RMC	
RM @ BHT	
MAX. REC. TEMP.	
EQUIP. LOCATION	
RECORDED BY	
WITNESSED BY	

BPB COAL QUALITY LTD

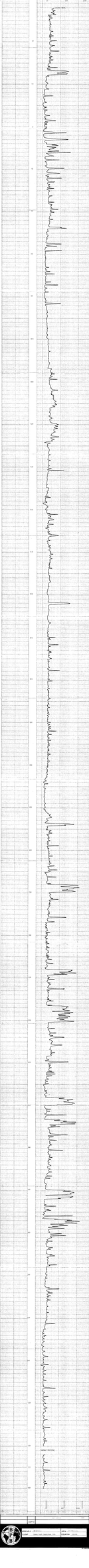
COAL MAX DENSITY

COAL MAX DENSITY

COAL QUALITY LTD


E P B SEAM THICKNESS LOG
CALGARY
MED RESOLUTION DENSITY
SEAM THICKNESS LOG

238



COMPANY	CONOCO INC.
WELL	1
FIELD	WILDCAT
COUNTY	ALLEN
STATE	KANSAS
LOCATION	1980' FSL & 1980' FEL
SEC. 16	TWP. 24 S.
RGE. 18 E.	
PERMANENT DATUM	GROUND LEVEL
ELEV.	1000'
LOG MEASURED FROM	KB
DRILLING MEASURED FROM	KB
DATE	1-2-1980
RUN NO.	ONE
DEPTH-DRILLER	1000'
DEPTH-LOGGER	1000'
BTM. LOG INTERVAL	1000'
TOP LOG INTERVAL	0'
CASING-DRILLER	8 5/8" @ 0'
CASING-LOGGER	8 5/8" @ 0'
BIT SIZE	7 7/8"
TYPE FLUID IN HOLE	FRESH WATER
DENSITY	8.4
VISCOSITY	28
PH	7.0
FLUID LOSS	8.0
SOURCE OF SAMPLE	PIT
RM @ MEAS. TEMP.	.25 @ 70°
RMF @ MEAS. TEMP.	.25 @ 70°
RMC @ MEAS. TEMP.	.25 @ 70°
SOURCE RMF & RMC	MEASURED
RM @ BHT	.25 @ 100°
TIME SINCE CIRC.	6 HRS.
TIME LOGGER ON BOTTOM	8:00 A.M.
MAX. REC. TEMP.	100°
EQUIPMENT NO.	1
LOCATION	HAYS
RECORDED BY	R. SCHMIDT
WITNESSED BY	MR. BOWMAN

CALIBRATION AND RECORDING DATA

SONDE NO.	CALIBRATOR	CALIBRATING UNIT NO.		CABLE TYPE	

TW-254

23B

COMPANY	CONSOLIDATED COAL CO.
WELL	DRILL HOLE NO. 23
FIELD	
COUNTY	MONONGALIA
STATE	WEST VIRGINIA
LOCATION	
ELEVATION	
DATE	1-8-74
RUN NO.	ONE
DRILLER	
TOTAL DEPTH	1
CASING	
BIT	
MUD	
RIGS	
OPERATOR	
RECORDED BY	
WITNESSED BY	

EQUIPMENT AND RECORDING DATA

TOOL																			

238

BPB

COAL QUALITY LOG

BORE NO. 238
COORDINATES
DATE LOGGED

DRILLING CO.
DRILLER
DRILL RIG

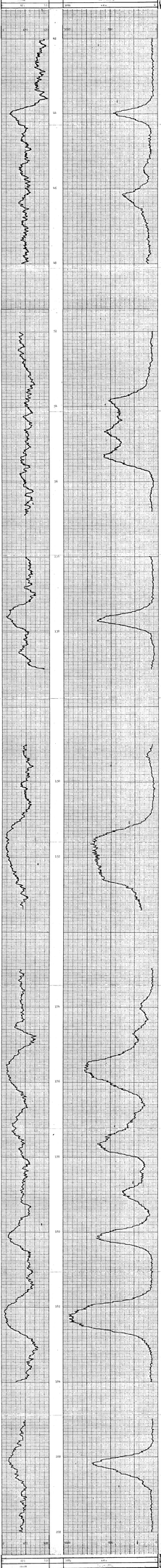
CONTRACTOR DATA
DRILLING METHOD
CORING METHOD
CORE DIAMETER
CORE RECOVERY

CONTRACTOR DATA
DRILLING METHOD
CORING METHOD
CORE DIAMETER
CORE RECOVERY

CORE QUALITY - GEO. INTERVALS
CORE QUALITY - GEO. INTERVALS

BORE SITE
COORDINATES
DATUM
LOGGING NO.
& SERVICE

BPB COAL QUALITY LOG



BPB

GEOLOGIST: J. Bush
CLIENT: Zimbabwe Coal Mines of the U.S.A.
AREA: Lowveld
COUNTRY: Zimbabwe

COAL QUALITY LOG

238

BPB

SEAM THICKNESS LOG

BOREHOLE DATA	
DRILLER'S DEPTH	
LOGGER'S DEPTH	
CASING DATA	
BOREHOLE FLUID	
MAX. RECORDED TEMP.	
RUN NUMBER	
TIME SINCE CIRCULATION	
LOGGING DATE	
RECORDED BY	
WITNESSED BY	

CONTRACTOR	
LOCATION	
COUNTY	
STATE	
API SERIAL NO.	

FIELD	
COUNTY	
STATE	
LOCATION	
WELL	
COMPANY	

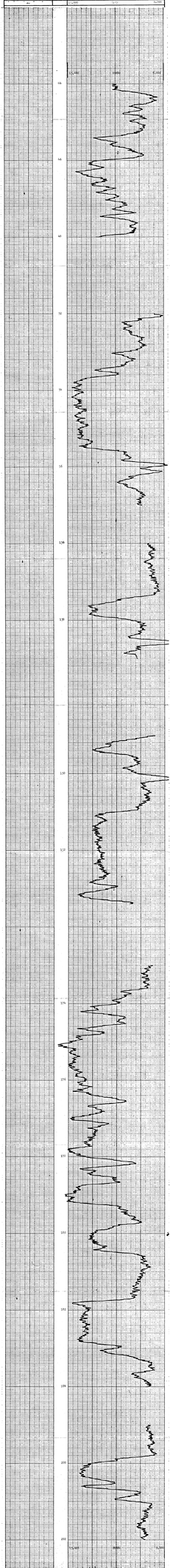
SEC.	
TWP.	
RGE.	
OTHER SERVICES	

PERMANENT DATUM	
ELEVATION	
LOG MEASURED FROM	
DRILLING MEASURED FROM	

DATE	
RUN NO.	
DEPTH-DRILLER	
DEPTH-LOGGER	
BTM. 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 RMF / RMC	
RM @ BHT	
TIME CIRCULATION STOPPED	
TIME LOGGER ON BOTTOM	
MAX. REC. TEMP.	
EQUIPMENT NO.	
LOCATION	
RECORDED BY	
WITNESSED BY	

B P B SEAM THICKNESS LOG

CALIPER (INCHES)	DEPTH	BED RESOLUTION DENSITY
6 — 16		1.1 g/cc — 2.7 g/cc — 3.2 g/cc



CALIPER	DEPTH	BED RESOLUTION DENSITY
6 — 16		1.1g/cc — 2.6g/cc — 3.2g/cc

BPB

BOREHOLE: [illegible]
CLIENT: [illegible]
AREA: [illegible]
COUNTY: [illegible]

SEAM THICKNESS LOG

BPB-SEAM-1

2338

BPB INSTRUMENTS

Date	1-Jan-1900
Time	00:00:00
Depth	0.0 m
Speed	0.0 m/min
Tension	0.0 kg
Cable Length	0.0 m
Cable Type	
Cable Number	
Cable Head	
Cable Length

TW 255

238

COAL BED LITHOLOGY LOG

BPB INSTRUMENTS (UNITED KINGDOM) LIMITED

| | | |

BPB

COAL QUALITY LOG

BORE TYPE: CORE
DIAMOND
CORING BIT
CORING BAR
L.S. CONVERT

238

BORE HOLE DATA
DATE: 1-1-1900
TIME: 0:00
DEPTH: 0.00
CASING: 0.00
DRILLER: 0.00
LOGGER: 0.00
BIT: 0.00

CORRECTION DATA
CORRECTION DATA SHOWN IN CORRELATION

COMPACT AND RECORDING DATA
DATE: 1-1-1900
TIME: 0:00
DEPTH: 0.00
CASING: 0.00
DRILLER: 0.00
LOGGER: 0.00
BIT: 0.00

BORE HOLE

BPB

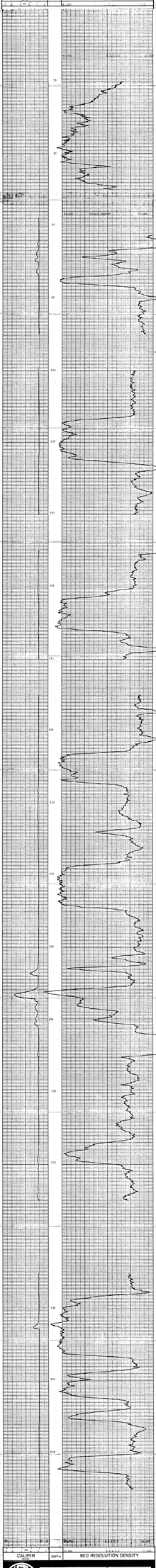
SEAM THICKNESS LOG

BOREHOLE	
CLIENT	
AREA	
COUNTY	
DATE	
RUN	
DEPTH	
DRILLER	
LOGGER	
BIT	
MUD	
RM	
RMF	
RMC	
RM @ BHT	
MAX. REC. TEMP.	
EQUIPMENT	
RECORDED BY	
WITNESSED BY	

238

B P B SEAM THICKNESS LOG

CALIPER	DEPTH	BED RESOLUTION DENSITY
6" 16"	1:200	1.8 2.6

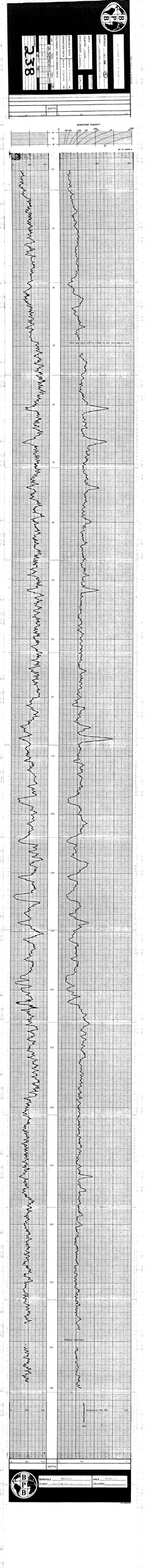


CALIPER	DEPTH	BED RESOLUTION DENSITY
6" 16"	1:200	1.8 2.6

BPB

BOREHOLE: [illegible]
CLIENT: Home Gas Resources Ltd.
AREA: [illegible]
COUNTY: [illegible]

SEAM THICKNESS LOG


BP
DATE
COMPANY
WELL
FIELD
COUNTY
STATE
PERMANENT DATUM
ELEVATION
LOG MEASURED FROM
DRILLING MEASURED FROM
238
DEPTH
SANDSTONE POROSITY
THIS TRACE MUST NOT BE STRETCHED OR SHRUNK
DEPTH
BP
BOROUGH
FIELD
WELL
AREA
COUNTRY
CLIENT

BPB

PROGRESS REPORT NO.

APPROVAL: DATE: 25-5-85 (5)

CLIENT: Cities Service Canada

BOREHOLE: TWS-85-25

DATE LOGGED: 25/05/85

AREA: Tatlow S.C.

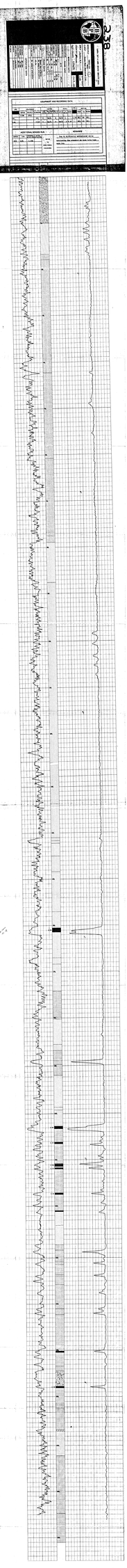
COUNTRY: Canada

PROJECT DATA: Well & Structure

OPERATION DATA: Well & Structure

EQUIPMENT AND RECORDING DATA

TW 256


2 of 3
EQUIPMENT AND RECORDING DATA
ADDITIONAL SENSOR RUN
REMARKS
LIME MUDSTONE
SHALY SILT
SILTY SHALE
SILTSTONE
SANDSTONE (FINE)
SANDSTONE (COARSE)
CONGLOMERATE
CHERT
COAL
LAMINATED SHALE
SHALE
CLAYSTONE
SANDSTONE (MEDIUM)
SANDSTONE (CONG)
DOLOSTONE

BPB

COAL QUALITY LOG

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COAL QUALITY LOG

CONSULT BPB INSTRUMENTS (UK) LTD. FOR INTERPRETATION

COMPANY

WELL

FIELD

COUNTY

STATE

BPB COAL QUALITY LOG

DATE

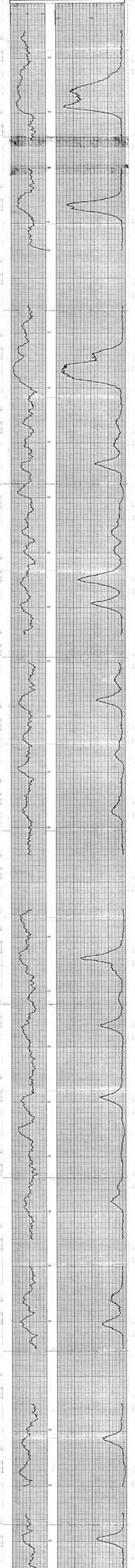
GAMMA RAY

COAL BULK DENSITY

DATE RUN

0	50	1.1	1.7

GRAM CML



DATA NO

COAL BULK DENSITY

BPB

BOROUGH

AREA

CLIENT

COUNTRY

COAL QUALITY LOG

238

BPB INSTRUMENTS

DATE
RUN NO.
DEPTH DRILLER
DEPTH LOGGER
BTM LOG INTERVAL
TOP LOG INTERVAL
CASING DRILLER
CASING LOGGER
BIT SIZE
TYPE FLUID IN HOLE
DENSITY
VISCOSITY
PH
FLUID LEVEL
MAX REC. TEMP.
EQUIP. LOCATION
RECORDED BY
WITNESSED BY

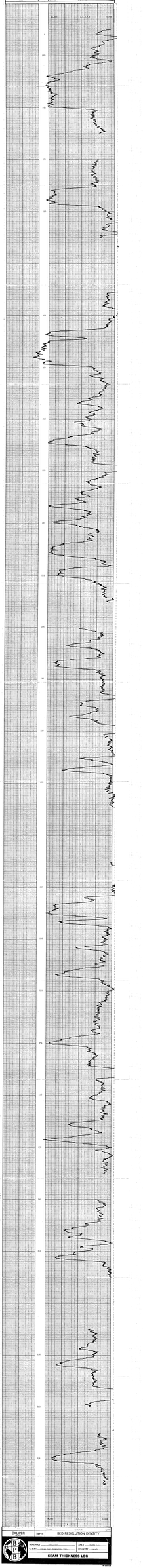
TOOL NUMBER
TOOL POSITION
EXCENTRALIZER
LOGGING SPEED
TIME SINCE CIRCULATION
TIME SINCE BOTTOM

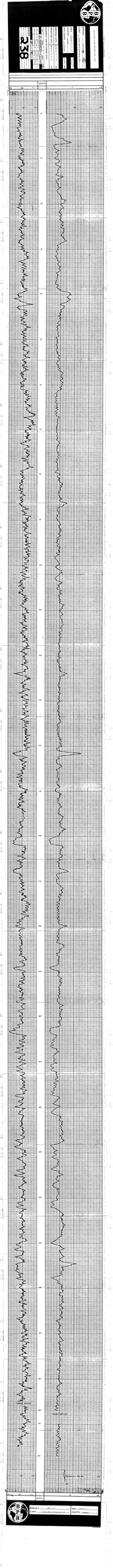
BRIDGES
TIGHT SPOTS
REMARKS

COMPANY
WELL
FIELD
COUNTY
STATE

B P B SEAM THICKNESS LOG

CALIPER | DEPTH | BED RESOLUTION DENSITY




2398
DEPTH
DEPTH

238

BPB INSTRUMENTS (UK) LTD.

GAMMA RAY & CALIPER GRAPHIC DENSITY LOGS.

BOREHOLE : DH20-22
CLIENT : Cyprus Bank Resources Ltd.
AREA : Lakeview B.C.
COUNTRY : Canada
DATE LOGGED : 15-Jul-1991

DIP TEST
DIP 90

EQUIPMENT AND RECORDING DATA

LOG	EQUIPMENT: SONDE	EQUIPMENT: SOURCE	CALIBRATOR	TAPING: LOG DATA	TAPING: PRESENTATION DATA	TAPING: DIRECTION DATA	PANEL: SPEED	PANEL: T.C. BASE	PANEL: NORM	CAL. (CPS):	DEPTHS: FROM	DEPTHS: TO	DEPTHS: INTERVAL
	1139	9921											
GR	"	347	Y	96/4	D	96/4	1	'		1.82	73	00	73
LID	"	0336	Y	96/4	D	96/4	.3	7.22		'	73	00	73

MEASUREMENT POINT	G.L.
ELEVATION OF M.P.	
ELEVATION OF G.L.	Ground Level
BOREHOLE DATA	
DATE	
DRILLER'S DEPTH	73.00m
CASING SIZE	76mm
CASING DEPTH	0.00m
FLUID DATA	
FLUID LEVEL	Dry
FLUID TYPE	Water
TEMPERATURE	5.5 °C
PH	7.0
RESISTIVITY	10 Ωm
OPERATION DATA	
OPERATOR	Dr. Morris Anderson
LOGGING ENGINEER	Dr. Morris Anderson
LOG DATE	15-Jul-1991
LOG TIME	10:00
REMARKS	

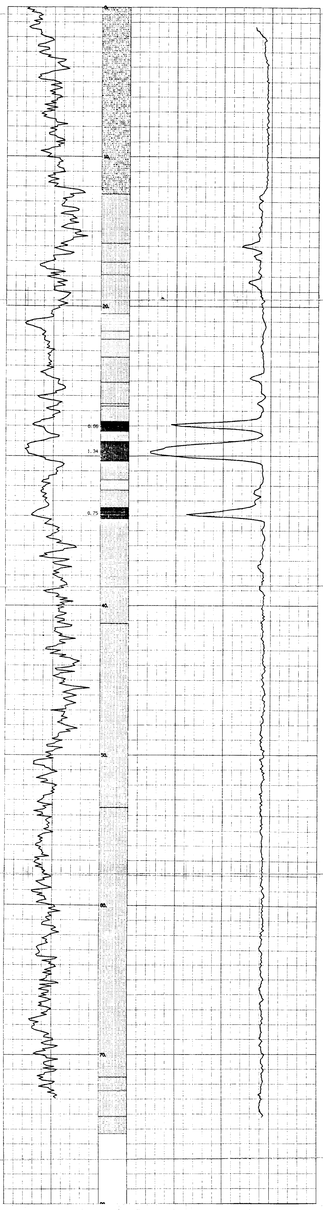
ADDITIONAL SONDES RUN

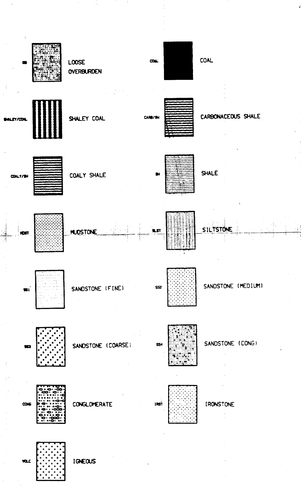
SONDE	LOG	GENERAL SCALE (CM/M)	20 MM SCALE (CM/M)
226	N/A	1:100	
216	N/A	1:100	

REFER TO ADDITIONAL HEADINGS

REMARKS

Hole blocked off after first open hole run so further open hole logs were attempted.





Tk-Telkwa 82(3)A

BOREHOLE TW82D-257 (2)

CLIENT Crows Nest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

DATE LOGGED 1/Sep/82

DEPTH SCALE 1:20

1 OF 1 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				LOG COUNTS
	LOG TAPES	RECORDING SPEED	DIRECT REPLAY	SPEED	T.C. SECS.	NORM		
GAMMA RAY	Y	2m/m	R	2m/m	2	'		1.82
L.S. DENSITY	Y	2m/m	R	2m/m	.3	7.22		"

SONDE TYPE COAL COMBINATION SONDE

SOURCE SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

LOG SUITE: GAMMA RAY L.S. DENSITY

COAL QUALITY LOG INTERVALS

FROM	35.0m
TO	22.0m
INTERVAL	12.0m
FROM	
TO	
INTERVAL	

INTERVAL TOTAL 13

REMARKS

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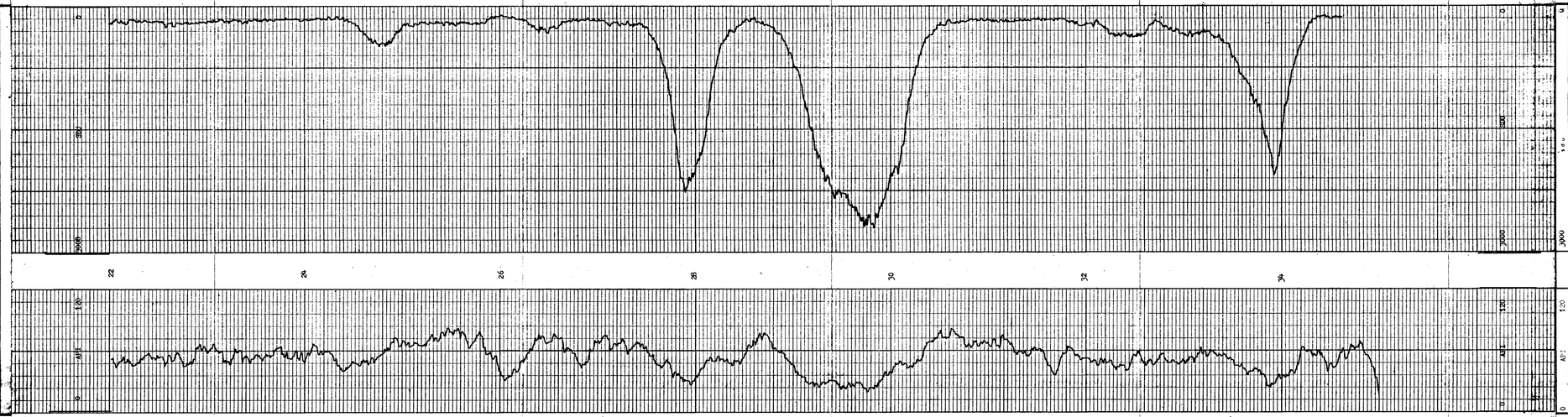
B P B COAL QUALITY LOG



AREA Telkwa B.C.

COUNTRY Canada

BOREHOLE TW82D-257

CLIENT Crows Nest Resources Ltd.

COAL QUALITY LOG

MY 83003 B

TK-Telkwa B2(3)A

BOREHOLE TW82D-257 (3)

CLIENT Crows Nest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

DATE LOGGED 1/Sep/82

DEPTH SCALE 1:20

1 OF 2 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			CHART CODES
	LOG TAPE	PRINT SPEED	DEFLECT DELAY		SPEED	SEPS	NORM	
CALIPER								
B.R.DENSITY	Y	2m/m	H		2m/m	.3	7.25	

SOURCE SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG INTERVALS

FROM	3.0m		
TO	2.0m		
INTERVAL	1.0m		
FROM			INTERVAL TOTAL
TO			
INTERVAL			13

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REMARKS

Caliper not played out as hole was logged through rods.

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: CALIPER B.R. DENSITY

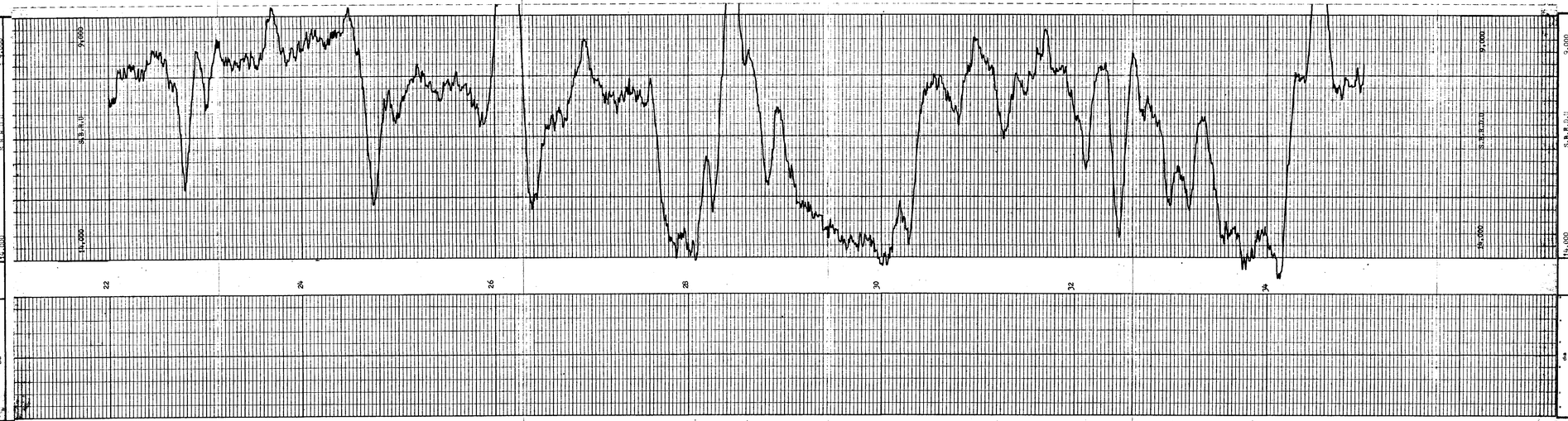
B P B SEAM THICKNESS LOG

BED RESOLUTION DENSITY

S.B.R.D.27

DEPTH

CALIPER



BED RESOLUTION DENSITY

S.B.R.D.27

DEPTH

CALIPER

BOREHOLE TW82D-257

CLIENT Crows Nest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

SEAM THICKNESS LOG

TK-Telkwa 82(3)A

GAMMA RAY & NEUTRON/NEUTRON LOGS.

BOREHOLE TW82-257 (4)

CLIENT Crown Nest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

DATE LOGGED 1/Sep/82

DEPTH SCALE 1:100

4 OF 5 LOGS

BOREHOLE DATA	REFER TO GR & LSD	LOG
OPERATION DATA	REFER TO GR & LSD	LOG

EQUIPMENT AND RECORDING DATA

LOG	LOG TAPED	TAPING RECORDER SPEED	RECORDER REPLAY	PANEL SPEED	PANEL REPLAY	PANEL S/C	NORM	CAL COEFF
GR	Y	9m/m	R	9m/m	1	•		1.82
N/N	Y	9m/m	R	9m/m	1	.792		•

POWER ON 21:40 HOURS OFF 22:00

REMARKS

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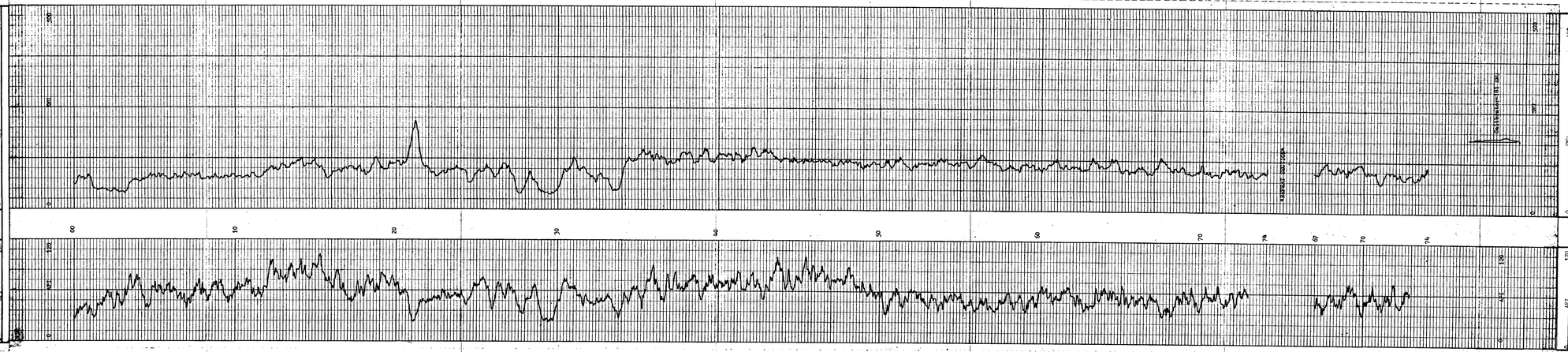

AREA Telkwa B.C.

COUNTRY Canada

BOREHOLE TW82-257

CLIENT Crown Nest Resources Ltd.

PROCESSED BY BPB LTD.

BOREHOLE BPB2-237 (5)

CLIENT Crow Nest Resources Ltd.

AREA Telkwa S.D.

COUNTRY Canada

DATE LOGGED 1/Sept/2

1:20 1:200

TK-Telkwa 6/13/A

BOREHOLE DATA	MEIERTO GR & LSD LOG
OPERATION DATA	MEIERTO GR & LSD LOG
EQUIPMENT AND RECORDING DATA	
LOG	1000 MEIERTO GR & LSD LOG
	1/2" 1/2" 1/2"
	1/2" 1/2" 1/2"
	1/2" 1/2" 1/2"

TW 258

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BPB INSTRUMENTS (UK) LIMITED

COAL LITHOLOGY LOG

BOREHOLE NO. 6

BOREHOLE LOCATION	SHAFT
DATE	1/3/84
DRILLING CONTRACTOR	BOREMAN
DRILLING FLUID	
DRILLER	
LOGGED BY	
DATE	1/3/84
CLIENT	NCB
CONTRACT	
REMARKS	

DATE	1/3/84	TIME	
DEPTH			
CASING			
BIT			
MUD			
MUD WT.			
VISCOSITY			
PH			
FLUID LOSS			
MUD TEMP.			
MAX. TEMP.			
RIG			
PUMP			
STROKE			
PRESSURE			
MAX. PRESSURE			
MAX. DEPTH			
MAX. TEMP.			
MAX. PRESSURE			

EQUIPMENT AND RECORDING DATA

COAL CONNECTION SONDE

UNIT	EQUIPMENT SERIAL	SCALE	SUBMODE	GAINS COAL	GAINS ROCK	PANEL SETTING	SCALE	SUPPR.	TC SCALE	TC SUPPR.	DEPTH TRACK	SCAN DIR. RUN	DEPTH TRACK	SCAN DIR. RUN
GAMMA			262	1	1x/s	2	1x/s	1	0.01	*	115	05	115	
DENSITY			2135	1	1x/s	2	1x/s	1	0.01	1000	115	05	115	
CALIPER			17" - 8"	1	1x/s	2	1x/s	1	*	*	115	05	115	

COAL SONDE CALIBRATION FOR CHECKS ONLY, NOT INTERVALS, PRIOR TO, DURING, POST RUN

| | | |

BPB

COAL QUALITY LOG

COMPANY: BP RESOURCES CANADA LTD.

WELL: CONOCO ET AL BURNT RIVER 6-36-47-17 W5M

FIELD: BURNT RIVER

COUNTY: PARKLAND

PROVINCE: ALBERTA

COORDINATES: 6-36-47-17 W5M

LOCATION: 1980 FSL & 1980 FEL

ELEVATION: KB 1000.0 m

DATE: 1-Jan-1900

RUN: 1

DATE: 1-Jan-1900

DEPTH: 238.0 m

DRILLER: 238.0 m

LOGGER: 238.0 m

BOTTOM INTERVAL: 238.0 m

TOP INTERVAL: 0.0 m

CASING: 244.5 mm @ 0.0 m

TYPE FLUID: AIR

DENSITY: n/a

VISCOSITY: n/a

PH: n/a

FLUID LEVEL: n/a

MAX. REC. TEMP.: n/a

EQUIPMENT: 5 MILE

LOGGED BY: CREW

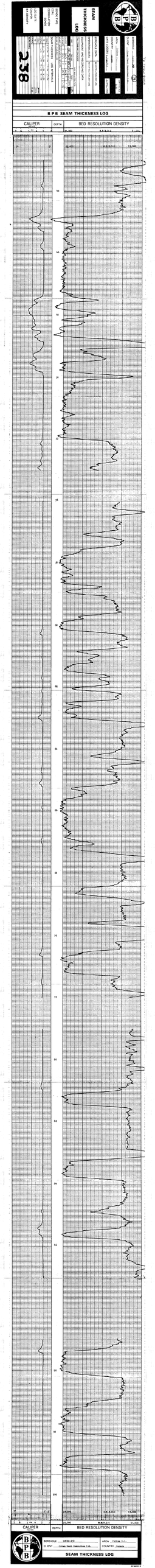
WITNESSED BY: CREW

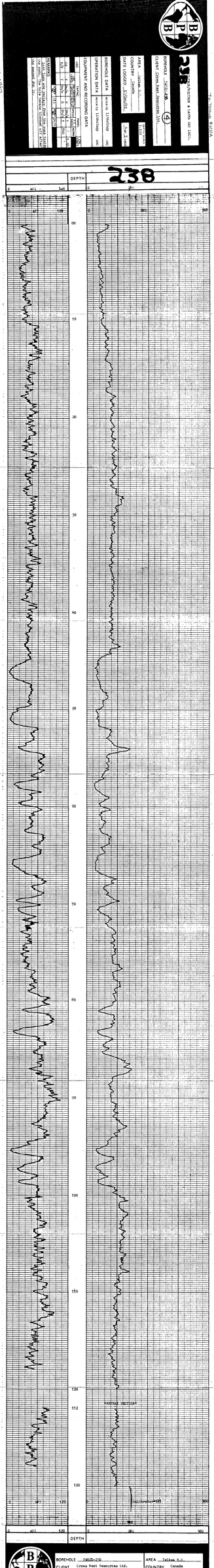
BPB COAL QUALITY LOG

CURVE: RAT — COAL BULK DENSITY

HOLE SIZE CORRECTION DATA

| | | |


SEAM THICKNESS LOG
BPB SEAM THICKNESS LOG
CALIPER
DEPTH
BED RESOLUTION DENSITY
BOREHOLE
CLIENT
AREA
COUNTRY
SEAM THICKNESS LOG


BPB
JRS
THERMOFLECTION & GAMMA RAY LOGS
BOREHOLE TWGD-250
CLIENT Crows Nest Resources Ltd.
AREA Telkwa
COUNTRY Canada
DATE LOGGED 27/04/82
TOP 0.00m
BOTTOM 238.00m
DEPTH
238
0 AFI 120
0 200 500
00
10
20
30
40
50
60
70
80
90
100
110
120
112
120
0 AFI 120
0 200 500
BOREHOLE TWGD-250
CLIENT Crows Nest Resources Ltd.
AREA Telkwa B.C.
COUNTRY Canada

BPB

PROCESSED GEOTECHNICAL DATA

BOREHOLE IWD-28
CLIENT Crows Nest Resources Ltd.
AREA Yukon T.O.
COUNTRY Canada
DATE LOGGED 1/24/85
DATE PROCESSED 1/25/85

BOREHOLE DATA WATER TO 1.00M/SEC 100
OPERATION DATA WATER TO 1.00M/SEC 100
EQUIPMENT AND RECORDING DATA
100 PROBE/SENSOR TYPE
1/1 Mag. Dec. 1/1 Mag. Dec.
1/1 Mag. Dec. 1/1 Mag. Dec.
100 RECORDER TYPE
1/1 Mag. Dec. 1/1 Mag. Dec.
1/1 Mag. Dec. 1/1 Mag. Dec.
REMARKS

238

Tekslinton Falls

DEPTH

1 OHM MO/MET 4000

20 200 2000

WATER LEVEL

20

30

40

50

60

70

80

90

100

110

120

112

120

"REPEAT SECTION"

DEPTH

1 OHM METHRS 4000

20 200 2000

BPB

BOREHOLE IWD-28-236
CLIENT Crows Nest Resources Ltd.
AREA Yukon T.O.
COUNTRY Canada

TW 259

Directional survey

TK-Teikuu 82/35A

TW-36D-259

238

LOG DEPTH	0080.00	
TRUE DEPTH	0079.94	
TILT	2.34	DG
BEARING	186.45	DG
NORTHING	-002.68	
EASTING	-000.40	
LOG DEPTH	0070.00	
TRUE DEPTH	0069.95	
TILT	1.72	DG
BEARING	198.16	DG
NORTHING	-002.27	
EASTING	-000.35	
LOG DEPTH	0060.00	
TRUE DEPTH	0059.95	
TILT	2.16	DG
BEARING	192.90	DG
NORTHING	-001.98	
EASTING	-000.26	
LOG DEPTH	0050.00	
TRUE DEPTH	0049.96	
TILT	2.36	DG
BEARING	171.92	DG
NORTHING	-001.62	
EASTING	-000.18	
LOG DEPTH	0040.00	
TRUE DEPTH	0039.97	
TILT	2.55	DG
BEARING	181.27	DG
NORTHING	-001.21	
EASTING	-000.23	
LOG DEPTH	0030.00	
TRUE DEPTH	0029.98	
TILT	2.56	DG
BEARING	188.43	DG
NORTHING	-000.76	
EASTING	-000.22	
LOG DEPTH	0020.00	
TRUE DEPTH	0019.99	
TILT	2.08	DG
BEARING	206.88	DG
NORTHING	-000.32	
EASTING	-000.16	
LOG DEPTH	0010.00	
TRUE DEPTH	0010.00	
TILT	2.00	DG
BEARING	248.81	DG
NORTHING	+000.00	
EASTING	+000.00	

238

COAL LITHOLOGY LOG

BPB

AREA	SOUTHERN N.S.
WELL	SOUTHERN NORTHUMBERLAND 1
DATE	1.11.90
LOG NO.	0001
DATUM	0.0 m. A.M.D.
SURVEY	1
DATE	1.11.90
LOG NO.	0001
DATUM	0.0 m. A.M.D.
SURVEY	1

COMPANY	BP COAL
COMPANY	BP COAL
WELL	SOUTHERN NORTHUMBERLAND 1
WELL	SOUTHERN NORTHUMBERLAND 1
FIELD	
FIELD	
LOCATION	
LOCATION	
COUNTY	
COUNTY	
STATE	
STATE	
COORD.	
COORD.	
ELEV.	
ELEV.	
DATUM	
DATUM	
DATE	
DATE	
RUN NO.	
RUN NO.	
DEPTH	
DEPTH	
DRILLER	
DRILLER	
LOGGER	
LOGGER	
BIT	
BIT	
MUD	
MUD	
RM	
RM	
RMF	
RMF	
RMC	
RMC	
BHT	
BHT	
TIME	
TIME	
OPERATOR	
OPERATOR	
WITNESS	
WITNESS	

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

	EQUIPMENT				DEPTH								DEPTH			
					LOG											
	SONDE	SOURCE	X-RAYMAX		LOG	DEPTH	TIME									
COAL COMBINATION	1119	1018														
		1119	321	1	0m/s	1	0m/s	1	-	0.00	0%	00	0%			
			1026	1	0m/s	1	0m/s	1	3.70	-	0%	00	0%			

COAL COMBINATION SONDE THICKNESS LOG, INTERVALS, RUNS & DEPTHS (M)

RUN	35.00m	30.0m	25.0m	20.0m	
1A	35.00m	30.0m	27.0m	5.0m	
INTERVAL	5.0m	6.0m	5.0m	5.0m	

INTERVAL TOTAL 21.0m

ADDITIONAL SONDES RUN

SONDE	LOG	DEPTHS	DETAILS
214	K/N	5.0/00	
206	K/N	5.0/00	
303	S.C.S	5.0/00	
212	Temp.	0/00	

NEED TO ADDITIONAL SONDES

REMARKS

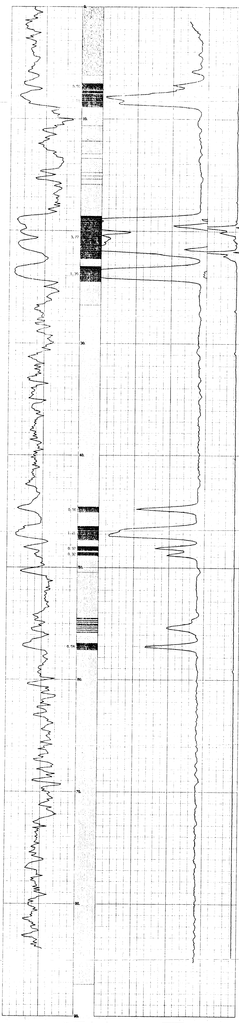
BPB COAL LITHOLOGY LOG

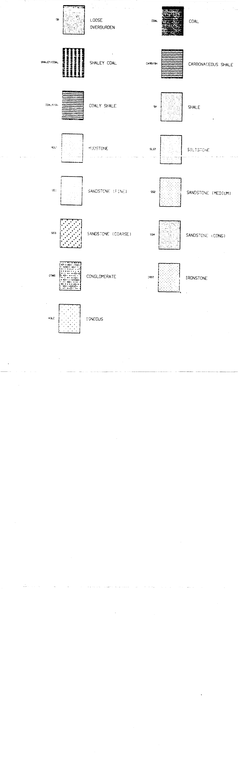
CALIBRATION DATA

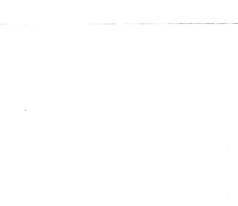
G.N. 301	MV/API 2.2000	G.N. 1.0	MV/API 2.1000	2.10	2.10
B. NAME SHOWN AT MEAN VALUE - 1.1		B. N. 0138	0000	0000	27.7500

GAMMA RAY	DEPTH	BULK DENSITY	CALIPER
			INCHES

HOLE SIZE CORRECTION DATA







BPB

COAL QUALITY LOG

BOREHOLE: TW2D-218
CLIENT: Crows Nest Resources Ltd.
COUNTRY: Canada
DATE LOGGED: 7-Aug-87
RUN: 1
DATE: 8-Aug-87

BOREHOLE DATA
DRILL: Boyles Bros. Diamond Drilling
DIP: -90°
AZIMUTH: 0°
COORDINATES: 0 N 0 E
ELEVATION: 0 m

OPERATOR DATA
OPERATOR: Rick Stevenson
TECHNICIAN: Rick Stevenson

FIELD CALIBRATION DATA
DATE: 8-Aug-87
COAL QUALITY: 1.5 g/cm³
LOG INTERVALS: 1.0 m
COAL DENSITY: 1.5 g/cm³
LOG INTERVALS: 1.0 m
DATE: 8-Aug-87
COAL QUALITY: 1.5 g/cm³
LOG INTERVALS: 1.0 m
COAL DENSITY: 1.5 g/cm³
LOG INTERVALS: 1.0 m

LOG RUN
TOOL: 2.5" GAMMA RAY
TOOL: 2.5" GAMMA RAY
TOOL: 2.5" GAMMA RAY

BPB

SEAM THICKNESS LOG

BOREHOLE Twin-229
CLIENT Crown Bear Resources Ltd.
AREA Yellow Jr.
COUNTRY Canada
DATE LOGGED
RECORDED BY
WITNESSED BY

BOREHOLE DATA
BIT SIZE 9.875 in. (250.00) mm
OPERATION DATA
MUD TYPE (DENSITY) (VISC)
EQUIPMENT AND RECORDING DATA
LOG TYPE CONVERSION SONDE
RECORDING UNIT
LOGGING ENGINEER
WITNESS

LOG TYPE CONVERSION SONDE

LOG SUITE CALIPER BED DENSITY

SEAM THICKNESS - LOG INTERVALS

BPB

BOREHOLE TW(2)-259 (4)
CLIENT Crows Nest Resources Ltd.

AREA Elkwa
COUNTRY Canada
DATE LOGGED 1/Dec/2

BOREHOLE DATA RUN NO. 1 (Logging) LOG
OPERATION DATA RUN NO. 1 (Logging) LOG
EQUIPMENT AND RECORDING DATA

LOG	TOOL	SERIAL NO.	DETECTOR	SCALE	SCALE
GR	Y	2C/4	1	1	1:50
		2C/4	1	1	1:50
		2C/4	1	1	1:50

REMARKS 238

DEPTH

0 API 150 | 0 | 20 | 40

SANDSTONE POROSITY

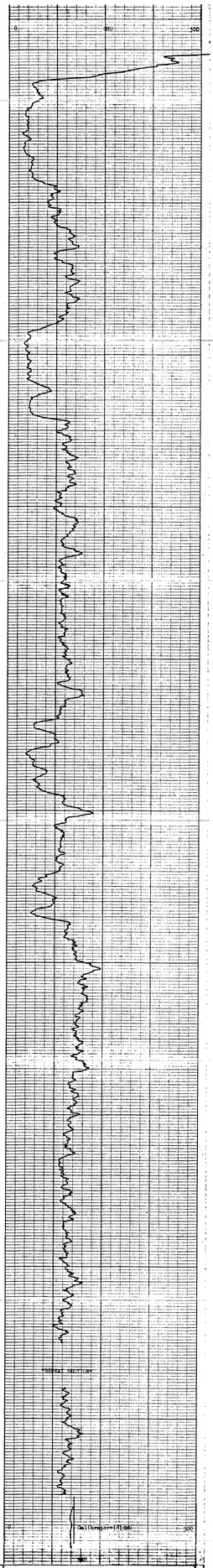
0 | 50% 40% | 30% | 25% | 20% | 15% | 10% | 5% | 500

4"
6"
8"

MY (3) A38451 E

0 API 150 | 00 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 85 | 75 | 80 | 85

0 SNU 500



0 API 150 | DEPTH | 0 SNU 500

BPB

BOREHOLE TW(2)-259
CLIENT Crows Nest Resources Ltd.

AREA Elkwa
COUNTRY Canada

MY 3242338

Tk-Telkwa 6-9/A

PROFESSIONAL WELL LOGS

BOREHOLE 74G21-259 (S)

CLIENT Crows Nest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

DATE LOGGED 1/Sept/2

SCALE FACTOR 1:1000

Log E. Lobb

BOREHOLE DATA	Refer to Lithology	LOG
OPERATION DATA	Refer to Lithology	LOG

EQUIPMENT AND RECORDING DATA

LOG	TYPING	PANEL	NOTES
	Fmt. Switch	Chart Speed	
FT	1	20/1	1
M	10	2/1	10

REMARKS 238

DEPTH

OHM METRES

20 200 2000

CASING SHOE

10

20

40

50

60

70

80

85

76

REPEAT SECTION

80

85

5 OHM METRES 5,000

DEPTH

BOREHOLE 74G21-259

CLIENT Crows Nest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

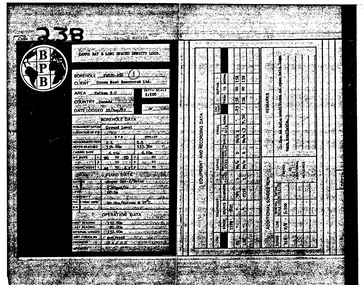
MULTI-CHANNEL SONIC LOG

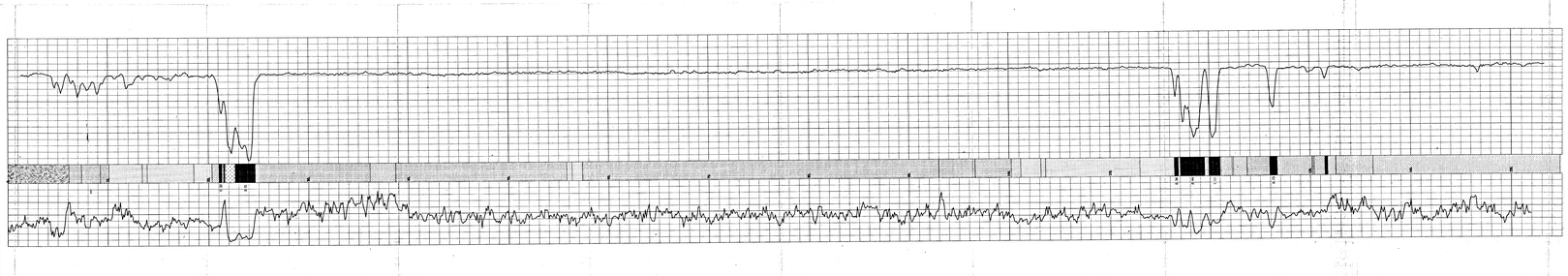
BOREHOLE: FALCO-09
CLIENT: CROWS NEST RESOURCES LTD.
AREA: SELWYN BASIN
COUNTRY: CANADA
DATE LOGGED: 27-JUL-93
1 OF 1 SONDE
DEPTHCHART: 1:1200
TO: SELWYN BASIN

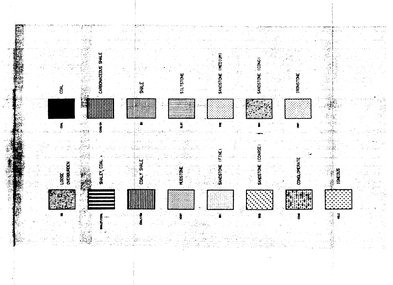
BOREHOLE DATA

TOWNSHIP DATA	TOWNSHIP	RANGE	SECTION
LOCATION DATA	LATITUDE	LONGITUDE	
DATUM DATA	DATUM	ELEVATION	
CASING DATA	SIZE	WEIGHT	GRADE
DRILLING DATA	DRILLING COMPANY	RIG	
DATES	SPUD	TD	
DEPTHS	DRILLER TD	LOGGER TD	
FLUID DATA	FLUID TYPE	DENSITY	VISCOSITY
	PH	FLUID LOSS	
RMF	RMFS	RMC	
RM	RMS	RMC	
RMF	RMFS	RMC	
MAXIMUM RECORDED TEMPERATURES	BHT		

TW 260


238
BPB
GEOLOGY AND RECORDING DATA
DRILLING DATA
WELL DATA
DRILLING FLUID DATA
CORE DATA
DRILL STEM TEST DATA
REMARKS




COAL
CARBONACEOUS SHALE
SHALE
ELUTRIATE
SANDSTONE MEDIUM
SANDSTONE COARSE
CONGLOMERATE
CORE DAMAGED
SHALE, COAL
SANDY SHALE
MUDSTONE
MUDSTONE (FINE)
MUDSTONE (COARSE)
CONGLOMERATE
BRECCIA

BPB

BOREHOLE: 4-12-260 (2)
CLIENT: Crows Nest Resources Ltd.
AREA: Nelson B.C.
COUNTRY: Canada
DATE LOGGED: 1/10/92
DEPTHS: 1.5 to 34.00

COAL QUALITY LOG

SONDE TYPE: COAL QUALITY COMBINATION SONDE

LOG SUITE: GAMMA RAY L.S. DENSITY

REMARKS: 238

BPB COAL QUALITY LOG

GAMMA RAY API 0 120

COAL BULK DENSITY g/cm³ 2000 2500 0

20 22 24 26 116 118 120 122 126 128 130 132

COAL BULK DENSITY g/cm³

BOREHOLE 4-12-260 | AREA Nelson B.C.
CLIENT Crows Nest Resources Ltd. | COUNTRY Canada

COAL QUALITY LOG

"A" Seam Section

BPB

BOREHOLE TW2D-200 (2)
CLIENT Crows Nest Resources Ltd.
AREA Tulsa S.D.
COUNTRY Canada
DATE LOGGED 1-Jan-86
SPECTRUM 1:50
DEPTH SCALE 1:200

SEAM THICKNESS LOG

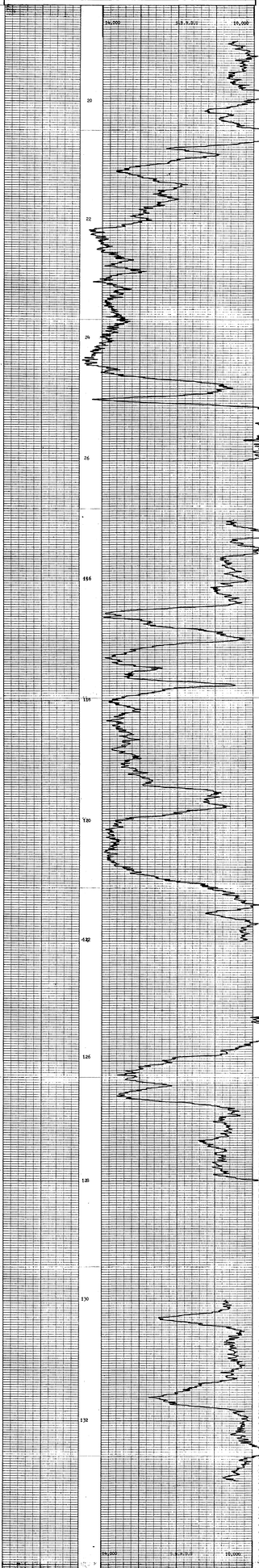
SONDE TYPE
COAL
COMBINATION
SONDE

LOG SUITE
CALIPER
BR DENSITY

BOREHOLE DATA
DRILLER'S DEPTH
LOGGER'S DEPTH
CASING
BIT SIZE
FLUID TYPE
FLUID LEVEL
MAX. REC. TEMP.
EQUIPMENT AND RECORDING DATA
RECORDER NO.
MAX. REC. SPEED
SENSOR OFFSET
OPERATOR DATA
RIGSITE
OPERATOR
SEAM THICKNESS LOG INTERVALS
FROM TO
REMARKS
LOG SCALE
CALIPER 6" - 7" - 8"
BR DENSITY 2.0 - 3.0 - 4.0
DEPTH SCALE 1:200
LOG DATA
DATE
RUN NO.
TIME
DEPTH DRILLER
DEPTH LOGGER
BOTTOM LOGGED INTERVAL
TOP LOGGED INTERVAL
CASING DRILLER
CASING LOGGER
BIT SIZE
TYPE FLUID IN HOLE
DENSITY
VISCOSITY
PH
FLUID LEVEL
MAX. REC. TEMP.
ESTIMATED CEMENT TOP
EQUIPMENT NO.
LOCATION
RECORDED BY
WITNESSED BY
REMARKS: CALIPER CALIBRATION & LOG OK
OK LOGGING SPEED 2000

B P B SEAM THICKNESS LOG

CALIPER (inches)	DEPTH	BED RESOLUTION DENSITY
6 — 8		1.9 — 2.9 — 3.9



CALIPER (inches)	DEPTH	BED RESOLUTION DENSITY
6 — 8		1.9 — 2.9 — 3.9

BPB

BOREHOLE TW2D-200 AREA Tulsa S.D.
CLIENT Crows Nest Resources Ltd. COUNTRY Canada

SEAM THICKNESS LOG

MT880074

BOREHOLE: 6-5-86
CLIENT: CONTINENTAL RESOURCES LTD.

AREA: Tatonduk
COUNTRY: Canada

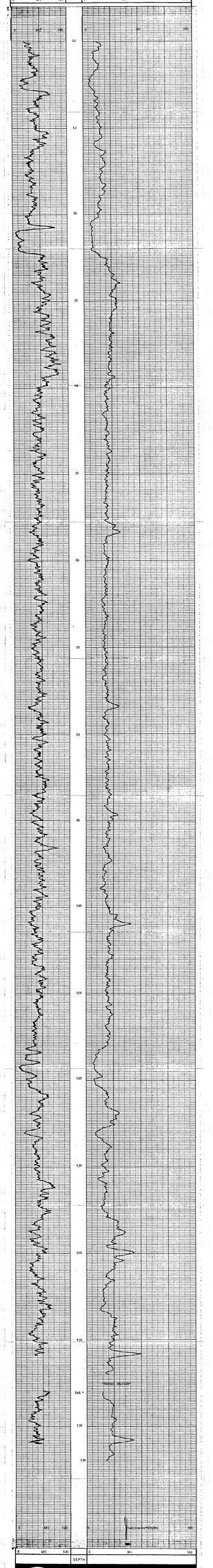
DATE: 6-5-86
RUN: 1
DEPTH: 196.5

BOREHOLE DATA
BIT SIZE: 8.5
CASING: 9.625 @ 0.00
MUD TYPE: Gel Chem
MUD WEIGHT: 9.2
VISCOSITY: 45
PH: 9.5
FLUID LOSS: 4.0
SOURCE: Mixed
RM @ MEASURED TEMP: 0.0 @ 0.0
RMF @ MEASURED TEMP: 0.0 @ 0.0
RMC @ MEASURED TEMP: 0.0 @ 0.0
SOURCE RMF: Measured
SOURCE RMC: Measured
RM @ BHT: 0.0
TIME SINCE CIRCULATION: 0.0
MAX. REC. TEMP.: 0.0
EQUIPMENT AND RECORDING DATA
TRUCK: 2
UNIT: 1
RECORDER: 1
BASE LINE: 1
RECORDED BY: Jones
WITNESSED BY: Jones

2258

DEPTH

0 API 100 | 0 200 | 0 500



DEPTH

0 API 100 | 0 200 | 0 500

BOREHOLE: 6-5-86
CLIENT: Cavers Rand Resources Ltd.
AREA: Tatonduk
COUNTRY: Canada

TW 261

Smith

Directional survey

TK Tetkua B2(3)A

TW-82D-26

238

LOG DEPTH	0210.00	
TRUE DEPTH	0203.78	
TILT	4.78	DG
BEARING	87.53	DG
NORTHING	-004.64	
EASTING	+003.70	
LOG DEPTH	0200.00	
TRUE DEPTH	0199.81	
TILT	4.53	DG
BEARING	103.65	DG
NORTHING	-004.68	
EASTING	+002.87	
LOG DEPTH	0190.00	
TRUE DEPTH	0189.84	
TILT	4.53	DG
BEARING	106.95	DG
NORTHING	-004.49	
EASTING	+002.10	
LOG DEPTH	0180.00	
TRUE DEPTH	0179.87	
TILT	4.67	DG
BEARING	121.65	DG
NORTHING	-004.26	
EASTING	+001.34	
LOG DEPTH	0170.00	
TRUE DEPTH	0169.90	
TILT	4.18	DG
BEARING	132.79	DG
NORTHING	-003.83	
EASTING	+000.65	
LOG DEPTH	0160.00	
TRUE DEPTH	0159.93	
TILT	3.69	DG
BEARING	144.97	DG
NORTHING	-003.34	
EASTING	+000.11	
LOG DEPTH	0150.00	
TRUE DEPTH	0149.95	
TILT	3.33	DG
BEARING	156.99	DG
NORTHING	-002.81	
EASTING	-000.25	
LOG DEPTH	0140.00	
TRUE DEPTH	0139.97	
TILT	2.92	DG
BEARING	159.07	DG
NORTHING	-002.29	
LOG DEPTH	0130.00	
TRUE DEPTH	0129.98	
TILT	2.08	DG
BEARING	190.54	DG
NORTHING	-001.80	
EASTING	-000.66	
LOG DEPTH	0120.00	
TRUE DEPTH	0119.99	
TILT	1.58	DG
BEARING	221.53	DG
NORTHING	-001.44	
EASTING	-000.59	
LOG DEPTH	0110.00	
TRUE DEPTH	0109.99	
TILT	2.06	DG
BEARING	201.73	DG
NORTHING	-001.24	
EASTING	-000.41	
LOG DEPTH	0100.00	
TRUE DEPTH	0100.00	
TILT	1.78	DG
BEARING	205.40	DG
NORTHING	-000.90	
EASTING	-000.27	
LOG DEPTH	0090.00	
TRUE DEPTH	0090.00	
TILT	1.66	DG
BEARING	206.51	DG
NORTHING	-000.62	
EASTING	-000.14	
LOG DEPTH	0080.00	
TRUE DEPTH	0080.00	
TILT	1.38	DG
BEARING	174.52	DG
NORTHING	-000.36	
EASTING	-000.01	
LOG DEPTH	0070.00	
TRUE DEPTH	0070.00	
TILT	.74	DG
BEARING	197.41	DG
NORTHING	-000.12	
EASTING	-000.03	
LOG DEPTH	0060.00	
TRUE DEPTH	0060.00	
TILT	.89	DG
BEARING	231.98	DG
NORTHING	+000.00	
EASTING	+000.00	

238

COAL LITHOLOGY LOG

COMPANY	BP
WELL	[illegible]
FIELD	[illegible]
COUNTY	[illegible]
STATE	[illegible]
LOCATION	[illegible]
API NO.	[illegible]
SECTION	[illegible]
TWP.	[illegible]
RGE.	[illegible]
ELEV.	[illegible]
DATE	[illegible]
RUN NO.	[illegible]
DEPTH DRILLER	[illegible]
DEPTH LOGGER	[illegible]
BTM. LOG INTERVAL	[illegible]
TOP LOG INTERVAL	[illegible]
CASING DRILLER	[illegible]
CASING LOGGER	[illegible]
BIT SIZE	[illegible]
TYPE FLUID IN HOLE	[illegible]
DENSITY	[illegible]
VISCOSITY	[illegible]
PH	[illegible]
FLUID LOSS	[illegible]
SOURCE OF SAMPLE	[illegible]
RM @ MEAS. TEMP.	[illegible]
RMF @ MEAS. TEMP.	[illegible]
RMC @ MEAS. TEMP.	[illegible]
SOURCE RMF	[illegible]
SOURCE RMC	[illegible]
RM @ BHT	[illegible]
TIME SINCE CIRC.	[illegible]
MAX. REC. TEMP.	[illegible]
EQUIP. LOCATION	[illegible]
RECORDED BY	[illegible]
WITNESSED BY	[illegible]

EQUIPMENT AND RECORDING DATA

TOOL NUMBER	TYPE	LOCATION	DEPTH	SPACING	TOOL NUMBER	TYPE	LOCATION	DEPTH	SPACING
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ADDITIONAL SERVICES RUN

SERVICE	RUN	LOCATION	DEPTH
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

REMARKS

[illegible]

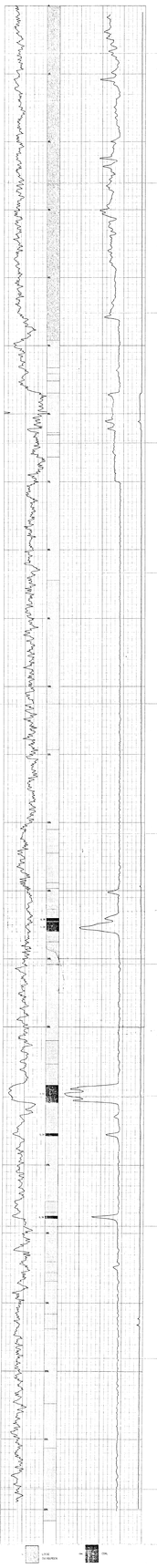
BPS COAL LITHOLOGY LOG

CALIBRATION DATA

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

GAMMA RAY — API — BULK DENSITY — G/CC

HOLE SIZE CORRECTION DATA



LITE TO MARBLE — COAL

BRACCIA — CARBONACEOUS SHALE

CALCITE COAL — SHALE

COAL & SHALE — SILTSTONE

MUDSTONE — SANDSTONE (FINE)

SANDSTONE (MEDIUM)

SANDSTONE (COARSE) — SANDSTONE (CONG)

CONGLOMERATE — SANDSTONE

CHERTS

BPB

BOREHOLE TW-020-268 (2)
CLIENT CrowsNest Resources Ltd
AREA Telkwa B.C.
COUNTRY Canada
DATE LOGGED Sept.20,92
2 - of - 1 LOGS

DEPTH SCALE 1:200

COAL QUALITY LOG

PROBE TYPE
COAL COMBINATION SONDE

CO-SITE
GAMMA RAY
L.S. DENSITY

BOREHOLE DATA — MAKE TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE — GAMMA RAY — PROTECTOR

PROBE	SERIAL NO.	DATE	TIME
L.S.DENSITY	2	1	1
GAMMA RAY	2	1	1
COAL COMBINATION SONDE	2	1/1	2:28

SOURCE SHOW AND CALIBRATION

OPERATION DATA — MAKE TO LITHOLOGY LOG

COAL QUALITY LOG INTERVALS

FROM	TO
129	140
140	158
158	170
170	192
192	238

REMARKS

238

TW-TELKWA-92/08

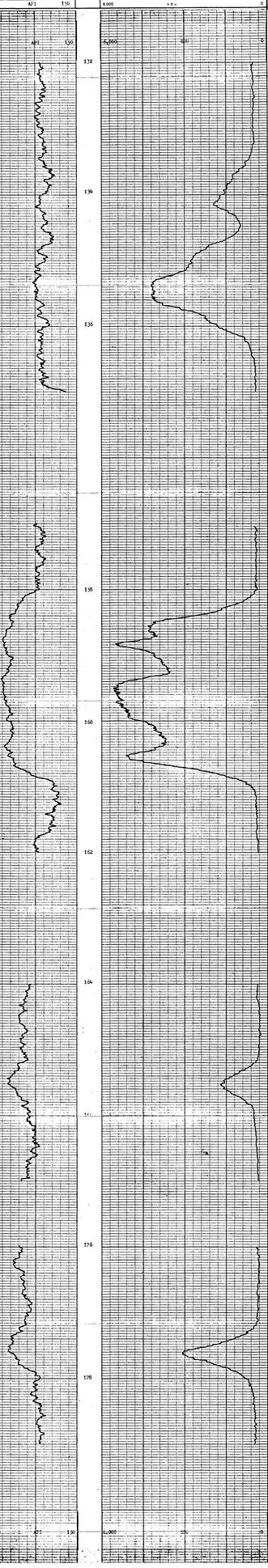
BPB COAL QUALITY LOG

GAMMA RAY | COAL BULK DENSITY g/cm³

HOLE SIZE CORRECTION DATA

2" 4" 6" 8"

0 API 150 | 2.000 g/cm³ 0



0 API 150 | 2.000 g/cm³ 0

GAMMA RAY | COAL BULK DENSITY g/cm³

BPB

BOREHOLE TW - 020-268
CLIENT CrowsNest Resources Ltd
AREA Telkwa B.C.
COUNTRY Canada

COAL QUALITY LOG

The Geonics Group

BOREHOLE TX-92-104 (3)
CLIENT Crowsnest Resources Ltd.
AREA Tekwa B.C.
COUNTRY Canada
DATE LOGGED 20 Sept.'92
SCALE 1:50
2-D-2-2000

SEAM THICKNESS LOG

BOREHOLE DATA
OPERATION DATA
EQUIPMENT AND RECORDING DATA

LOG	SPANS	SENSITIVITY	FILTER	SCALE
COAL COMBINATION SONDE				
BED RESOLUTION DENSITY	1/2	2	1/2	1/2
CALIPER	1/2	2	1/2	1/2

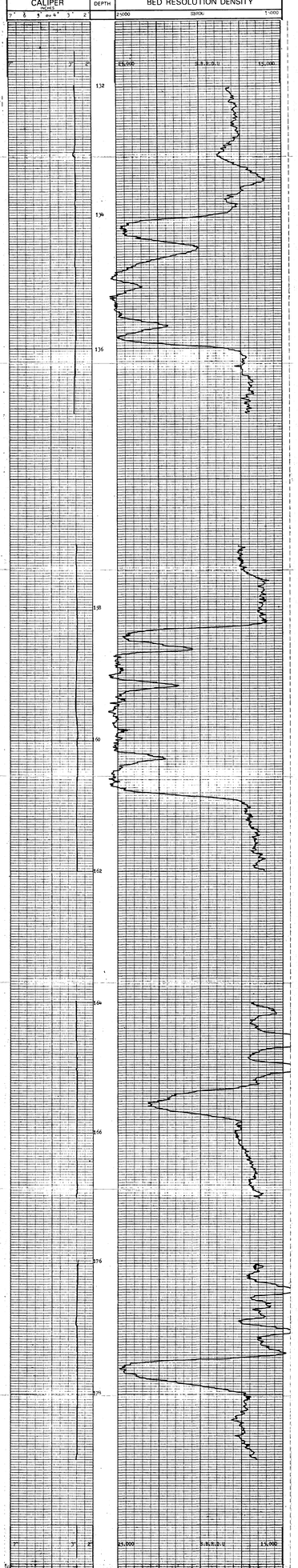
SONDE TYPE
COAL COMBINATION SONDE

LOG SUITE
CALIPER
BR DENSITY

SEAM THICKNESS LOG INTERVALS

From	132	132	132
To	134	136	137
Thickness	2	3	5
Total	2	5	5

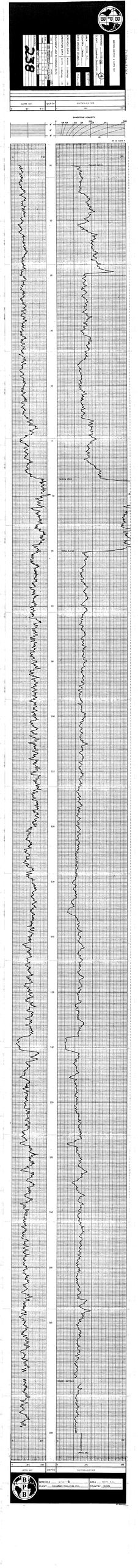
REMARKS
238



CALIPER
INCHES
DEPTH
BED RESOLUTION DENSITY
2.000
SHOW
1.000
25,000
G.B.R.D.U
15,000

BOREHOLE TX-92-20
CLIENT Crowsnest Resources Ltd.
AREA Tekwa B.C.
COUNTRY Canada

SEAM THICKNESS LOG


2238
SANDSTONE POROSITY
CASING SHOE
CENTRAL STAGE
MEDIUM SLAVES
TRIPLE MAX
TRIPLE MAX

TR-Tolima-02-01A

BPB

PROGRESS ELECTRIC

BOREHOLE Tr-02-238 (5)

CLIENT Crowflat Resources Ltd

AREA Tolima

COUNTRY Colombia

DATE LOGGED 20Sep1.92 1.Sep.2.1992

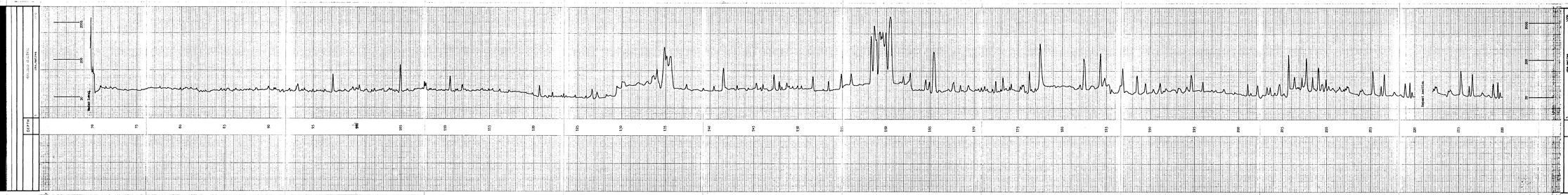
SCALE/SCALE 1:100

BOREHOLE DATA	Acorto Ltd Geology	LOG
OPERATION DATA	Acorto Ltd Geology	LOG

EQUIPMENT AND RECORDING DATA

LOG	UNIT	SERIAL NO.	PROBE	SERIAL NO.	LOG
F.E.	2	5	5	5	

REMARKS 238



PROGRESS ELECTRIC

OHM METERS

DEPTH

BOREHOLE Tr-02-238

CLIENT Crowflat Resources Ltd

AREA Tolima

COUNTRY Colombia

BPB

TW 262

238

BOWEN PRESSURE PUMPING, INC.

SAN AN, N.M. & NW BOND CREEK WELL

COMPANY	BOWEN PRESSURE PUMPING, INC.
WELL	Jicarilla Gas Unit Bowen #1
FIELD	
COUNTY	Rio Arriba
STATE	New Mexico
LOCATION	1120' FNL & 1120' FEL
SEC.	34
TWP.	26 N
RGE.	3 W
ELEV.	7230'
DATE	11-8-90

PERMANENT DATUM	GL
LOG MEASURED FROM	KB
DRILLING MEASURED FROM	KB

RUN NO.	1	2	3
DATE	11-8-90		
TYPE LOG	Gamma Ray		
BOTTOM DRILLER	1200'		
BOTTOM LOGGER	1198'		
CASING-DRILLER	8 5/8 @ 32'		
CASING-LOGGER			
BIT SIZE	7 7/8		
TYPE FLUID IN HOLE	Air		
DENSITY			
VISCOSITY			
PH			
FLUID LOSS			
SOURCE OF SAMPLE			
RM @ MEAS. TEMP.			
RMF @ MEAS. TEMP.			
RMC @ MEAS. TEMP.			
SOURCE RMF / RMC			
RM @ BHT			
MAX. REC. TEMP.			
EQUIPMENT LOCATION	Jicarilla		
RECORDED BY	Jerry Lewis		
WITNESSED BY	Bowen Rep.		

EQUIPMENT AND RECORDING DATA

LOG	EQUIPMENT			CAPACITY				PASS									
TYPE	TENSION	SOURCE	EX/AMPERE	LOG SPEED	RECORDING SCALE	DEPTH SCALE	TIME SCALE	NO.	DIR	SPEED	TIME	DEPTH					REMARKS
	LBS			FPM								FT	FT				
GR	-	-	225	1	0	0	0	1	-	1.00	120	50	120				
LOG	-	-	5226	1	0	0	0	1	-	7.00	120	60	120				

ADDITIONAL SONDES RUN

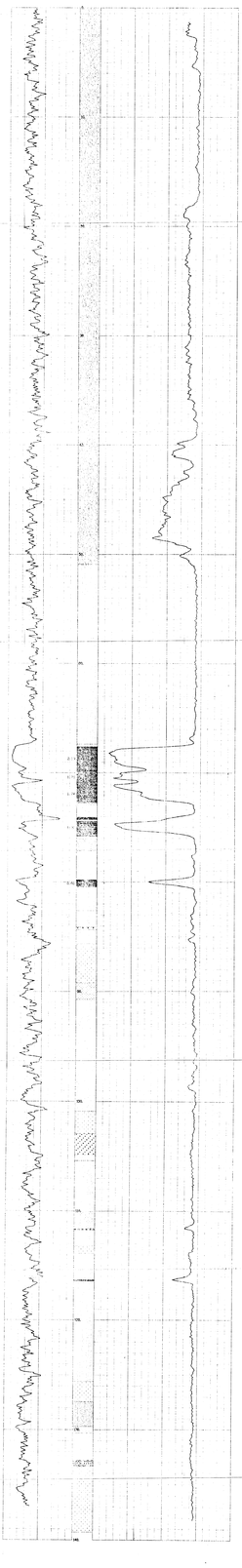
SONDE TYPE	LOG TYPE	GENERAL DESCRIPTION OF LOG RECORDED
GR	n/a	n/a

NOTE TO ADDITIONAL READERS

REMARKS

Due to poor hole conditions no spec tele logs were available.

DEPTH



LOOSE OVERBURDEN

COAL

SHALEY COAL

CARBONACEOUS SHALE

COALY SHALE

SHALE

MUDSTONE

SILTSTONE

SANDSTONE (FINE)

SANDSTONE (MEDIUM)

SANDSTONE (COARSE)

SANDSTONE (CONG.)

CONGLOMERATE

IRONSTONE

GYPSUM

TK Telkwa 6(5)A

BOREHOLE 26 (2)

CLIENT

AREA

COUNTRY

DATE LOGGED

DEPTH SCALE

OF 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				PANEL				CAL. CHECK
	LOG TAPE	RECORDER TAPE	RECORDER SPEED	SIDEWALL POSITION	SPEED	S.P.	NORM		
GAMMA RAY									
L.S. DENSITY									

SONDE TYPE COAL COMBINATION SONDE

SOURCE SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

COAL QUALITY LOG INTERVALS

FROM	
TO	
INTERVAL	
FROM	
TO	
INTERVAL	

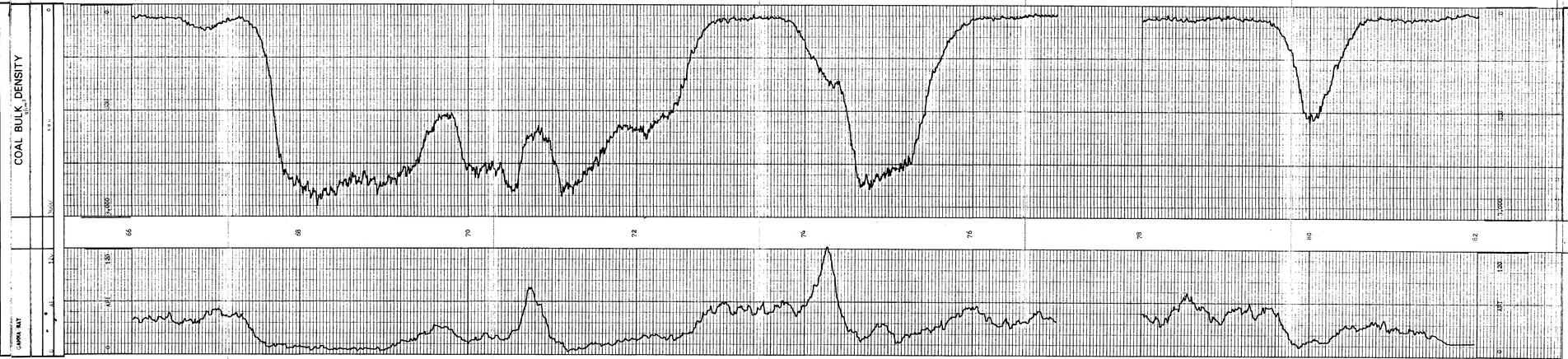
INTERVAL TOTAL

LOG SUITE GAMMA RAY L.S. DENSITY

REMARKS

238

BPB COAL QUALITY LOG



COAL BULK DENSITY

AREA

COUNTRY

BOREHOLE

CLIENT

COAL QUALITY LOG

MT 85003 B

TK-Telkwa 8/5/A

BOREHOLE 82-262 (3)

CLIENT Terra Test Management Ltd.

AREA Telkwa

COUNTRY Canada

DATE LOGGED 1 of 1 of 2

DEPTH SCALE 1:20

2 OF 2 LOGS

SEAM THICKNESS LOG

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

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

SIDE WALL POSITION

LOG	TAPING				PANEL				NORM.
	LOG	RECORDER SPEED	CHART SPEED	PLAY SPEED					
CALIPER									
B.R. DENSITY	Y	20/5		1	20/5	1.1	2.0	2.0	

SOURCE SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

SONDE TYPE
COAL COMBINATION SONDE

LOG SUITE
CALIPER
B.R. DENSITY

SEAM THICKNESS LOG INTERVALS

FROM	62.0m	0.00	
TO	71.0m	11.00	
INTERVAL	9.0m	11.0	238
FROM			INTERVAL
TO			TOTAL
INTERVAL			

REMARKS

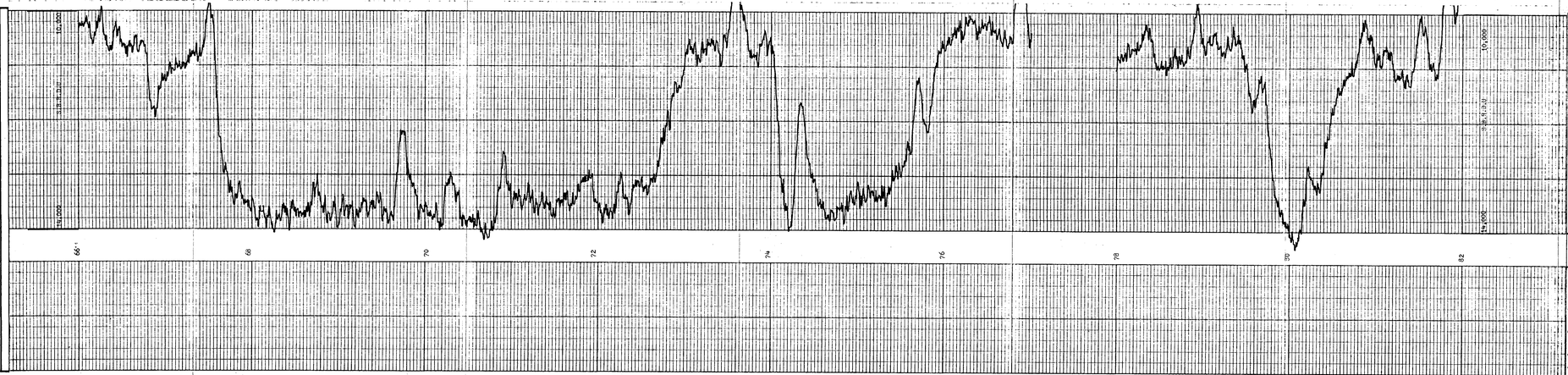
Caliper log not displayed as tool was run inside rods.

B P B SEAM THICKNESS LOG

BED RESOLUTION DENSITY

DEPTH 1:200

CALIPER INCHES 6 8



BED RESOLUTION DENSITY

DEPTH 1:200

CALIPER INCHES 6 8

BOREHOLE 82-262

CLIENT Terra Test Management Ltd.

AREA Telkwa

COUNTRY Canada

SEAM THICKNESS LOG

BPB

Tim Tribble Edition

SCHLUMBERGER

BOREHOLE 238 (4)

CLIENT Conoco Gas Resources Ltd.

AREA Indian Ocean

COUNTRY Australia

DATE LOGGED 1/10/2010

DEPTH DATUM

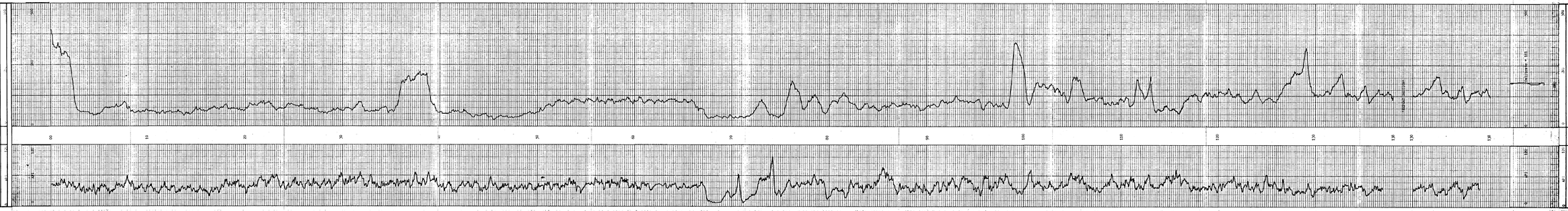
BOREHOLE DATA	REFER TO CR & LOG	LOG
OPERATION DATA	REFER TO CR & LOG	LOG

EQUIPMENT AND RECORDING DATA

LOG	TAPING			PANEL			CODE
	SPEED	TIME CONST	SENSITIVITY	SPEED	TIME CONST	SENSITIVITY	
GR	1	0.5	0	0.5	1	0.5	

REMARKS

238



AREA Indian Ocean

COUNTRY Australia

BOREHOLE 238 (4)

CLIENT Conoco Gas Resources Ltd.

TW 264

238

BPB INSTRUMENTS

COAL LITHOLOGY LOG

WELL NAME	Bowmans Wood 10
LOCATION	Bowmans Wood
COUNTY	Derbyshire
DATE	7-8-1982
LOGGED BY	J.A. Lowe
CALIBRATED BY	J.A. Lowe

COMPANY	NATIONAL COAL BOARD
WELL TYPE	Exploration
WELL STATUS	Abandoned
LOGGING UNIT	Mobile
LOGGING DIRECTION	Up
LOGGING MODE	Continuous
LOGGING SPEED	1 m per min
DATUM	Ground level
DATUM ELEVATION	0 m
LOG TOP	0 m
LOG BASE	1000 m
PERMANENT DATUM	Ground level
LOG MEASURED FROM	Ground level
DRILLING MEASURED FROM	Ground level

EQUIPMENT AND RECORDING DATA

TOOL CONNECTION TIMES													
TOOL	SERIAL NO.	TIMES				TOOL	SERIAL NO.	TIMES					
		ON	OFF	ON	OFF			ON	OFF	ON	OFF		
GAMMA RAY	1108	10:0	9	9	9	7	7	10	12	10	12	Gas	
BULK DENSITY	1108	10:0	9	9	9	12.48	12.48	12	12	12	12	Gas	
CALIPER		10:0	9	9	9	12.5	12.5	12	12	12	12	Gas	

TOOL SERIAL NUMBERS: 1108 GAMMA RAY, 1108 BULK DENSITY, 1108 CALIPER

Time	1331	1333	1335										
Depth	19	19.5	20										
Speed	1	1	1										

ADDITIONAL SENSOR RUN					
SENSOR	TYPE	SERIAL NO.			
CALIPER	1108	1108			
GAMMA RAY	1108	1108			
CALIPER	1108	1108			

TIME IN SECONDS	1
VERTICAL SCALE	1

REMARKS

Gamma Ray Standard at 1.7m. (API A.P.I. units)
Bulk Density Standard at 1.7m. (g/cc) Low Limit
Density 0.5 g/cc Incremental Limit 0.01g/cc.
Calliper Pads 210-170 in 0.125 in. Length 310". Rig Jolts 20-22m. Hole tight.

BPB COAL LITHOLOGY LOG

CALIBRATION DATA

GR Min. 20 API	GR Max. 200 API	GR Min. 20 API at 1000 counts	GR Max. 200 API at 1000 counts
GR Scale Factor 1	GR Offset 0	Density Min. 1.0 g/cc	Density Max. 3.0 g/cc
Density Scale Factor 1	Density Offset 0	Calliper Min. 0 in	Calliper Max. 20 in

GAMMA RAY	API	BULK DENSITY	CALIPER

HOLE SIZE CORRECTION DATA

| | | | | | | | | | | | | |

BPB

BOREHOLE 84-26-206 (2)
CLIENT Crowsnest Resources Ltd.
AREA Yellow Knife
COUNTRY Canada
DATE LOGGED 22 Sept. 1984
SCALE 1:240
2 OF 2 (1-100)

COAL QUALITY LOG

SONDE TYPE
COAL DENSITY COMBINATION SONDE

CALIBRATION
LS DENSITY

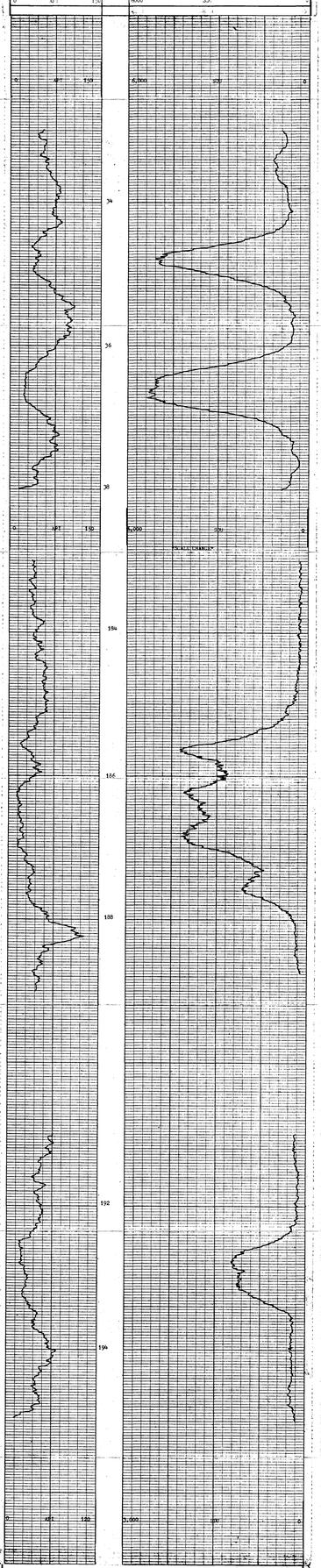
LOG SUITE
COAL QUALITY
LS DENSITY

BOREHOLE DATA — RIGS TO LITHOLOGY LOG
OPERATION DATA — RIGS TO LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA
COAL COMBINATION SONDE — SERIAL NO. 0101

COAL QUALITY LOG INTERVALS

REMARKS:
COAL QUALITY LOG CALIBRATED
LOGGED TO 0' = NATURAL GROUND SURFACE
LOGGED TO 0' = NATURAL GROUND SURFACE
LOGGED 24 OCT 1984

238



GAMMA RAY
COAL BULK DENSITY

BOREHOLE 84-26-206
CLIENT Crowsnest Resources Ltd.
AREA Yellow Knife
COUNTRY Canada

COAL QUALITY LOG

BPB

BOREHOLE TV-82-264 (3)
CLIENT CROWNEST RESOURCES LTD.
AREA TELKWA B.C.
COUNTRY CANADA
DATE LOGGED 22 JULY 82
DATE PLOTTED 11 OCT 82
3 of 5 (100)

SEAM THICKNESS LOG

SONDE TYPE
COMPANY COMBINATION SONDE

LOG SUITE
CALIPER
B.R. DENSITY

BOREHOLE DATA — RETURN TO TOP OF LOG

OPERATION DATA — RETURN TO TOP OF LOG

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

LOG	SERIAL NO.	DIAMETER	DETECTOR	SOURCE	DATE	TIME	OPERATOR	DIGITAL RECORDER
COMBO	1	2	8	2	1/11/82	1/1/82	3	1
SONDE SONDE CALIBRATION								
RUN CALIBRATION LOG								

SEAM THICKNESS LOG INTERVALS

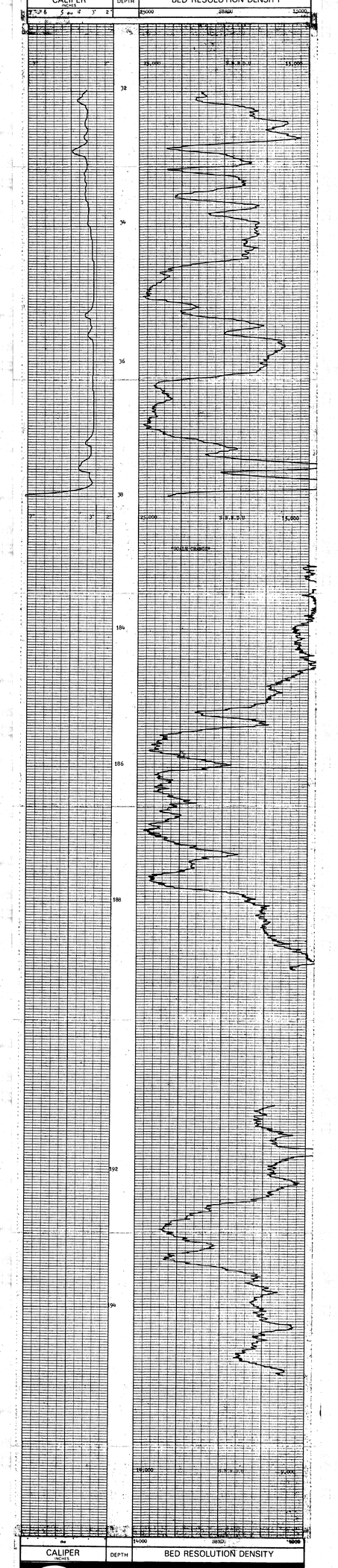
	FROM	TO
INTERVAL 1	111	193
INTERVAL 2	193	32
INTERVAL 3	32	0

REMARKS
PLANES ARTIFICIAL CONDITIONS (LOG DEFAULT)
SONDE IN PIPE BETWEEN 180 & 193 (LOG DEFAULT)

238 FROM 1 TO 15

B P B SEAM THICKNESS LOG

CALIPER INCHES | DEPTH | BED RESOLUTION DENSITY



CALIPER INCHES | DEPTH | BED RESOLUTION DENSITY

BPB

BOREHOLE TV-82-264
CLIENT CrowNest Resources Ltd.
AREA Telkwa B.C.
COUNTRY Canada

SEAM THICKNESS LOG

WF 88003 B

The Telkwa Ex(5)A

FOCUSSED ELECTRIC

238

BOREHOLE TW-82D-264 (4)

CLIENT GrowWest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

DATE LOGGED 22 Sept. 192.

DEPTH SCALE 1:100

No. of G. LOGS 1

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

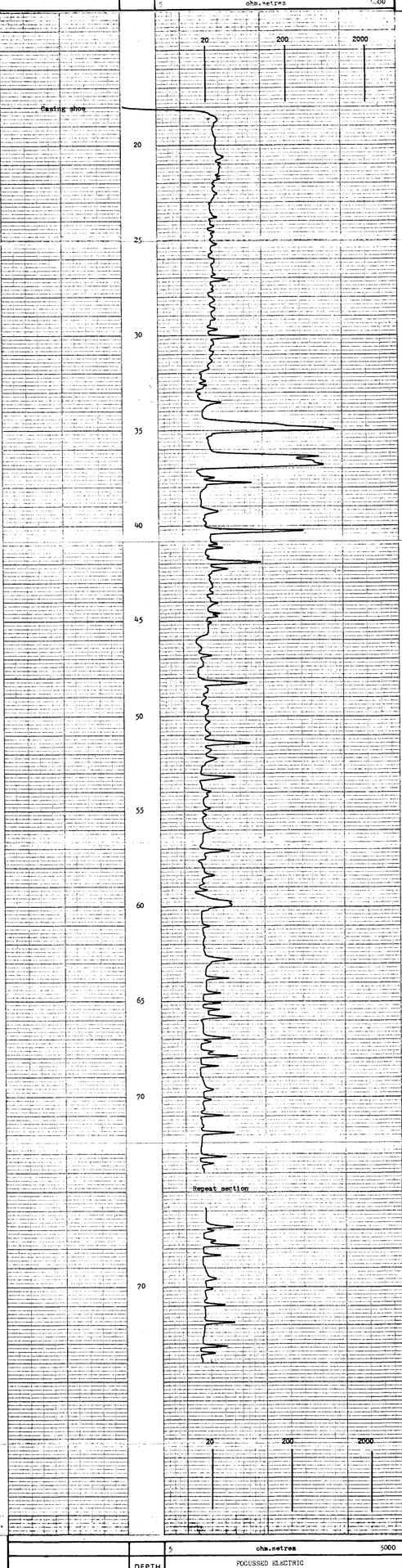
LOG	PANEL	CODE
TAPING		
FOCUSSED ELECTRIC	NORM	

F.E.	Y	9	D
START	225	FOOT	

REMARKS

Mud resistivity 38 ohm.metres @ 7°C.

Open hole blocked at 75m.



BOREHOLE TW-82D-264

CLIENT GrowWest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

MY A84338

BP

WELL	238
COMPANY	CONOCO INC. CANADA
FIELD	
COUNTY	
STATE	
COUNTRY	
LOCATION	
DATE	
RUN	
DEPTH	
DRILLER	
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 @ MEASURED TEMP	
RMF @ MEASURED TEMP	
RMC @ MEASURED TEMP	
SOURCE RMF	RMC
RM @ BHT	
TIME SINCE CIRCULATION	
MAX. RECORDED TEMP.	
EQUIPMENT NO.	
LOCATION	
RECORDED BY	
WITNESSED BY	

CONOCO INC. CANADA

CONOCO INC. CANADA

238

CAPS 1A1 | DEPTH | 1:240.3047ft

AC1 | 0.0 | GR1 | 0.0

Heating effect

Thermal detection

CAPS 1A2 | DEPTH | 1:1.5240.3047ft

AC2 | 0.0 | GR2 | 0.0

BP

BOREHOLE : 7MAR-1988

CLIENT : CONOCOINC. CANADA LTD.

AREA : TUCKER D.C.

COUNTRY : CANADA

BPB

COMPANY: CONSORTIUM DES PETROLES DE FRANCE

WELL: 238

FIELD: ABU SAFAH

COUNTY: SOUTHERN PROVINCE

STATE: DUBAI

COUNTRY: UNITED ARAB EMIRATES

OTHER SERVICES: NONE

LOCATION: 1 KM FROM WELL 1

PERMANENT DATUM: GROUND LEVEL

ELEV.: 0 M

LOG MEASURED FROM: KELLY BUSHING

DRILLING MEASURED FROM: KELLY BUSHING

DATE	19-DEC-84	
RUN NO.	ONE	
TYPE FLUID IN HOLE	SALT MUD	
DENSITY	1.2	
VISCOSITY	45	
PH	10.5	
FLUID LOSS	4.8	
SOURCE OF SAMPLE	FLOWLINE	
RM @ MEASURED TEMP.	0.18 @ 24 C	
RMF @ MEASURED TEMP.	0.14 @ 24 C	
RMC @ MEASURED TEMP.	0.22 @ 24 C	
SOURCE RMF & RMC	MEASURED	
RM @ BHT	0.09 @ 100 C	
TIME CIRC.	12 HRS	
TIME SINCE CIRC.	4 HRS	
MAX. REC. TEMP.	100 C	
EQUIPMENT NO.	1	
LOCATION	DUBAI	
RECORDED BY	J. WILLIAMS	
WITNESSED BY	MR. SMITH	

GAMMA RAY	DEPTH	NEUTRON-DECENTER
0		300
100	10	
	20	Decline zone
	30	
	40	
	50	
	60	
	70	
	80	
	90	
	100	
	110	
	120	
	130	
	140	
	150	
	160	
	170	
	180	
	190	
	200	Valued neutron
	210	
100		300

GAMMA RAY	DEPTH	NEUTRON-DECENTER
100		300

BPB

BOREHOLE: 26-DEC-84

CLIENT: Consortium Petroleum Ltd.

AREA: Dubai U.A.

COUNTRY: Oman

TW 265

COMPANY NAME: BP RESEARCH	WELL NAME: 3	COUNTY: MONROE	STATE: OHIO
LOCATION:		API NO.	

BPB

COAL QUALITY LOG

BOREHOLE TYPE: COAL COMPANY DRILLING

LOG DATE: CANADA MAP 1.1.1.1.1.1.1.1

238

COAL QUALITY LOG INTERVALS

SEAM THICKNESS LOG

BPB

COMPANY: Canadian Hydrocarbons Ltd.
AREA: Yukon, N.W.T.
COUNTRY: Canada

DATE: 20/03/87 & 21/03/87

BOREHOLE: Ya-Ed-Ro-1
CLIENT: Canadian Resources Ltd.

SEAM THICKNESS - 100 INTERVALS

CALIPER (Inches) 6 – 16
DENSITY (g/cc) 2.0 – 3.0

BED RESOLUTION DENSITY (g/cc) 2.0 – 3.0

SEAM THICKNESS (cm) 0 – 100

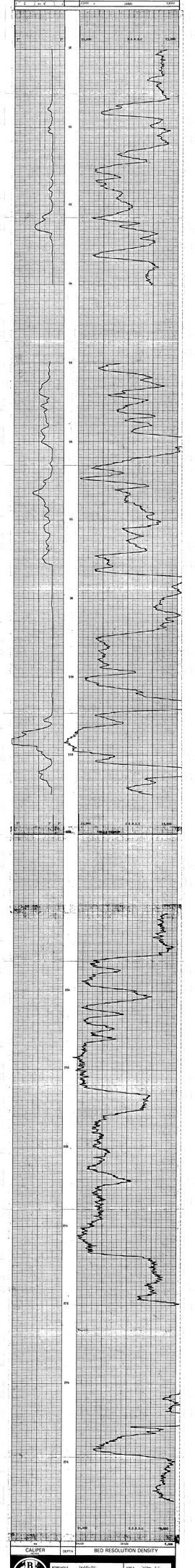
DEPTH (m) 0 – 1,000

BOREHOLE DIAMETER (CALIPER) 6 – 16 (Inches)

COMPUTED BED RESOLUTION DENSITY (g/cc) 2.0 – 3.0

COMPUTED SEAM THICKNESS (cm) 0 – 100

238



B P B SEAM THICKNESS LOG

CALIPER (Inches)	DEPTH	BED RESOLUTION DENSITY
6 – 16		2.0 g/cc – 3.0 g/cc

BOREHOLE: Ya-Ed-Ro-1 | AREA: Yukon, N.W.T.
CLIENT: Canadian Resources Ltd. | COUNTRY: Canada

SEAM THICKNESS LOG

BPB

BPB

RECORD NO. 238

BOREHOLE TW-82-265 (4)

CLIENT Crowsnest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

DATE LOGGED 22 Sept. 82

BOREHOLE DATA Water Filled

OPERATION DATA Water Filled

EQUIPMENT AND RECORDING DATA

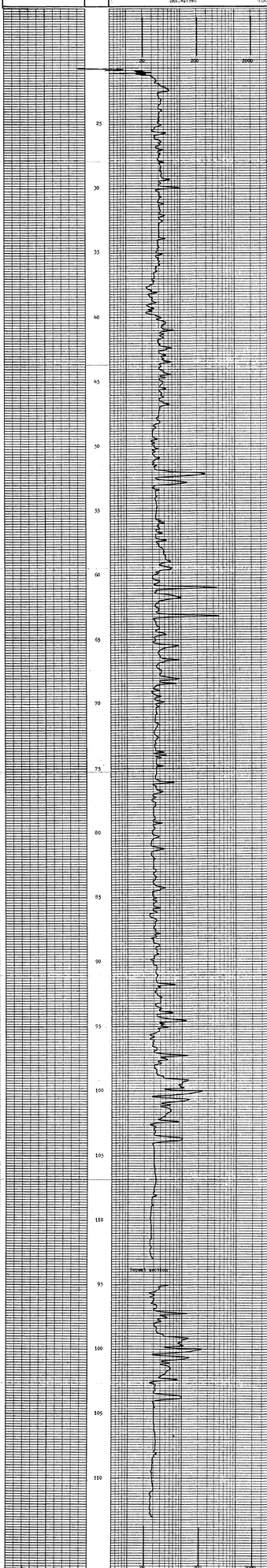
100					1000
Gain	Filter	Sensitivity	Amplitude	Chart Speed	Depth Scale
1	5	200	20	1000	1:100

REMARKS

Pad resistivity 100 ohm-metres

Hole open to 114m. only made to 101.8 m

DEPTH	INDUCED ELECTRIC
	ohm.metres 100



DEPTH	INDUCED ELECTRIC
	0 TRANSMITTER 300A

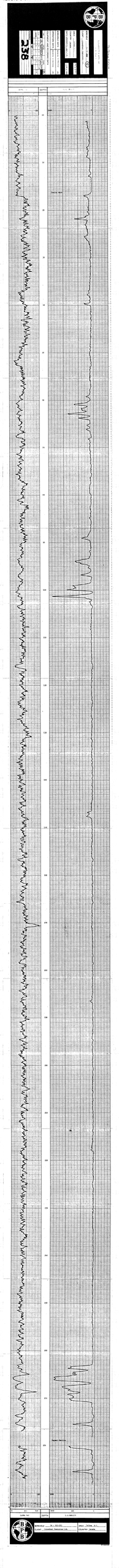
BPB

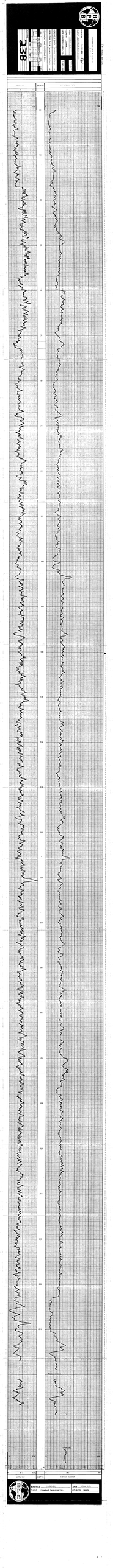
BOREHOLE TW-82-265

CLIENT Crowsnest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada


DRILL TIME
DEPTH
1.5 MINUTES
BOREHOLE
COMPANY
COUNTY
STATE


236
DATE
TIME
CHART NO.
DATE
CENTER METER
MANUFACTURED BY
CHART
CALIBRATION
DATE
DATE
DATE

TW 266

238

BPB

GUARD BAY & LAKE BEACH DIRECT LOG

BOREHOLE: Hole 1 (Well 1)
DATE: October 8 & 9 1974
COUNTY: Lincoln
STATE: Washington
1" = 10'
DATE LOGGED: 10/9/74

BOREHOLE DATA
Ground level
TOTAL DEPTH: 1,100'
CASING: 8 5/8" @ 1,100'
MUD: Gel Chem
BIT SIZE: 7 7/8"
MAX. DEV.: 1 1/2°
MAX. TEMP.: 90°F

FLUID DATA
LEVEL: 0
SOURCE: Gel Chem
RESISTIVITY: 1.0 @ 75°F
CHLORIDES: 10,000 ppm
PH: 9.5

OPERATION DATA
LOGGED BY: R. Bruce Lindstrom
OPERATOR: R. Bruce Lindstrom
WITNESS: Jim Hoffman
WEATHER: Clear
TEMPERATURE: 50°F
WIND: Calm
TIME: 8:00 AM
DATE: 10/9/74

EQUIPMENT AND RECORDING DATA

LOG	EQUIPMENT: SONDE	EQUIPMENT: SOURCE	EQUIPMENT: DAC/BRUTON	TAPING: SPEED (FT/HR)	TAPING: CALIBRATION	TAPING: REPLAY	PANEL: SPEED	PANEL: SCALE	PANEL: DATA	LOG TIME	VERTICAL: FROM	VERTICAL: TO	VERTICAL: BATCH
	1139		3021										
GR	"	"	371	T	Pa/m	D	Pa/m	1	"	1.05	95	100	94
LSD	"	"	0336	T	Pa/m	D	Pa/m	.3	7.42	"	98	100	94

ADDITIONAL SONDES RUN

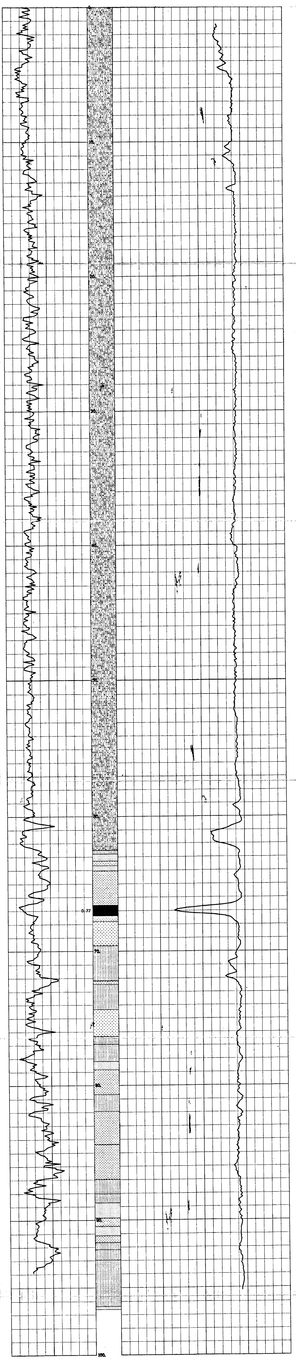
SONDE	LOG	SPEED (FT/HR)	MAX. DEV.	BATCH
NGS	8/8	1,100		

REMARKS

No open hole logs were available.

NOTES

ADDITIONAL REMARKS



LOOSE OVERBURDEN
COAL
SHALEY COAL
CARBONACEOUS SHALE
COALY SHALE
SHALE
MUDSTONE
SILTSTONE
SANDSTONE (FINE)
SANDSTONE (MEDIUM)
SANDSTONE (COARSE)
SANDSTONE (CONG)
CONGLOMERATE
IRONSTONE
IGNEOUS

GAMMA RAY & LONG SPACED DENSITY LOGS

BOREHOLE: EWB20-266
CLIENT: Crows Nest Resources Ltd.
AREA: Tatlow B.C.
COUNTRY: CANADA
DATE LOGGED: 22-Mar-82
BOREHOLE DATA
LOCATION (m): Grid Level
ELEVATION (m): 0.0
DATUM: Ground Level
DRILLING MEASUREMENTS: G.L.
ELEVATION (m): G.L.
DATUM: G.L.
DRILLING MEASUREMENTS: G.L.
TOTAL DEPTH (m): 1.00
CASING (m): 0.0
BIT SIZE: 76.2mm
CASING SIZE: G.L.
CASING DEPTH: G.L.
MAX. DEVIATION: G.L.
FLUID LEVEL: G.L.
FLUID CLEARANCE: G.L.
FLUID DENSITY: G.L.
FLUID VISCOSITY: G.L.
FLUID PH: G.L.
FLUID RESISTIVITY: G.L.
FLUID TEMPERATURE: G.L.
TIME SINCE CIRCULATION: G.L.
TIME SINCE DRILLING: G.L.
TOOL NO. USED: 2K-MAGELI-ANALOGUE
TYPE: 2K-MAGELI-ANALOGUE
DIAMETER: 76.2mm
LENGTH: 3.0m
OPERATING TIME: 0.4 hrs
OPERATION DATA
LOG NO.: 1
DATE: 22-Mar-82
TIME: 00:00
OPERATOR: Mr. Ross
WITNESS: Mr. Ross
DRILLER: Mr. Ross
DRILLING CONTRACTOR: Mr. Ross
REMARKS: Mr. Ross
WITNESS: Mr. Ross

EQUIPMENT AND RECORDING DATA

LOG	EQUIPMENT			TAPING			PANEL			DEPTHS		
	SONDE	SOURCE	CALIBRATOR	LOG TYPE	RECORDING MEDIUM	DATE	SPEED	FS. SENS.	NORM.	FROM	TO	INTERVAL
	1120	9-13										
GR	"	"	371	T	9m/m	D	9m/m	1	"	1.00	0%	00
LSD	"	"	0336	T	9m/m	D	9m/m	.3	2.-1	"	0%	00

ADDITIONAL SONDES RUN

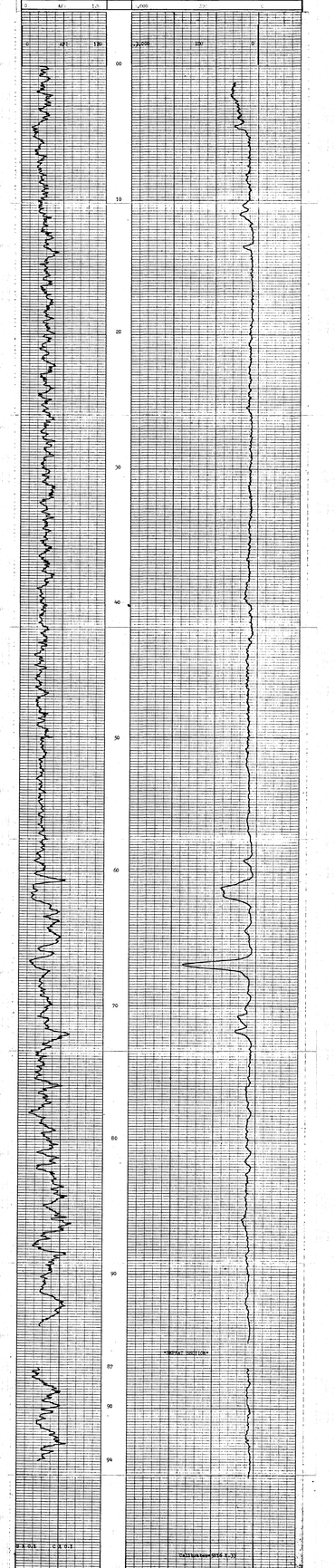
SONDE	LOG	GENERAL SCALE	DETAIL SCALE
256	R/D	1:100	

REFER TO ADDITIONAL HEADINGS

REMARKS

No open hole logs were available.

DEPTH



DEPTH

BOREHOLE: EWB20-266
CLIENT: Crows Nest Resources Ltd.
AREA: Tatlow B.C.
COUNTRY: Canada

TK-Telkwa 82(3)A

BPB

BOREHOLE TW82-266 (3)
CLIENT Crows Nest Resources Ltd.

AREA Telkwa B.C.
COUNTRY Canada
DATE LOGGED 23/Sep/82

DEPTH SCALE 1:20

2 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			COAL CUTOFF
	LOG TAPED	RECORDING SPEED	REPEAT	SPEED	GAIN	NORM	
GAMMA RAY	Y	2m/m	R	2m/m	2	'	1.59
L.S DENSITY	Y	2m/m	R	2m/m	.5	7.41	'

SOURCE SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

SONDE TYPE: COAL COMBINATION SONDE

COAL QUALITY LOG INTERVALS

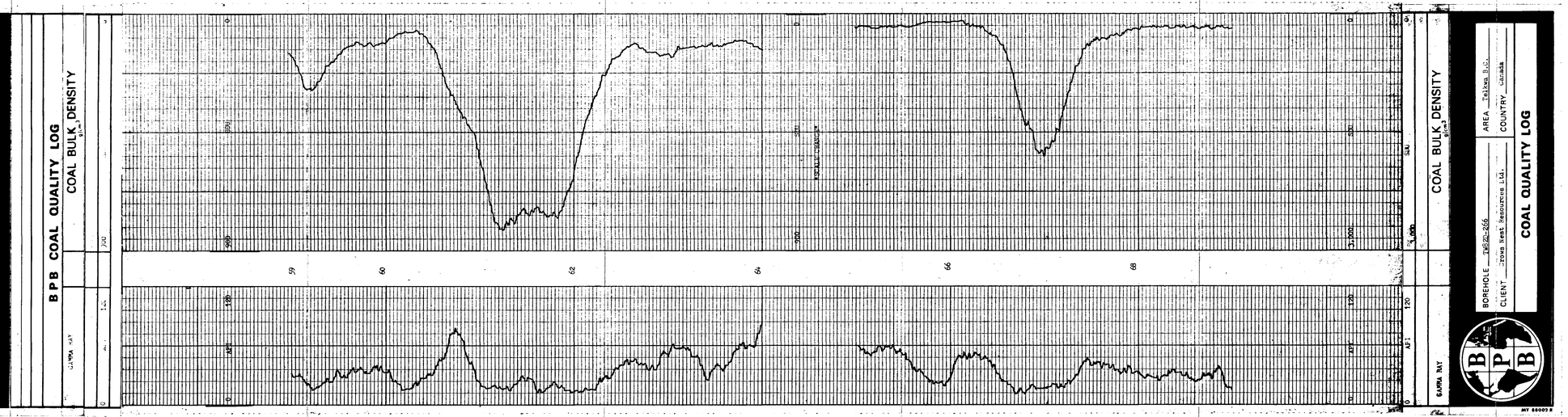
FROM	69.0m	64.0m
TO	65.0m	58.0m
INTERVAL	4.0m	6.0m
FROM		
TO		
INTERVAL		

INTERVAL TOTAL 238 m

LOG SUITE: GAMMA RAY L.S DENSITY

REMARKS

Please note scale change for topmost detail section.



TK-Telkwa 82(3)A

BOREHOLE TW82D-266 (4)

CLIENT Crows Nest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

DATE LOGGED 23/Sep/82

DEPTH SCALE 1:20

3 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		
	LOG TAPE	RECORDING SPEED	SET UP REFLAST	SPEED	TC SECS	NORM CNTS
CALIPER						
BR DENSITY	Y	2M/M	R	2M/M	.5	7.35

SOURCE SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG INTERVALS

FROM	63.0m	64.0m
TO	69.0m	58.0m
INTERVAL	6.0m	6.0m
FROM		
TO		
INTERVAL		

ORIGINAL TOTAL 12

238

REMARKS

Please note scale change for topmost detail section.

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: CALIPER B.R. DENSITY

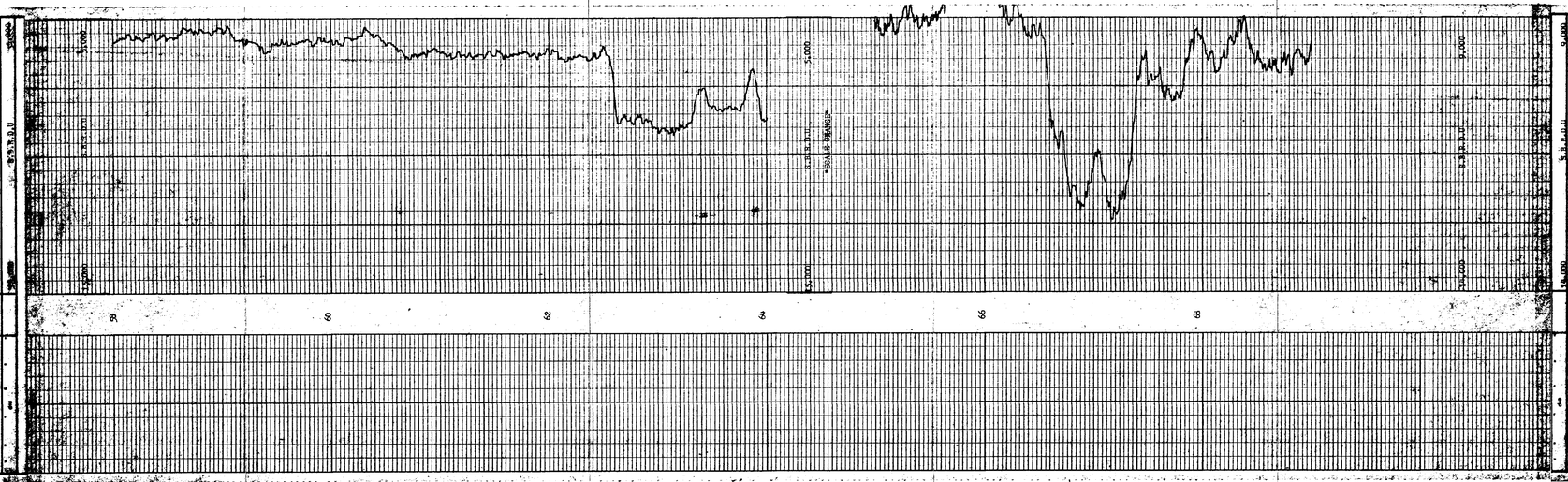
B P B SEAM THICKNESS LOG

BED RESOLUTION DENSITY

G/CC

DEPTH

CALIPER INCHES



BED RESOLUTION DENSITY

DEPTH

CALIPER INCHES

BOREHOLE TW82D-266

CLIENT Crows Nest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

SEAM THICKNESS LOG

MY180038

The Petroleum Group

GAMMA RAY & NEUTRON/NEUTRON LOGS:

BOREHOLE Tarfiti-266 (5)

CLIENT Crows Nest Resources Ltd.

AREA Calgary S.E.

COUNTRY Canada

DATE LOGGED 23/Jan/85

RUN NO. 1

DATE 23/Jan/85

TIME 11:00

BOREHOLE DATA

MEAS. FROM GR @ 1220 LOG

OPERATION DATA

MEAS. FROM GR @ 1220 LOG

EQUIPMENT AND RECORDING DATA

				PART	SERIAL
LOG	INTERVAL	SPEED	TIME CONSTANT		
GR	1220	30	1		
N/N	1220	30	1		

REMARKS

250

DEPTH

0 API 120 | 0 GR 300 | 0 N/N 500

NORMAL SECTION

DEPTH

0 API 120 | 0 GR 300 | 0 N/N 500

BPB

BOREHOLE Tarfiti-266

CLIENT Crows Nest Resources Ltd.

AREA Tarfiti

COUNTRY Canada

MF 4185-5-5

TW 267

BP RESOURCES	BP RESOURCES	BP RESOURCES	BP RESOURCES
LOCATION:	WELL:	LITHOLOGY	DATE:
COUNTY:	FIELD:		TOOL:
STATE:			

EQUIPMENT AND RECORDING DATA												
TOOL CONFIGURATION DATA												
TOOL	SERIAL NO.	SOURCE	DETECTOR	SOURCE	DETECTOR	SOURCE	DETECTOR	SOURCE	DETECTOR	SOURCE	DETECTOR	SOURCE

COMPANY	
WELL	
FIELD	
COUNTY	
STATE	
LOCATION	
API NO.	
OTHER SERVICES	
SECT.	TWP.
RGE.	PERM. DATUM
ELEV.	K.B.
D.F.	G.L.
DATE	
RUN NO.	
DEPTH-DRILLER	
DEPTH-LOGGER	
BTM. LOG INTERVAL	
TOP LOG INTERVAL	
CASING-DRILLER	@
CASING-LOGGER	
BIT SIZE	
TYPE FLUID IN HOLE	
DENS. / VISC.	
PH / FLUID LOSS	
SOURCE OF SAMPLE	
RM @ MEAS. TEMP.	@
RMF @ MEAS. TEMP.	@
RMC @ MEAS. TEMP.	@
SOURCE RMF / RMC	
RM @ BHT	@
TIME SINCE CIRC.	
TIME SINCE STOP	
MAX. REC. TEMP.	
EQUIP. LOCATION	
RECORDED BY	
WITNESSED BY	

B.P.B. COAL QUALITY LOG

COAL BULK DENSITY

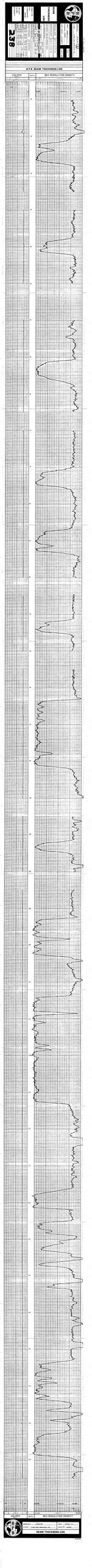
DATE
TIME
DEPTH
SPEED
CHART
CALIBRATION
DENS. CAL. CHECKS

COAL BULK DENSITY

DATE	
TIME	
DEPTH	
SPEED	
CHART	
CALIBRATION	
DENS. CAL. CHECKS	

COAL BULK DENSITY

COAL QUALITY LOG


BPB SEAM THICKNESS LOG
CALIPER
BED RESOLUTION DENSITY
SEAM THICKNESS LOG

BP

BRITISH PETROLEUM

CONTRACTOR
SCHLUMBERGER

CONTRACTOR'S REPRESENTATIVE
J. DAVIS

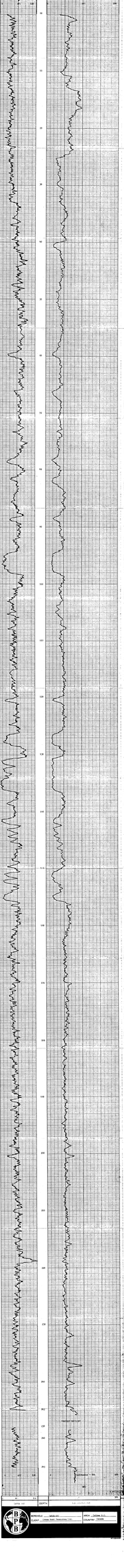
OPERATOR'S REPRESENTATIVE
J. DAVIS

OPERATOR
BP

CONTRACTOR'S REPORT NO.
2210

CONTRACTOR'S REPORT
CONTRACTOR'S REPORT

GR	DEPTH	SONIC TRANSIT TIME
0		100



BPB INSTRUMENTS (UK) LTD

238

DATE: 1984
CLIENT: Canada Fuel Associates Ltd.
WELL: 238
AREA: Hilton B.C.
COUNTRY: Canada

BOREHOLE DIA: 6 1/4 in
INDUCTION DIA: 1 3/4 in
EQUIPMENT AND RECORDING DATA
MAGNETIC DECLINATION: 0°
DATA RECORDED: 20/06/84
RECORDED BY: Mr. Hall
CALIBRATION: Mr. Hall
DATA PROCESSED BY: Mr. Hall
PROCESSED DATE: 20/06/84

238

DEPTH — PROTONIC MAGNETICS

CONDUCTIVITY — mS/m

0 — 100 — 200

Lateral Drift

Induction Response

DEPTH — PROTONIC MAGNETICS

CONDUCTIVITY — mS/m

0 — 100 — 200

Induction Response

BOREHOLE: 238
CLIENT: Canada Fuel Associates Ltd.
AREA: Hilton B.C.
COUNTRY: Canada

0235

TW 268

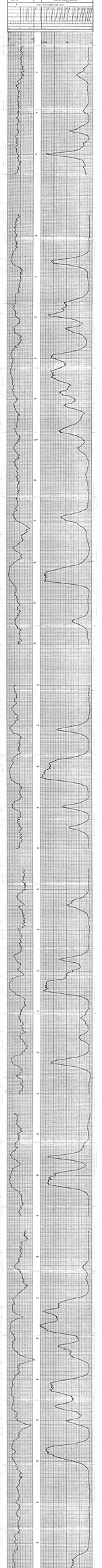
COMPANY	CONSOLIDATION COAL COMPANY		
WELL	238		
FIELD			
COUNTY	MARION	STATE	WEST VIRGINIA
LOCATION			
OTHER SERVICES			
SEC		TWP	
RGE		PERMANENT DATUM	GROUND LEVEL
ELEV.		LOG MEASURED FROM	KB
DRILLING MEASURED FROM	KB		

| | | |

238	
DATE	
TIME	
DEPTH	
DRILLER	
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 & RMC	
RM @ BHT	
MAX. REC. TEMP.	
EQUIP. LOCATION	
RECORDED BY	
WITNESSED BY	

EPA COAL QUALITY LOG

DATE 12/	DEPTH	COAL BULK DENSITY
		GAMMA RAY CORRECTION DATA



DATE 12/	DEPTH	COAL BULK DENSITY

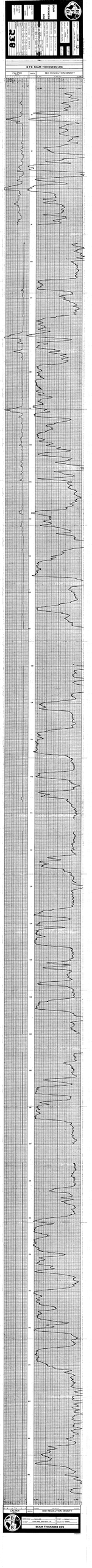
RECORDED BY	WITNESSED BY	DATE 12/
EQUIP. LOCATION		COUNTY
	COAL QUALITY LOG	STATE

COMPANY	[illegible]
WELL	[illegible]
FIELD	[illegible]
COUNTY	[illegible]
STATE	[illegible]
LOCATION	[illegible]
OTHER SERVICES	[illegible]
SEC	[illegible]
TWP	[illegible]
RGE	[illegible]
PERMANENT DATUM	[illegible]
ELEV.	[illegible]
LOG MEASURED FROM	[illegible]
DRILLING MEASURED FROM	[illegible]

2 38

B.P.A. SEAM THICKNESS LOG

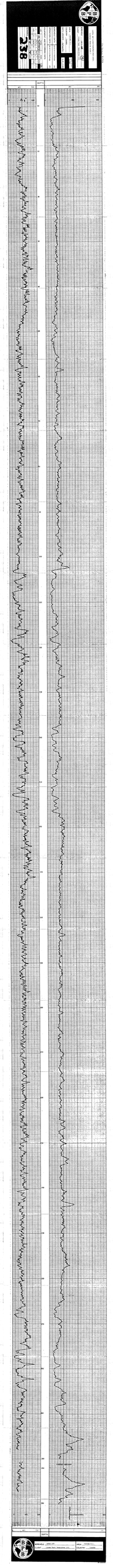
CALIPER	GR	BED RESOLUTION DENSITY

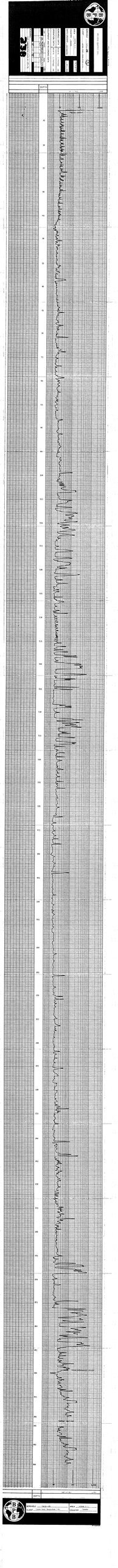


CALIPER	GR	BED RESOLUTION DENSITY

COMPANY : [illegible]	PAGE : [illegible]
WELL : [illegible]	DATE : [illegible]
FIELD : [illegible]	Log run by : [illegible]

SEAM THICKNESS LOG


238
DATE
DATE
DATE


BPB
BKC
DEPTH
GR 0 API 100
CALI 6 INCHES 16
DEPTH
BPB
REMARKS: TRIPLE COMBO
CLIENT: CONOCO PHILLIPS COMPANY
WELL: CONOCO 1
LOCATION: ALASKA

TW 270

TK-Telkum 8-5(3)A

TW-82D-270

Directional survey

230

LOG DEPTH	0110.00
TRUE DEPTH	0110.00
TILT	1.28 DG
BEARING	103.55 DG
NORTHING	-000.05
EASTING	+000.21

LOG DEPTH	0100.00
TRUE DEPTH	0100.00
TILT	1.13 DG
BEARING	84.44 DG
NORTHING	+000.00
EASTING	+000.00

238

BPB

COMPANY	BPB PLC
CLIENT	
AREA	
COUNTRY	
DATE	1-Jan-1900
TIME	00:00 AM

COAL LITHOLOGY LOG

BOREHOLE	
COORDINATES	
ELEVATION	
DATUM	
DATE SPUDDED	
DATE COMPLETED	
DRILLER	
DRILLING METHOD	
DRILLING FLUID	
DIP	
AZIMUTH	
TOTAL DEPTH	
DATE	

BOREHOLE TYPE
COORDINATES
DATUM
DATE SPUDDED
DATE COMPLETED
DRILLER
DRILLING METHOD
DRILLING FLUID
DIP
AZIMUTH
TOTAL DEPTH
DATE

CASING	
BIT	
DEPTH	
DATE	

COAL QUALITY LOG

BPB

BOREHOLE: [illegible] 270 (2)
CLIENT: [illegible]
AREA: [illegible]
COUNTRY: Canada
DATE LOGGED: 27/Jan/82
DEPTH SCALE: 1:200
2 or 5/100

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

LOG	SONDE	RECORDING SPEED	SONDE POSITION
GAMMA	108	2.5	1.3
SONDE	108	2.5	1.3

SONDE TYPE CALIBRATION
REFER TO LITHOLOGY LOG

COAL QUALITY LOG INTERVALS
FROM 110.0m TO 65.0m
FROM 110.0m TO 0.0m

LOG SUITE: COAL COMBINATION SONDE
GAMMA RAY
L.S. DENSITY

SONDE TYPE: COAL COMBINATION SONDE

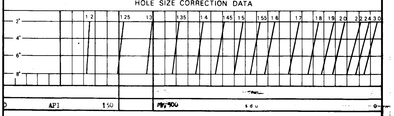
258

REMARKS: Logged through casing. Gamma scale changed at 90m.
Density: Logged through casing.

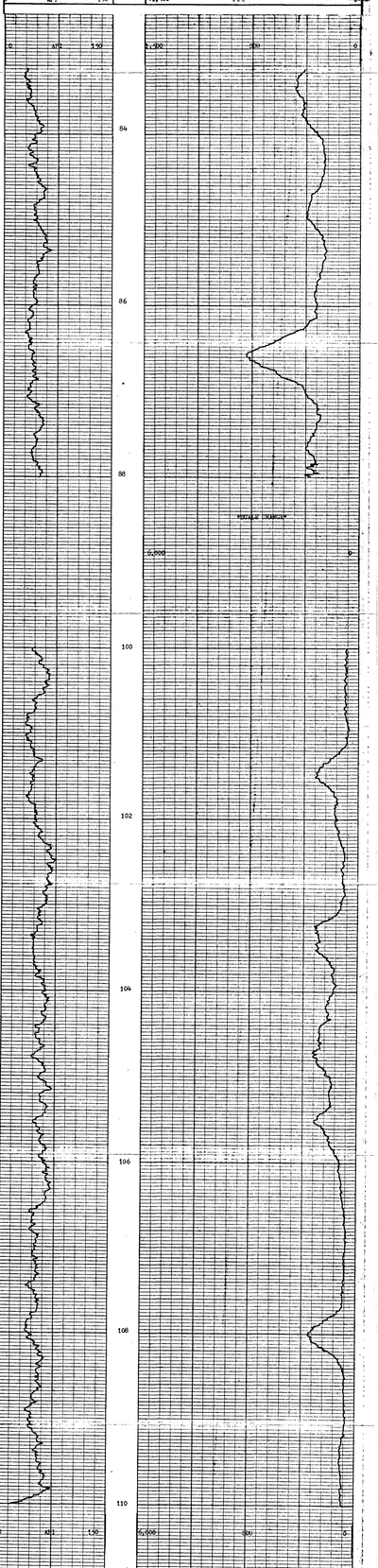
BPB COAL QUALITY LOG

	DEPTH	
GAMMA RAY		COAL BULK DENSITY (Slow)

HOLE SIZE CORRECTION DATA



0 API 150 — 2,000 kg/m³ (Slow) 0



0 API 150 — 6,000 kg/m³ (Slow) 0

	DEPTH	
GAMMA RAY		COAL BULK DENSITY (Slow)

BPB

BOREHOLE: [illegible] 270
CLIENT: [illegible]
AREA: [illegible]
COUNTRY: Canada

COAL QUALITY LOG

To Telkwa 60(3)A

BOREHOLE 2-820-270 (3)

CLIENT Crows Nest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

DATE LOGGED 22/Sep/82

DEPTH SCALE 1:20

1 OF 5 LOGS

SEAM THICKNESS LOG

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

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

SIDE WALL POSITION

LOG	TAPING		PANEL				
	LOW	HIGH	SCALE	SPEED	SPEED	NORM	
CALIPER	Y	20/B	R	20/M	1	-	-
BR DENSITY	Y	20/B	R	20/M	-	-.3	-

SOURCE SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: CALIPER, BR DENSITY

SEAM THICKNESS LOG INTERVALS

FROM	110.6m	88.0m	
TO	1.0m	85.0m	
INTERVAL	1.0m	3.0m	
FROM			INTERVAL
TO			TOTAL
INTERVAL			113

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REMARKS

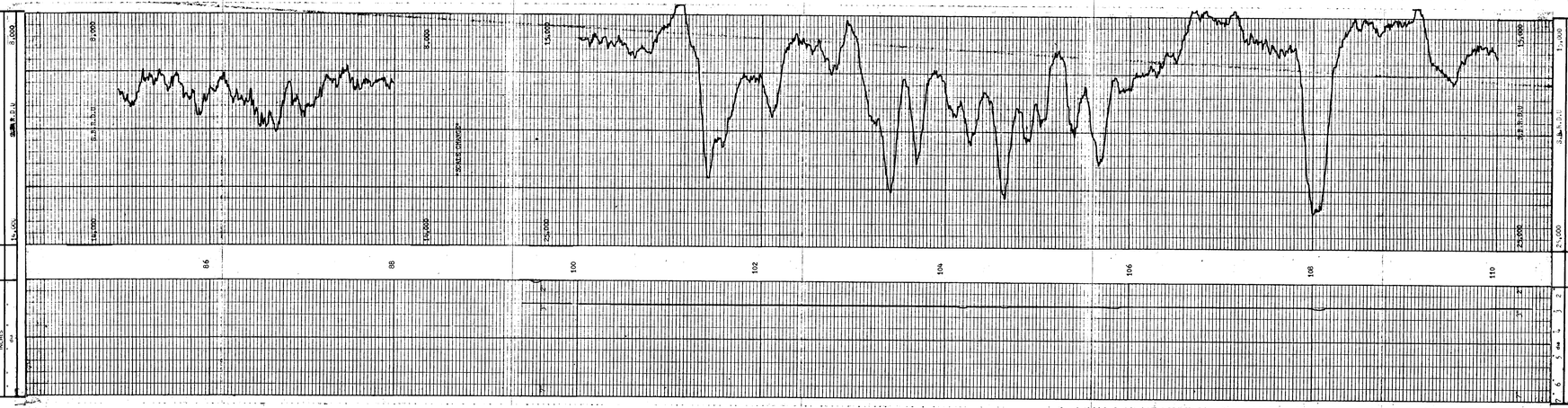
Please note scale change for topmost 1m total (logged through casing).

B P B SEAM THICKNESS LOG

BED RESOLUTION DENSITY

CALIPER INCHES

DEPTH



BED RESOLUTION DENSITY

DEPTH

CALIPER INCHES

BOREHOLE 2-820-270

CLIENT Crows Nest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

SEAM THICKNESS LOG

BPB

COMPUTED LITHOLOGY LOG

BOREHOLE: [illegible] (4)
CLIENT: [illegible]
AREA: [illegible]
COUNTRY: Canada
DATE LOGGED: [illegible]

SCALE: 1:200
SCALE: 1:500

BOREHOLE DATA	[illegible]
OPERATOR DATA	[illegible]
COMPANY ANALYSIS DATA	[illegible]
REMARKS	[illegible]

239

DEPTH: 0 — 500

SANDSTONE POROSITY

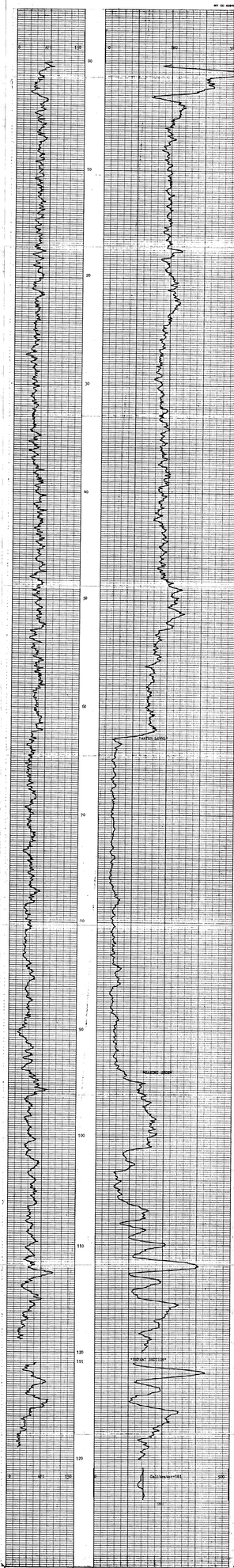
0 — 10% — 20% — 30% — 40% — 50%

4" — 6" — 8"

200 — 300 — 400

0% — 50%

MT 20 ARMS 8



BPB

BOREHOLE: [illegible]
CLIENT: [illegible]
AREA: [illegible]
COUNTRY: Canada

TK-Telkwa 82(3)A

FOCUSSED ELECTRIC LOG.

BOREHOLE TK82B-270 (5)

CLIENT Crows Nest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

DATE LOGGED 27/Sep/82

DEPTH SCALE 1:100

5 OF 5 LOGS

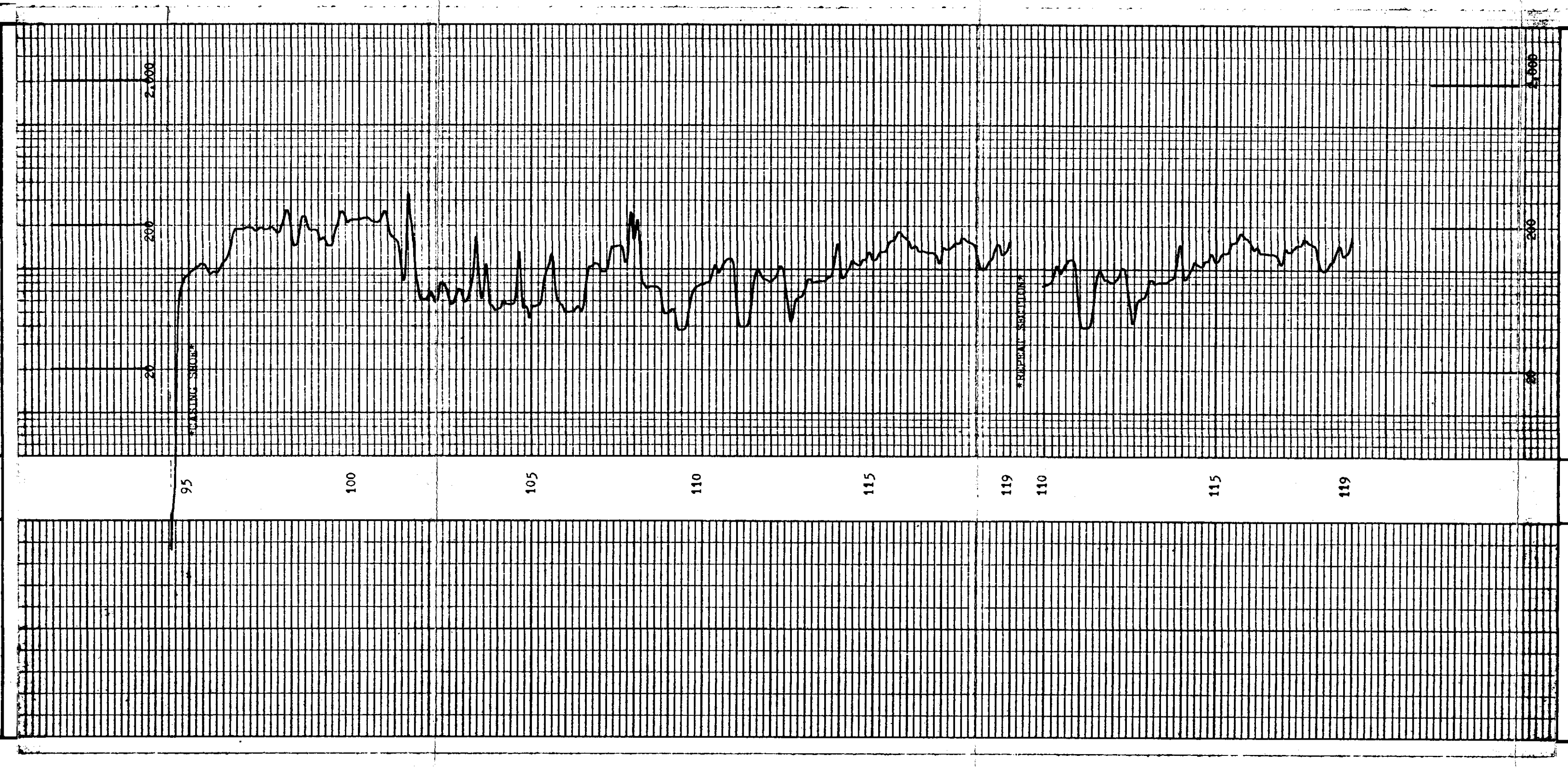
BOREHOLE DATA	REFER TO Lithology	LOG
OPERATION DATA	REFER TO Lithology	LOG

EQUIPMENT AND RECORDING DATA

LOG	TAPING			PANEL			CAL COEFF
	LOG TAPED	RECORD SPEED	DIRECT or REPLAY	SPEED	T C SECS	NORM	
F/E	Y	9m/m	D	9m/m	3		
		SONDE NO		SOURCE NO			

REMARKS

238



BOREHOLE TK82B-270

CLIENT Crows Nest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

MY 5242532

TW 271

238

COMPANY	BP EXPLORATION (ALASKA) INC.
WELL	PRUDHOE BAY UNIT DS 4-10
FIELD	PRUDHOE BAY
COUNTY	NORTH SLOPE
STATE	ALASKA
API NO.	50-029-20304
LOCATION	2310' FNL & 2310' FEL
SECTION	10
TOWNSHIP	11 N
RANGE	14 E
PERMANENT DATUM	MSL
ELEVATION	0
LOG MEASURED FROM	RKB
DRILLING MEASURED FROM	RKB
ELEVATIONS	K.B. 0 D.F. N/A G.L. N/A
DATE	12-MAR-1980
RUN NO.	ONE
TYPE LOG	DIL/BHC/CNL/GR
DEPTH-DRILLER	10,000
DEPTH-LOGGER	9,998
BTM. LOG INTERVAL	9,996
TOP LOG INTERVAL	9,000
CASING-DRILLER	9 5/8 @ 9,000
CASING-LOGGER	N/A
BIT SIZE	8 1/2
TYPE FLUID IN HOLE	GEL-CHEM
DENSITY	10.0
VISCOSITY	40
PH	10.5
FLUID LOSS	4.0
SOURCE OF SAMPLE	PIT
RM @ MEAS. TEMP.	.150 @ 70
RMF @ MEAS. TEMP.	.150 @ 70
RMC @ MEAS. TEMP.	.150 @ 70
SOURCE RMF & RMC	MEAS.
RM @ BHT	.076 @ 180
TIME SINCE CIRCULATION	6 HRS
MAX. REC. TEMP.	180
EQUIPMENT NO.	2238
LOCATION	PRUDHOE BAY
RECORDED BY	D. WILLIAMS
WITNESSED BY	D. MCKAY

EQUIPMENT AND RECORDING DATA

TOOL	CALIBRATOR		CAPACITY		CAPACITY		TYPE		SERIAL NO.		LOCATION		
TYPE	SERIAL NO.	VALUE	ALL SCALES	LOG	INTERVAL	TYPE					MAKE	SIZE	DEPTH
DIL	1-DIL	20K		10K		N/A	N		N				
CNL	1-CNL			20K	0	N/A	N		N		1-BOWEN	20K	20K
BHC	1-BHC			20K	0	N/A	N		N		1-BOWEN	20K	20K

ADDITIONAL SCHEDULE RUN

TOOL	LOG	INTERVAL	TYPE	SERIAL NO.
DIL	N/A	9,996		

NOTE TO ANALYSTS/PROGRAMMERS

REMARKS

RN, NORM, DATA TAKEN WHEN SPECIFICATIONS DECEMBER 1,JANUARY, MAX.,FEB.,MAR. 24, 1980.

LIME DOLOMITE

COAL

BASALT CON.

CARBONACEOUS SHALE

DOLO SHALE

SHALE

MUDSTONE

SILTSTONE

LIMESTONE (FINE)

LIMESTONE (MEDIUM)

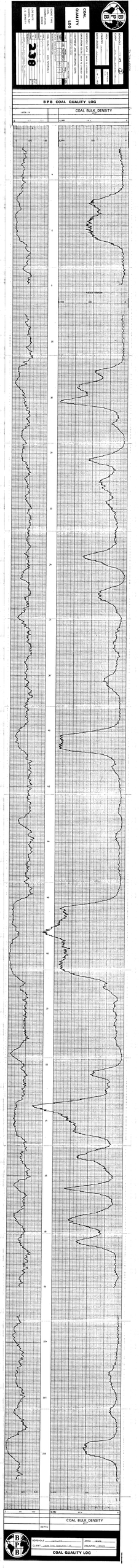
LIMESTONE (COARSE)

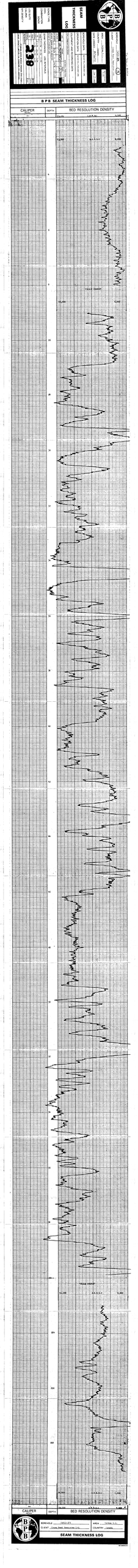
LIMESTONE (CONG)

CHALLENGER

CHERTY

CHERT


COAL QUALITY LOG
BPB COAL QUALITY LOG
COAL BULK DENSITY
DEPTH
COAL BULK DENSITY
COAL QUALITY LOG


BPB
SEAM THICKNESS LOG
COMPANY
WELL
COUNTY
STATE
DATE
DIAMOND CORE
DIAMOND CORE
DIAMOND COR

238
DEPTH
DEPTH
BOREHOLE
CURVE
AREA
COUNTRY

TW 272

238

BHP

COMPANY: BHP PETROLEUM (BERMUDA) LIMITED
WELL: BERMUDA 1
FIELD: BERMUDA
COUNTRY: BERMUDA
DATE RECORDED: 26-10-1987
DATE PRINTED: 26-10-1987

SONDE NO.: 2
ARRAY: DUAL INDUCTION
SERVICE: SCHLUMBERGER

DATUM	KB
ELEVATION	0.0
DATUM ABOVE PERMANENT DATUM	0.0
LOG MEASURED FROM	KB
DRILLING MEASURED FROM	KB
DATUM ABOVE GROUND LEVEL	0.0
DATUM ABOVE MEAN SEA LEVEL	0.0
DATUM ABOVE MEAN LOW WATER	0.0
DATUM ABOVE MEAN HIGH WATER	0.0
DATUM ABOVE MEAN LOW WATER SPRING	0.0
DATUM ABOVE MEAN HIGH WATER SPRING	0.0
DATUM ABOVE MEAN SEA LEVEL	0.0
DATUM ABOVE ALTERNATE DATUM	0.0
DATUM ABOVE PERMANENT DATUM	0.0
ELEVATION OF KELLY BUSHING	0.0
ELEVATION OF DERRICK FLOOR	0.0
ELEVATION OF GROUND LEVEL	0.0

LOG MEASURED FROM	KB
DRILLING MEASURED FROM	KB
TOP LOG INTERVAL	0.0
BOTTOM LOG INTERVAL	1,200.0
CASING DRILLER	0.0
CASING LOGGER	0.0
BIT SIZE	0.0
TYPE FLUID IN HOLE	BRINE
DENSITY	0.0
VISCOSITY	0.0
PH	0.0
FLUID LOSS	0.0
SOURCE OF SAMPLE	
RM AT MEASURED TEMPERATURE	0.0
RMF AT MEASURED TEMPERATURE	0.0
RMC AT MEASURED TEMPERATURE	0.0
SOURCE RMF	
SOURCE RMC	
RM AT BHT	0.0
TIME SINCE CIRCULATION	0.0
MAX. RECORDED TEMPERATURE	0.0
EQUIPMENT NUMBER	
LOCATION	
RECORDED BY	
WITNESSED BY	

RUN NUMBER	ONE
TIME LOGGER ON BOTTOM	0.0
TIME CIRCULATION STOPPED	0.0
LOGGING DISTANCE	1,200.0
LOGGING SPEED	0.0
MAXIMUM RECORDED TEMPERATURE	0.0
EQUIPMENT NUMBER	
LOCATION	
RECORDED BY	
WITNESSED BY	

DENSITY	
VISCOSITY	
PH	
FLUID LOSS	
SOURCE OF SAMPLE	
RM AT MEASURED TEMPERATURE	
RMF AT MEASURED TEMPERATURE	
RMC AT MEASURED TEMPERATURE	
SOURCE RMF	
SOURCE RMC	
RM AT BHT	
TIME SINCE CIRCULATION	
MAX. RECORDED TEMPERATURE	
EQUIPMENT NUMBER	
LOCATION	
RECORDED BY	
WITNESSED BY	

REMARKS: 4.5" DRILL PIPE IN HOLE

EQUIPMENT AND RECORDING DATA

LOG	EQUIPMENT		TAPING			PANEL		CAL.	DEPTHS		
SONDE	SONDE	SOURCE	ZULMARK	LOG SPEED	PRESSURE	TEMPERATURE	DENSITY	ATT.	NORM	FROM	TO	NORM	
	1506	2521	391	T	9N/A	9	9N/A	1	3.35	119	00	119	
CB	-	-	0506	T	9N/A	9	9N/A	-3.40	-	119	00	119	
LDD	-	-											

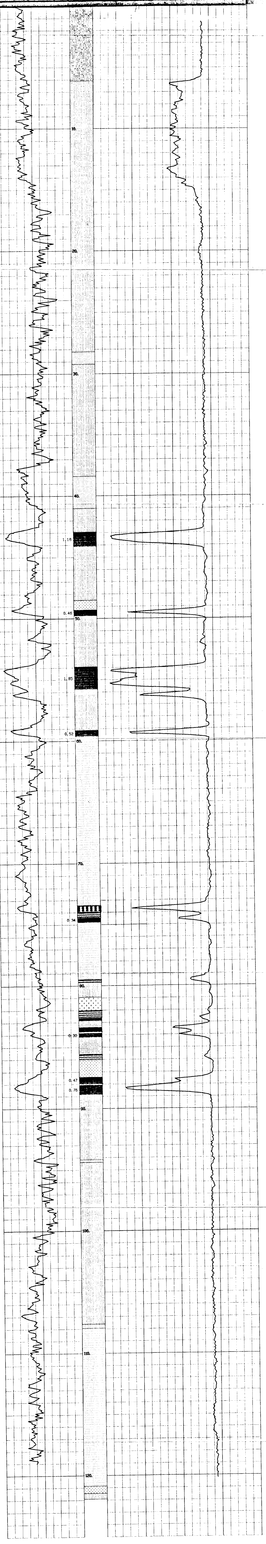
ADDITIONAL SONDES RUN			
SONDE	LOG	GENERAL DESCRIPTION OF SCALE/CONDITION	
216	N/A	5x100	

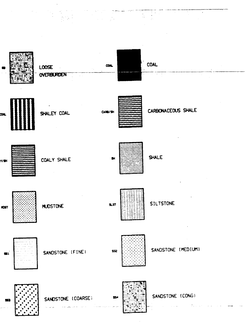
REFER TO ADDITIONAL HEADINGS

REMARKS

No open hole logs were available on this hole.

DEPTH





BPB INSTRUMENTS (GEOPHYSICAL) LIMITED

COAL QUALITY LOG

BOREHOLE: 238

DATE: 1-3-84

DRILLER: CAPPS RAY

DRILLING MEDIUM: WATER

ZONE: CONNAUGHT

AREA: NORTH

DRILLING DATA: DRILLED BY: CONTINENTAL DRILLING CO. LTD.

DRILLING DATE: 1-3-84

DRILLING DIAMETER: 6 1/2 INCHES

DRILLING DEPTH: 100 FEET

CASING DIAMETER: 6 1/2 INCHES

CASING DEPTH: 100 FEET

CASING DATA: CASING DATE: 1-3-84

CASING DIAMETER: 6 1/2 INCHES

CASING DEPTH: 100 FEET

CEMENT AND GROUTING DATA

GROUTING DATE: 1-3-84

GROUTING DEPTH: 100 FEET

CEMENT: 10 SACKS

GROUTING: 10 SACKS

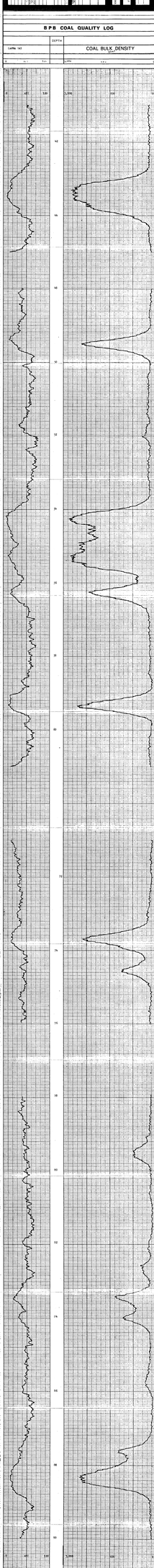
BOREHOLE: 238

FILE: 1-3-84

DATE: 1-3-84

BPB COAL QUALITY LOG

CAPS 167	DEPTH	COAL BULK DENSITY
0 40 80		1.250 1.850 2



CAPS 167	DEPTH	COAL BULK DENSITY
0 40 80		1.250 1.850 2

BOREHOLE: 238 FILE: 1-3-84 AREA: NORTH

CLIENT: CROWS NEST RESOURCES LTD. COUNTRY: CANADA

COAL QUALITY LOG

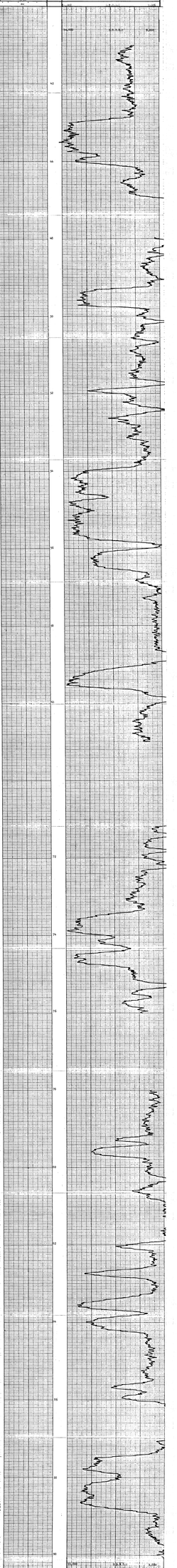
BPB

SEAM THICKNESS LOG

BOREHOLE: HCC-D-7
AREA: ITAHI
COUNTRY: INDIA
CLIENT: ITAHI Coal Washeries Ltd.
DATE LOGGED: 20-10-87
BOREHOLE DATA: DIA 8.5 / DEPTH 100.00 m
PROJECT DATA: BED RESOLUTION DATA
SEAM THICKNESS: 0.00 METRES
CALIBRATION: 1 CPS = 0.0 g/cc
DENSITY: 2.0 g/cc
DATE: 20-10-87
LOGGED BY: K.P. SINGH
CHECKED BY: K.P. SINGH
REMARKS: 2.31 m
SEAM TYPE: COAL
SEAM NAME: BOKARO
CALIBRATION: 100 CPS = 1.0 g/cc DENSITY

B P B SEAM THICKNESS LOG

CALIBRATION	DEPTH	BED RESOLUTION DENSITY
CPS		1.0 g/cc — 2.0 g/cc — 3.0 g/cc



CALIBRATION	DEPTH	BED RESOLUTION DENSITY
CPS		1.0 g/cc — 2.0 g/cc — 3.0 g/cc

BOREHOLE: HCC-D-7 AREA: ITAHI
CLIENT: ITAHI Coal Washeries Ltd. COUNTRY: INDIA

SEAM THICKNESS LOG

BPB

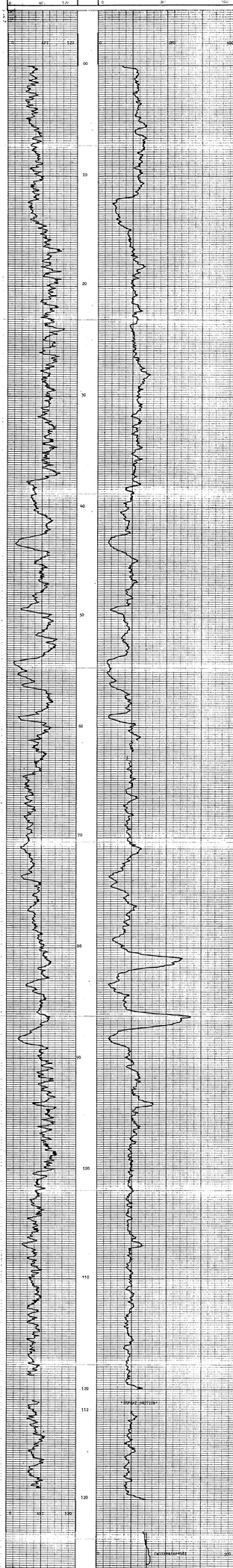
BPB

DOWNHOLE TECHNOLOGIES LTD.
DIVISION OF BPB INSTRUMENTS

BOREHOLE #2 (4)
CLIENT Trans Globe Resources Ltd.
AREA Colombia
COUNTRY
DATE RECORDED 26-Jan-86

INSTRUMENT DATA Serial No. 1-1-1 Cal. 1-1-1
OPERATION DATA Operator 1-1-1 Log No. 1-1-1
EQUIPMENT AND RECORDING DATA
Probe Type Gamma Ray Probe
Recorder Type Gamma Ray Recorder
Recorder Serial No. 1-1-1
Recorded Channel 1-1-1
Recorded Scale 1-1-1
Recorded Speed 1-1-1
Recorded Sensitivity 1-1-1
Recorded Time Constant 1-1-1
Recorded Offset 1-1-1
Recorded Gain 1-1-1
Recorded Filter 1-1-1
Recorded Polarity 1-1-1
Recorded Direction 1-1-1
Recorded Position 1-1-1
Recorded Other 1-1-1

REMARKS
238



BPB

BOREHOLE #2(2)-2(2)
CLIENT Trans Globe Resources Ltd.
AREA Colombia S.A.
COUNTRY Canada