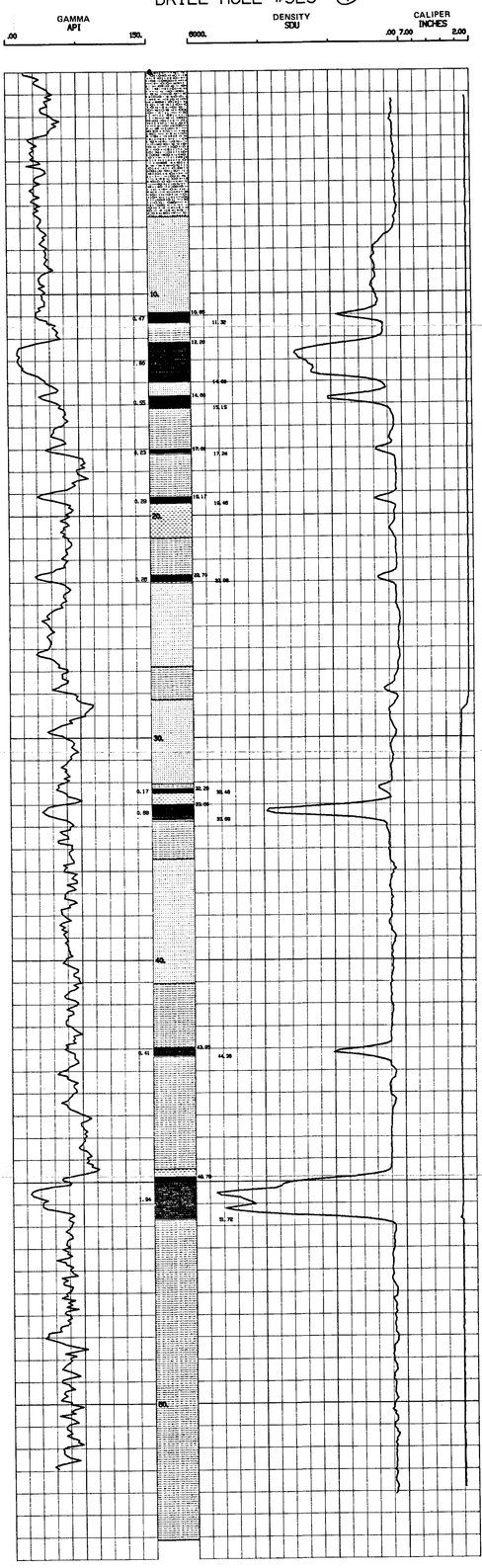
TK. TELKWA 83/3A

TELKWA PROJECT

239

DRILL HOLE #325 ①



OB LOOSE OVERBURDEN

COAL COAL

SHALEY/COAL SHALEY COAL

CARB/SH CARBONACEOUS SHALE

COALY/SH COALY SHALE

SH SHALE

MDST MUDSTONE

SLST SILTSTONE

SS1 SANDSTONE (FINE)

SS2 SANDSTONE (MEDIUM)

SS3 SANDSTONE (COARSE)

SS4 SANDSTONE (CONG)

CONG CONGLOMERATE

IRST IRONSTONE

VOLC IGNEOUS

239

IK Team 82/84

BPB

BOREHOLE
CLIENT
AREA
COUNTRY
DATE COMPLETED
DATE LOGGED

SEAM THICKNESS LOG

BOREHOLE DATA
OPERATION DATA
EQUIPMENT AND RECORDING DATA

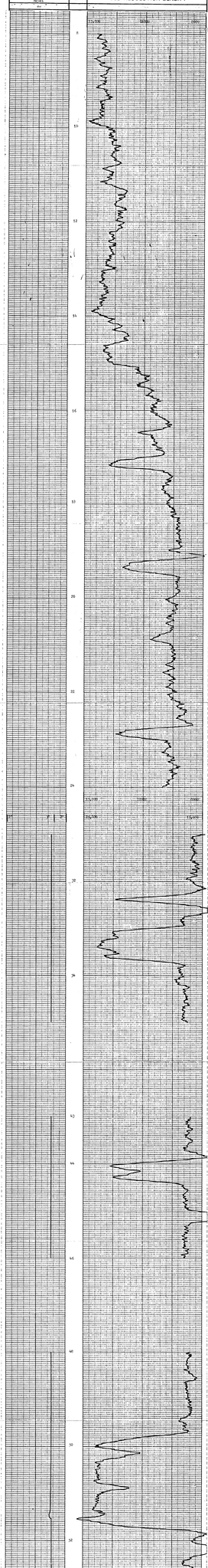
DENSITY TYPE
COAL
CONVERSION
SENSOR

DENSITY
CALIPER
SEAM THICKNESS

SEAM THICKNESS LOG INTERVALS

B P B SEAM THICKNESS LOG

CALIPER (INCHES) | DEPTH | BED RESOLUTION DENSITY



CALIPER (INCHES) | DEPTH | BED RESOLUTION DENSITY

BPB

BOREHOLE
CLIENT
AREA
COUNTRY

SEAM THICKNESS LOG

239

COAL QUALITY LOG

BPB

BORE HOLE	
CLIENT	
AREA	
COUNTY	
STATE	
PROVINCE	
LOCATION	
SERVICE CO.	
RIG	
DATE	
RUN NO.	
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.	
EQUIPMENT NO.	
LOCATION	
RECORDED BY	
WITNESSED BY	

SOURCE TYPE	
COMBINATION SONDE	
COAL QUALITY	LOG INTERVALS
LOG SUITE	
COAL QUALITY	
L.S. DENSITY	
REMARKS	

RECORDED DATA

TK - TELKWA 83(2)A

239

BOREHOLE 325 (4)

CLIENT

AREA

COUNTRY

DATE LOGGED

DEPTH SCALE

OF LOGS

BOREHOLE DATA REFER TO LOG

OPERATION DATA REFER TO LOG

EQUIPMENT AND RECORDING DATA

LOG		PANEL		CAL COLLE
	LOG RATES	TAPING RECORDING SPEED	NO REPLAY	SPEED	S.C.	NORM

SCALE FACTOR

MONITOR

REMARKS

DEPTH

SANDSTONE POROSITY

BOREHOLE

CLIENT

AREA

COUNTRY

DEPTH

1K - Elkum 83(3)A

239

BPB

BOREHOLE 325 (5)

CLIENT

AREA

COUNTRY

DATE LOGGED

DEPTH SCALE

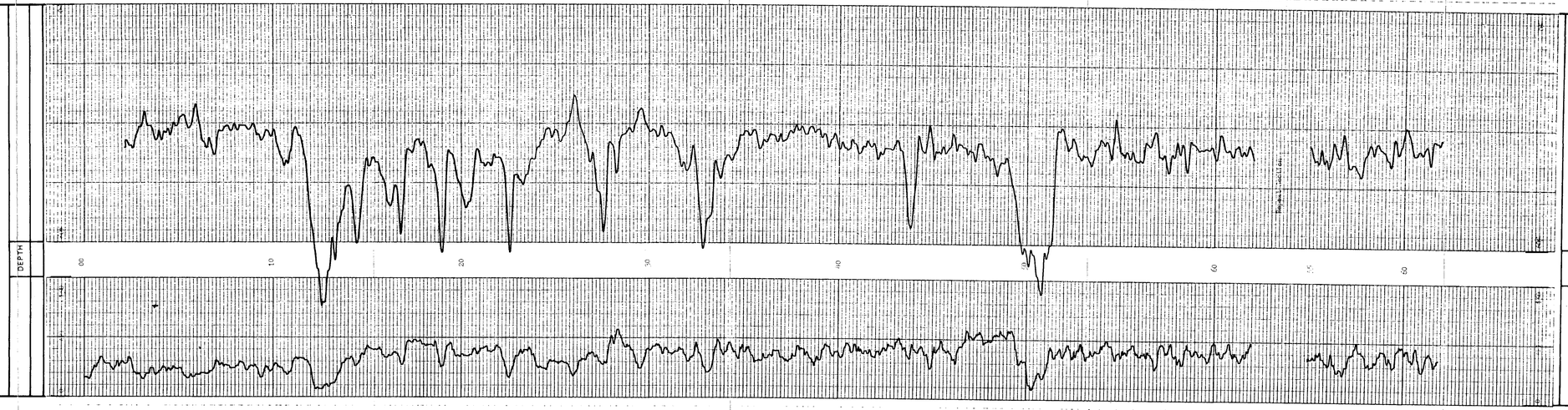
OF LOGS

BOREHOLE DATA	REFER TO	LOG
OPERATION DATA	REFER TO	LOG

EQUIPMENT AND RECORDING DATA

LOG	TAPING			PANEL			CAL COEFF
	LOG TAPED	RECORDER SPEED	RECORDER REPLAY	SPEED	V.F. SPEED	NORM	
	SOURCE No			MODEL No			

REMARKS



DEPTH

AREA

COUNTRY

BOREHOLE

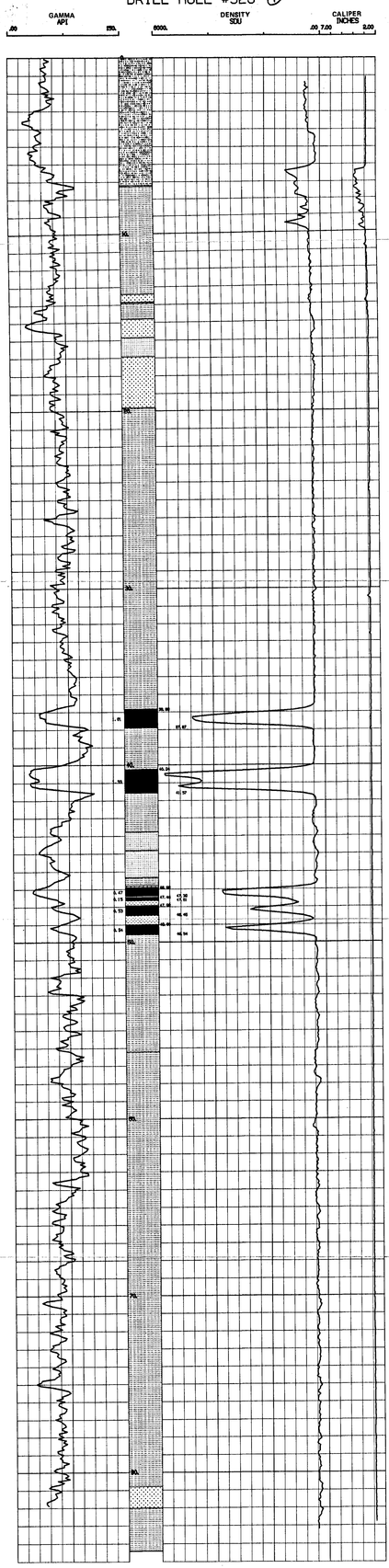
CLIENT

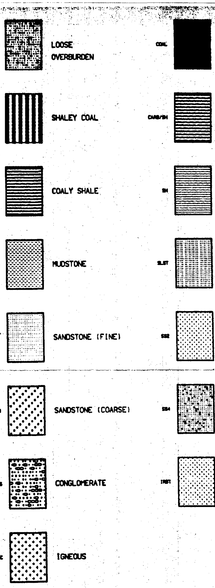
BPB

TK-Telkwa 83/3A

TELKWA PROJECT 239

DRILL HOLE #326 ①





TK - TELKWA 83 (3)A

239

BPB

BOREHOLE 2830-326 (2)

CLIENT Crows Nest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

DATE LOGGED 28/Jun/83

DEPTH SCALE 1:200

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

SIDEWALL POSITION

LOG	TAPING			PANEL			NORM
	LOG TAPE	RECORDING SPEED	PRE-AMP	SPEED	SPX	NORM	
CALIPER	Y	m/m	A	m/m	-	-	-
B.R DENSITY	Y	m/m	A	m/m	-	-	-

SONDE TYPE COAL COMBINATION SONDE

SOURCE SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG INTERVALS

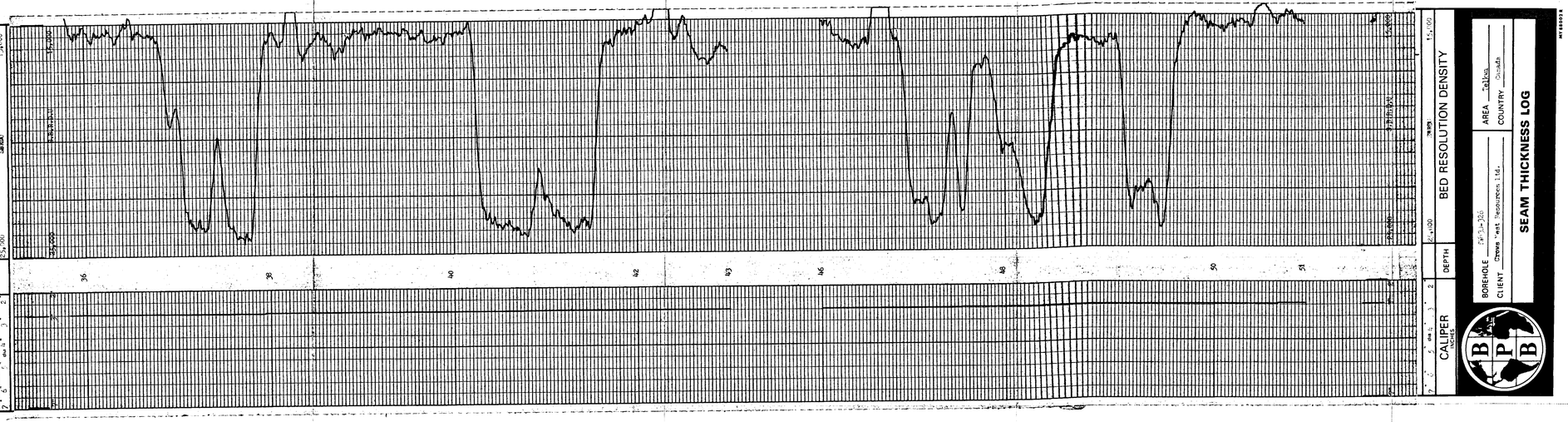
FROM	43.0m	43.0m
TO	46.0m	36.0m
INTERVAL	3.0m	7.0m

FROM		INTERVAL
TO		TOTAL
INTERVAL		10.0

LOG SUITE CALIPER B.R DENSITY

REMARKS

B P B SEAM THICKNESS LOG



BOREHOLE 2830-326

CLIENT Crows Nest Resources Ltd.

AREA Telkwa

COUNTRY Canada

SEAM THICKNESS LOG

BPB

Tx-Telkwa 83-3A

239

8 1 4 2 0 1 5 1 - 3 r e c 0 2

BPB

BOREHOLE 83-326 (3)

CLIENT Crows Nest Resources Ltd.

AREA

COUNTRY

DATE LOGGED

DEPTH SCALE 1:120

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			CAL. CHECK
	LOG TAPE	RECORDING SPEED	DELAY	SPEED	% SCALE	NORM	
GAMMA RAY			D	m/m	2		
L.S. DENSITY	7	m/m	D	m/m	1		

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	41.0m	43.0m	
TO	42.0m	50.0m	
INTERVAL	1.0m	7.0m	
FROM			INTERVAL TOTAL
TO			
INTERVAL			8.0

REMARKS

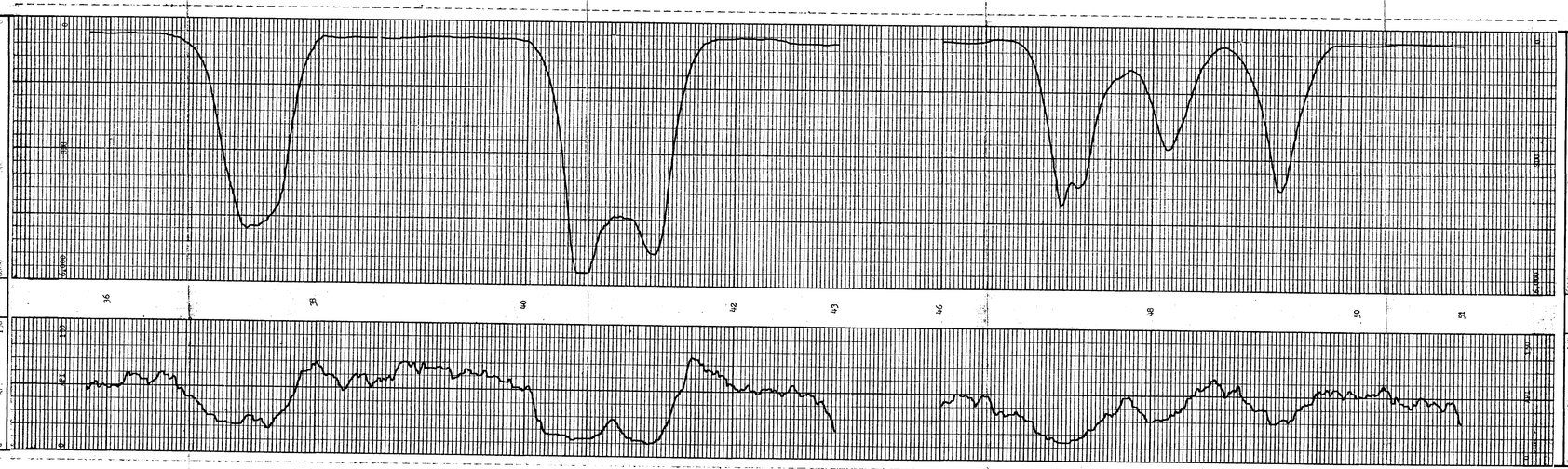
BPB COAL QUALITY LOG

DEPTH

GAMMA RAY

COAL BULK DENSITY g/cm³

HOLE SIZE CORRECTION DATA



COAL BULK DENSITY g/cm³

GAMMA RAY

DEPTH

BOREHOLE 83-326

CLIENT Crows Nest Resources Ltd.

AREA Telkwa Area

COUNTRY Canada

COAL QUALITY LOG

MY 88002 B

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Gamma Ray & Neutron-Neutron

BOREHOLE TW-3P-126
CLIENT Crown Next Resources Ltd.

AREA Tolima P.D.
COUNTRY Colombia
DATE LOGGED 27/10/73

BOREHOLE DATA
RUN 1 TO 1 BOTTOM LOG
RUN TO TOP LOG

OPERATION DATA
RUN 1 TO 1 BOTTOM LOG
RUN TO TOP LOG

EQUIPMENT AND RECORDING DATA

LOG	TAPING	PANEL	SCALE
GAMMA RAY	1	1	0-150 API
NEUTRON-NEUTRON	1	1	0-500

REMARKS

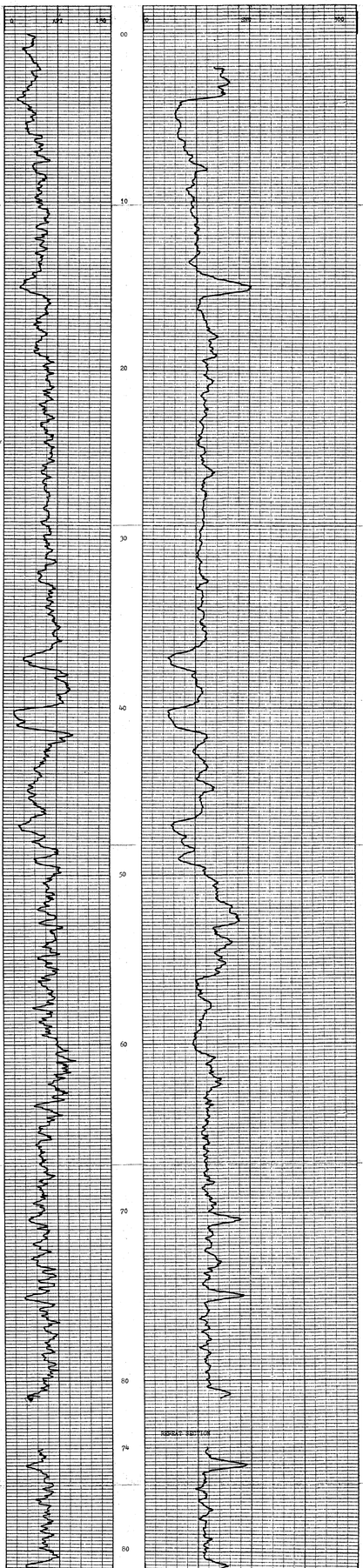
GAMMA RAY	DEPTH	NEUTRON-NEUTRON
0 API 150		0 CNT 500

SANDSTONE POROSITY

0 50% 40% 30% 25% 250 20% 15% 10% 500

4" 6" 8"

MY (3) A36431 R



GAMMA RAY	DEPTH	NEUTRON-NEUTRON
0 API 150		0 CNT 500

BOREHOLE TW-3P-126
CLIENT Crown Next Resources Ltd.
AREA Tolima P.D.
COUNTRY Colombia

MY A36431R

239

1x - Texaco 8(7)

BPB

BOREHOLE 326 (5)

CLIENT

AREA

COUNTY

DATE LOGGED

BOREHOLE DATA

OPERATION DATA

EQUIPMENT AND RECORDING DATA

REMARKS

DEPTH

00

10

20

30

40

50

60

70

80

74

80

Repeat section

DEPTH

BOREHOLE

CLIENT

AREA

COUNTRY

MY 4364435

Tk-Telkwa 83D/6

DIPMETER ANALYSIS

239

CLIENT___ CROWS NEST RESOURCES
BOREHOLE_ TW 83D-326 (6)
AREA_____ TELKWA, B.C.
COUNTRY__ CANADA

DATE LOGGED.....28-JUN-83
DATE PROCESSED..07-JUL-83

COMMENTS.....

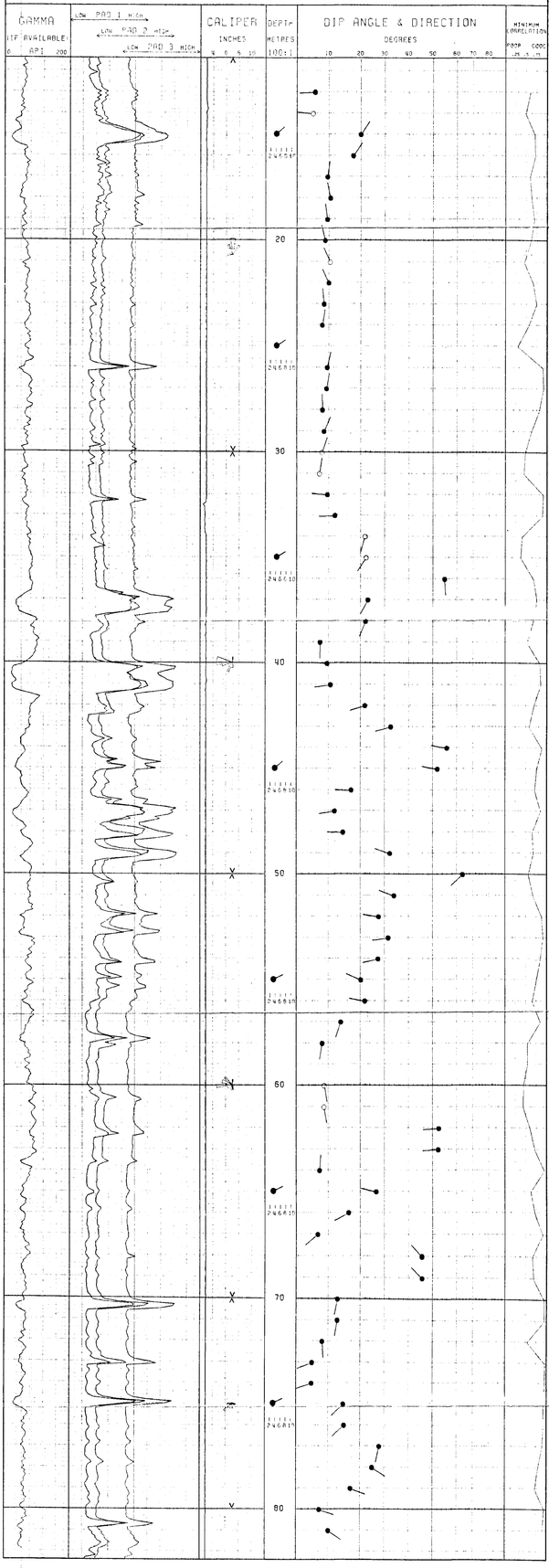
INTERPRETATION PARAMETERS

STEP 1.00M.
INTERVAL 2.00M.
SEARCH ANGLE 80.
DECLINATION 26.0 EAST
DEPTH RANGE 11.40 - 82.40M.
DATE PROCESSED 07-JUL-83

AVERAGE BOREHOLE DEVIATION & DIRECTION
ANNOTATED EVERY 10.0M.

ROSE DIAGRAMS SEGMENTED EVERY TEN DEGREES.
1% RADIUS PER DIP MARKER DISPLAYED

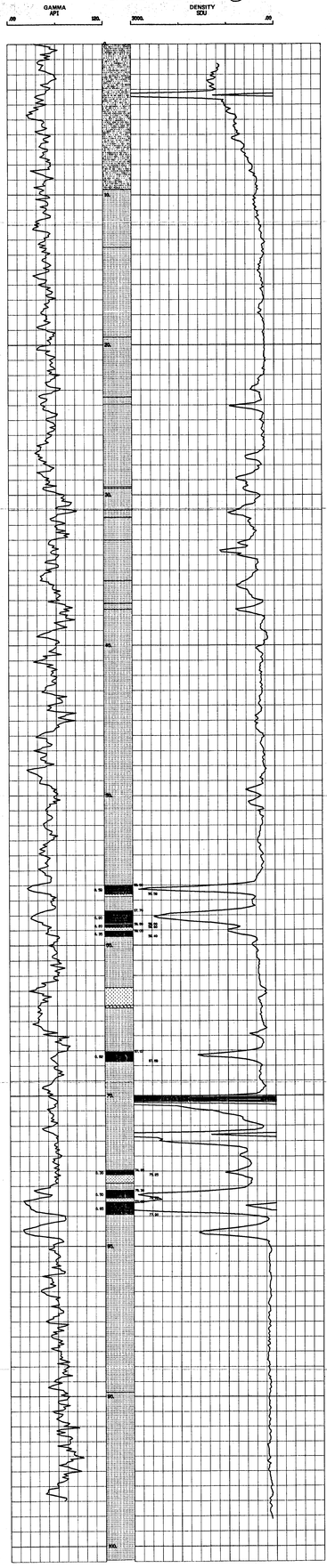
LEGEND:
GOOD (+0.50)
FAIR (+0.30)

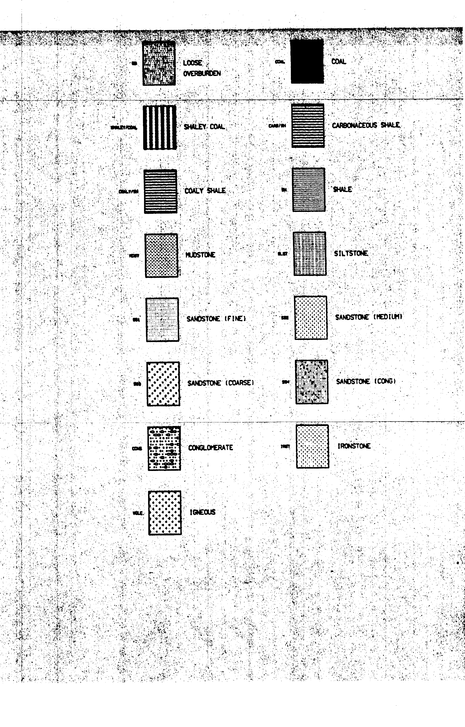


Int. Telkwa 93G/A

TELKWA PROJECT 239

DRILL HOLE #327 (1)





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TK - Tracum 81SK

BPB

BOREHOLE 97 (2)
CLIENT Chevron Standard Resources Ltd.
AREA
COUNTRY Canada
DATE LOGGED

EQUIPMENT AND RECORDING DATA

LOG	EQUIPMENT: SONDE	SOURCE	CALIBRATOR	TAPING: LOG SPEED	RECORDING SPEED	DIRECTION	SPEED (FT/MIN)	PANEL: GAIN	CALIBRATION	DEPTHS: FROM	TO	MISSING	
Gamma	1528		.29	T	5	D	30	1		0	90		
LSD	1528		6.9	T	5	D	30			90	97		

ADDITIONAL SONDES RUN

SONDE	LOG	DEPTHS: FROM	TO
NA	DIR	4.1	

REFER TO ADDITIONAL HEADINGS

REMARKS

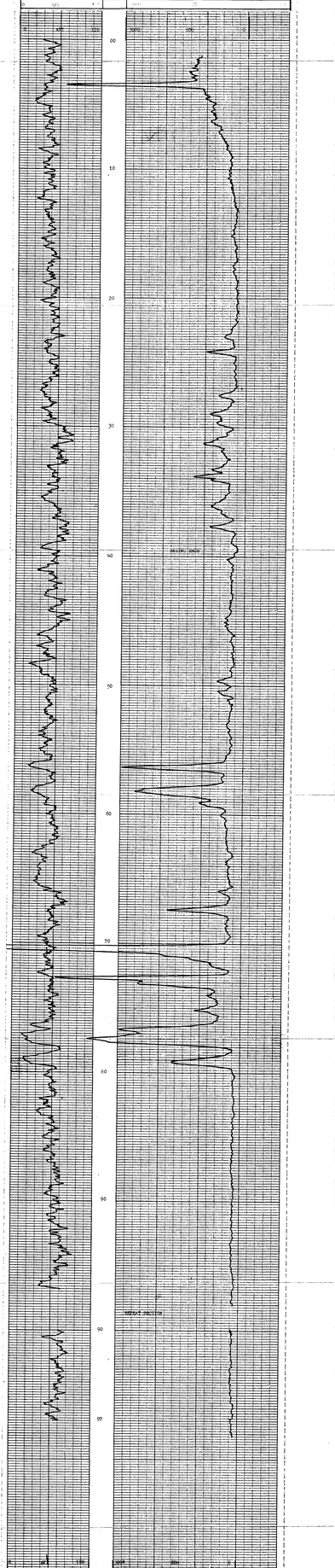
[illegible]

BOREHOLE DATA

CASING SIZE	
CASING DEPTH	
BIT SIZE	
KRUSH SIZE	
FLUID LEVEL	
FLUID TYPE	
FLUID DENSITY	
FLUID VISCOSITY	
FLUID PH	
FLUID RESISTIVITY	
SOURCE STRENGTH	
RECORDED BY	
WITNESSED BY	

OPERATION DATA

RIG	
ELEVATION	
DATE	
TIME	
DRILLER'S TD	
LOGGER'S TD	
TOP LOG INTERVAL	
BOTTOM LOG INTERVAL	
LOGGING DISTANCE	
LOGGING SPEED	
MAX. RECORDED TEMP.	
EQUIPMENT NO.	
LOCATION	
RECORDED BY	
WITNESSED BY	



BOREHOLE 97 (2)
CLIENT Chevron Standard Resources Ltd.
AREA
COUNTRY Canada

239

BPB

BOREHOLE DP-87-307 (3)
CLIENT Crows Nest Resources Ltd.
OPERATOR
AREA Telkwa B.C.
COUNTRY Canada
DATE LOGGED 30/Jan/87
JOB No. 1003

SEAM THICKNESS LOG

BOREHOLE DATA
RECEIVER DIAMETER 0.06
OPERATION DATA
RECEIVER DIAMETER 0.06
EQUIPMENT AND RECORDING DATA
COAL COMBINATION SONDE

LOG	TAPING	SPEED	PRINT
SONDE TYPE			
COAL COMBINATION SONDE	1	30 m/m	20 m/m
LOG SUITE	2	30 m/m	20 m/m
CALIPER	3	30 m/m	20 m/m
BR DENSITY	4	30 m/m	20 m/m

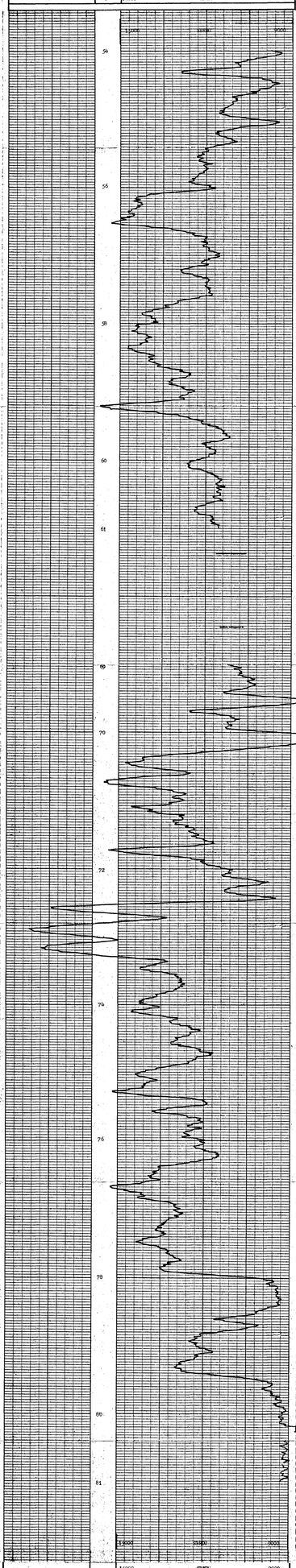
	LOG	PRINT
PRINT SCALE	1:100	1:50
VERTICAL	1:100	1:50
HORIZONTAL	1:100	1:50
NORMAL		
INVERTED		
REMARKS	SONDE DIP 87.5 DEGREES	

SEAM THICKNESS LOG INTERVALS

FROM	51.00
TO	82.00

B P B SEAM THICKNESS LOG

DEPTH	BED RESOLUTION DENSITY
	1000 (kg/m³) 2000



DEPTH BED RESOLUTION DENSITY

BOREHOLE DP-87-307
CLIENT Crows Nest Resources Ltd.
AREA Telkwa B.C.
COUNTRY Canada

SEAM THICKNESS LOG

MT 86003 B

239

BPB

BOREHOLE TW 327 (4)
CLIENT Crown West Resources Ltd.
AREA Delaine Pty.
COUNTRY Canada
DATE LOGGED 20/09/1983
OPTIONAL SCALE 1:100
___ OF ___ LOGS

COAL QUALITY LOG

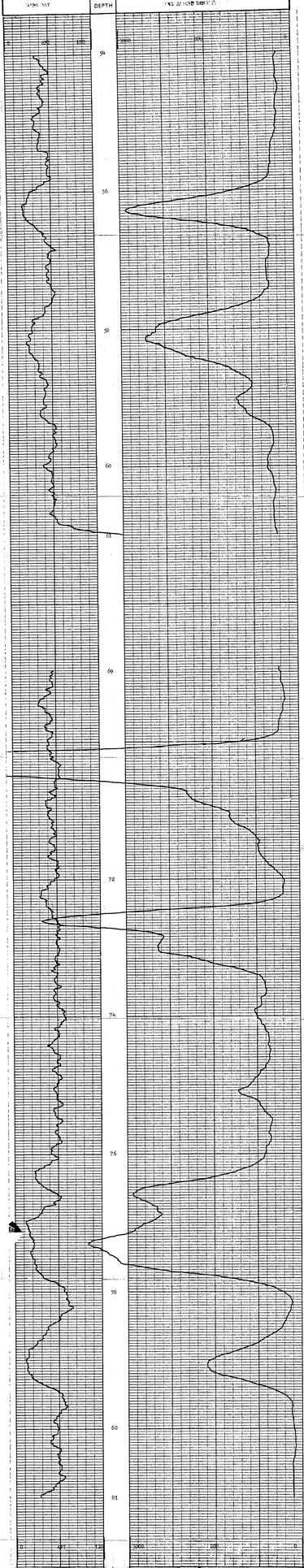
BOREHOLE DATA
OPERATION DATA
EQUIPMENT AND RECORDING DATA

SONDE TYPE
COAL COMBINATION SONDE

LOG SUITE
GAMMA RAY
L.S. DENSITY

COAL QUALITY LOG INTERVALS

BPB COAL QUALITY LOG



BOREHOLE TW 327
CLIENT Crown West Resources Ltd.
AREA Delaine Pty.
COUNTRY Canada

COAL QUALITY LOG

239

GAMMA RAY & NEUTRON-NEUTRON

BOREHOLE DP-X-327 (5)

CLIENT Crown West Resources Ltd.

AREA Telkwa

COUNTRY Canada

DATE LOGGED 30/06/83

BOREHOLE DATA

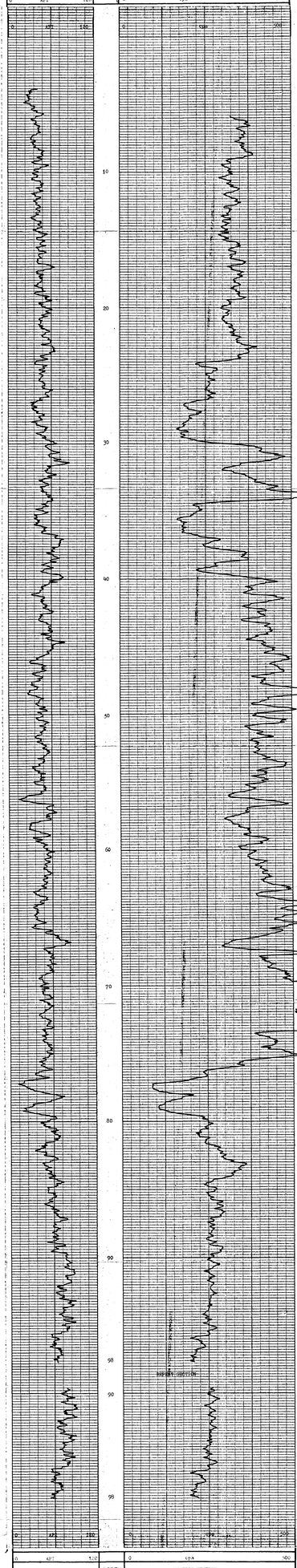
OPERATION DATA

EQUIPMENT AND RECORDING DATA

TOOL	TYPE	PANEL	

REMARKS

GAMMA RAY	DEPTH	NEUTRON-NEUTRON
0 API 120		0 CPS 400



GAMMA RAY	DEPTH	NEUTRON-NEUTRON
0 API 120		0 CPS 400

BOREHOLE DP-X-327

CLIENT Crown West Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

Tk-Tolukuma 89/3/4

TELKWA PROJECT

DRILL HOLE #328 ①

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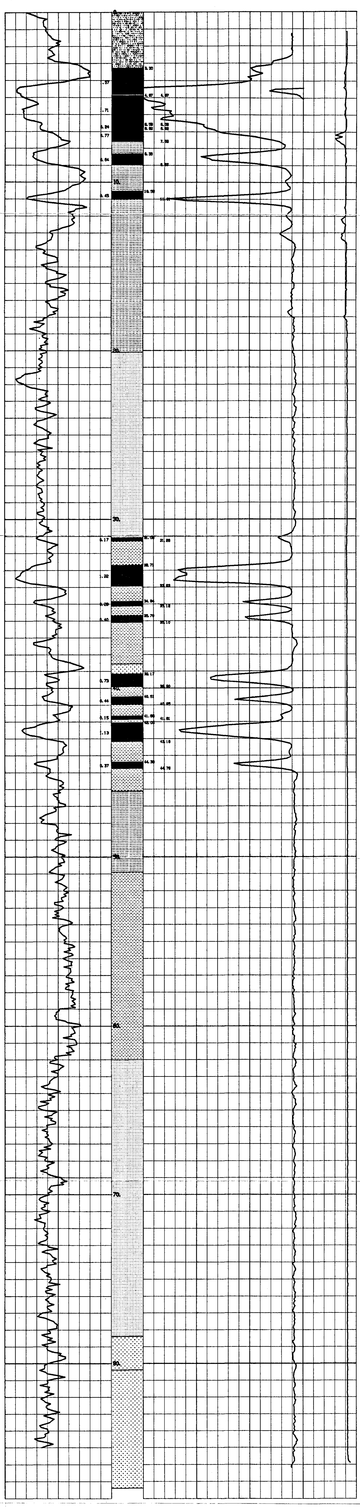
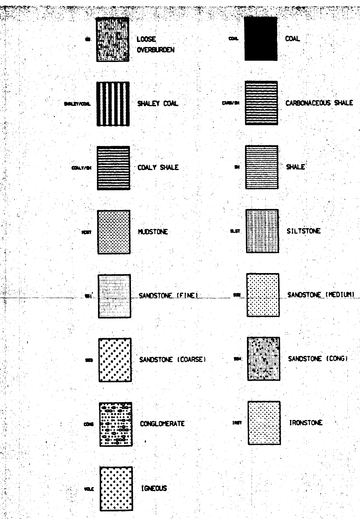




239

SEAM THICKNESS LOG

BOREHOLE TYPE
COAL
COMMON
SENSOR

QUALITY
CALIPER
BED DENSITY

SEAM THICKNESS USE INTERVALS

239

1-16-Tech 93/94

COAL QUALITY LOG

BOREHOLE: DP30-38 (2)
CLIENT: Crows Nest Resources Ltd.
AREA: Dawson B.C.
COUNTRY: Canada
DATE LOGGED: 12/04/93
OPERATOR: [illegible]
REFERENCE: [illegible]

BOREHOLE DATA	DRILL HOLE DIAMETER: 76 mm
INSTALLATION DATA	CASING TYPE: PVC / CASING DIA: 50 mm
EQUIPMENT AND RECORDING DATA	LOG TYPE: COAL QUALITY / RECORDER: [illegible]

BOREHOLE FLUID: AIR
MAXIMUM RECORDED DEPTH: [illegible]
DATE: [illegible]
TIME: [illegible]
RUN NO.: [illegible]
LOGGED BY: [illegible]
CHECKED BY: [illegible]

SONDE TYPE: COAL COMBINATION SONDE
LOG SUITE: COAL QUALITY
SONDE NO.: [illegible]
CALIBRATION: [illegible]
LOG INTERVALS: [illegible]
LOG SUITE SUMMARY: [illegible]
L.S. SUMMARY: [illegible]
REMARKS: [illegible]

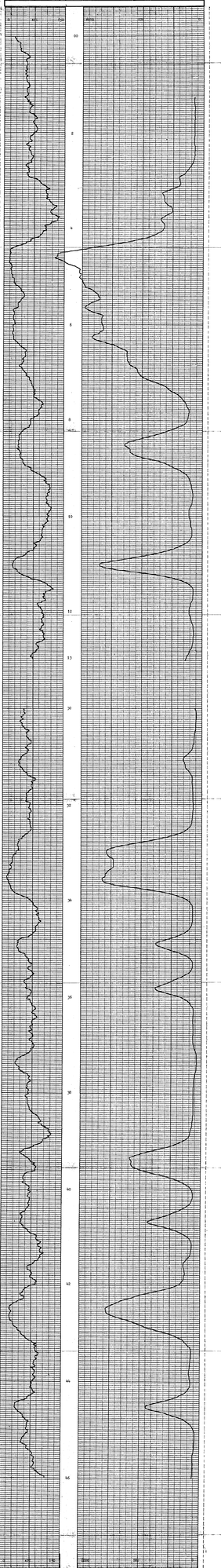
BPB COAL QUALITY LOG

DEPTH

GAMMA RAY

COAL BULK DENSITY

HOLE SIZE CORRECTION DATA



GAMMA RAY

COAL BULK DENSITY

DEPTH

BOREHOLE: DP30-38
CLIENT: Crows Nest Resources Ltd.
AREA: Dawson B.C.
COUNTRY: Canada

COAL QUALITY LOG

239

Gamma Ray & Spectral Densitometer

BOREHOLE 14-25-28 (4)

CLIENT Crown Trust Resources Ltd.

AREA Tsulum B.C.

COUNTRY Canada

DATE LOGGED 1/10/7_

BOREHOLE DATA	MEASURED FROM KELLY BUSHING	LOG
OPERATION DATA		
EQUIPMENT AND RECORDING DATA		

LOG	TYPE	PANEL	SCALE	LOG
GAMMA RAY				
SPECTRAL GAMMA				

REMARKS

GAMMA RAY 0 API 150

DEPTH

SPECTRAL GAMMA 0 PPM 100

SANDSTONE POROSITY

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

4" 6" 8"

MY 131 A3A401 B

00 10 20 30 40 50 60 70 80 84 77 86 84

Fracture Porosity

0 API 150

0 PPM 100

GAMMA RAY

DEPTH

SPECTRAL GAMMA

BOREHOLE 14-25-28

CLIENT Crown Trust Resources Ltd.

AREA Tsulum B.C.

COUNTRY Canada

MY A3A401B

TK-TEKWA 88(3)A

239

BPB

BOREHOLE 88 (5)

CLIENT

AREA

COUNTRY

DATE LOGGED

DEPTH SCALE

OF LOGS

BOREHOLE DATA	REFER TO	LOG
OPERATION DATA	REFER TO	LOG

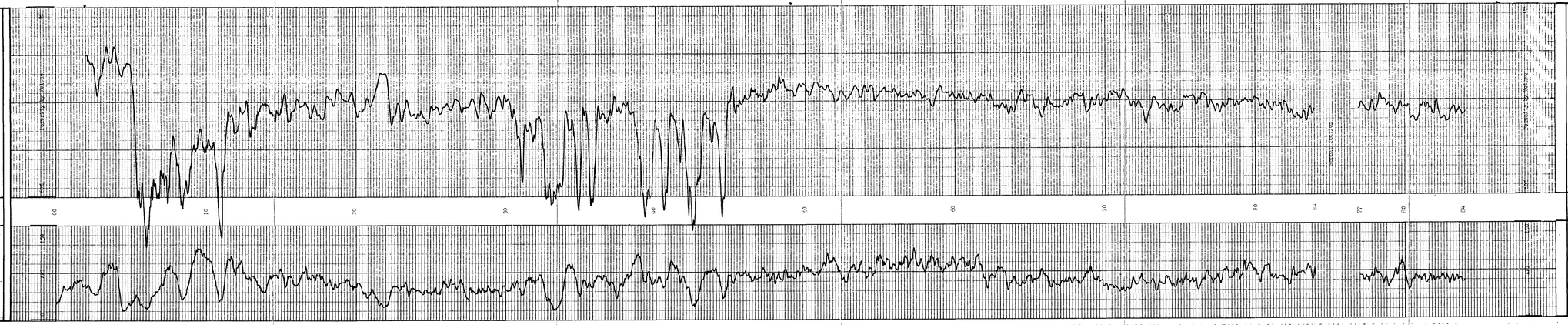
EQUIPMENT AND RECORDING DATA

LOG	TAPING			PANEL			FAC. CORR.
	LOG TAPED	SPEED SELECT	REPLAY SPEED	SPEED	ACC.	NORM.	

SONDE NO.	MODEL NO.

REMARKS

DEPTH



DEPTH

AREA

COUNTRY

BOREHOLE

CLIENT

BPB

239

1K - TEUCER 83 (6)

BPB

BOREHOLE 38 (6)
CLIENT
AREA
COUNTRY
DATE LOGGED
DEPTH DATUM
DEPTH LOGGED

MULTI-CHANNEL SONIC LOG

BOREHOLE DATA

DRILLING CONTRACTOR	
LOCATION OF HOLE	
ACCESSIBILITY OF HOLE	OPEN
MAXIMUM DEVIATION	
MAXIMUM DIAMETER	
BOREHOLE FLUID	
FLUID LEVEL	
FLUID TEMPERATURE	
FLUID RESISTIVITY	
FLUID DENSITY	
FLUID PH	
FLUID CHLORIDES	
FLUID SALINITY	
FLUID PRESSURE	
FLUID LOSS	
CASING SIZES 1	
2	
3	
4	
5	
CASING SHOES 1 TO	
2 TO	
3 TO	
4 TO	
5 TO	

OPERATION DATA

SONDE NO.	
LOGGING UNIT NO.	
OPERATING MODE	
LOGGING SPEED	
TIME CONSTANT	
DATA RECORDED	
DATA DISPLAYED	
OPERATOR	
WITNESS	

EQUIPMENT AND RECORDING DATA

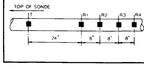
SONDE No.

	TRANSDUCER ARRANGEMENT: RECEIVER PAIR	SPACING R1-R2	SPACING R3-R4	CENTRALISERS SET TO: GENERAL LOGGING SPEED	TC SECS	DETAIL LOGGING SPEED	TC SECS	DIAMETER: DATA RECORDED FROM	TO	INTERVAL	DATA DISPLAYED FROM	TO	INTERVAL
CHANNEL 1	R1 - R2	8"	24"										
CHANNEL 2	R2 - R4	16"	32"										
CHANNEL 3	R1 - R4	24"	24"										
CHANNEL 4	R2 - R4	8"	40"										

DETAIL ZONES DISPLAYED (SEE RELEVANT LOG)

FROM	TO	INTERVAL	INTERVAL TOTAL

TOP OF SONDE

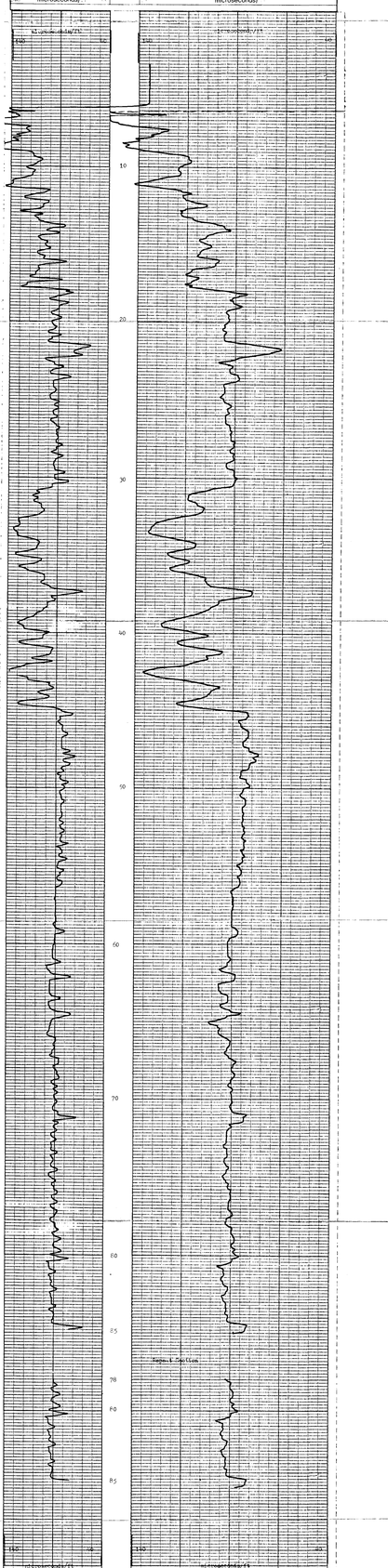


REMARKS

CHANNEL
INTERVAL TRANSIT TIME
microseconds/ft

DEPTH

CHANNEL
INTERVAL TRANSIT TIME
microseconds/ft



microseconds/ft
CHANNEL

DEPTH

microseconds/ft
CHANNEL

BPB

BOREHOLE
CLIENT
AREA
COUNTRY

MC SONIC LOG

TK-TELKWA 83 GH

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DIPMETER ANALYSIS

CLIENT: CROWS NEST RESOURCES
BOREHOLE: TW 83D-328 (7)
AREA: TELKWA, B.C.
COUNTRY: CANADA

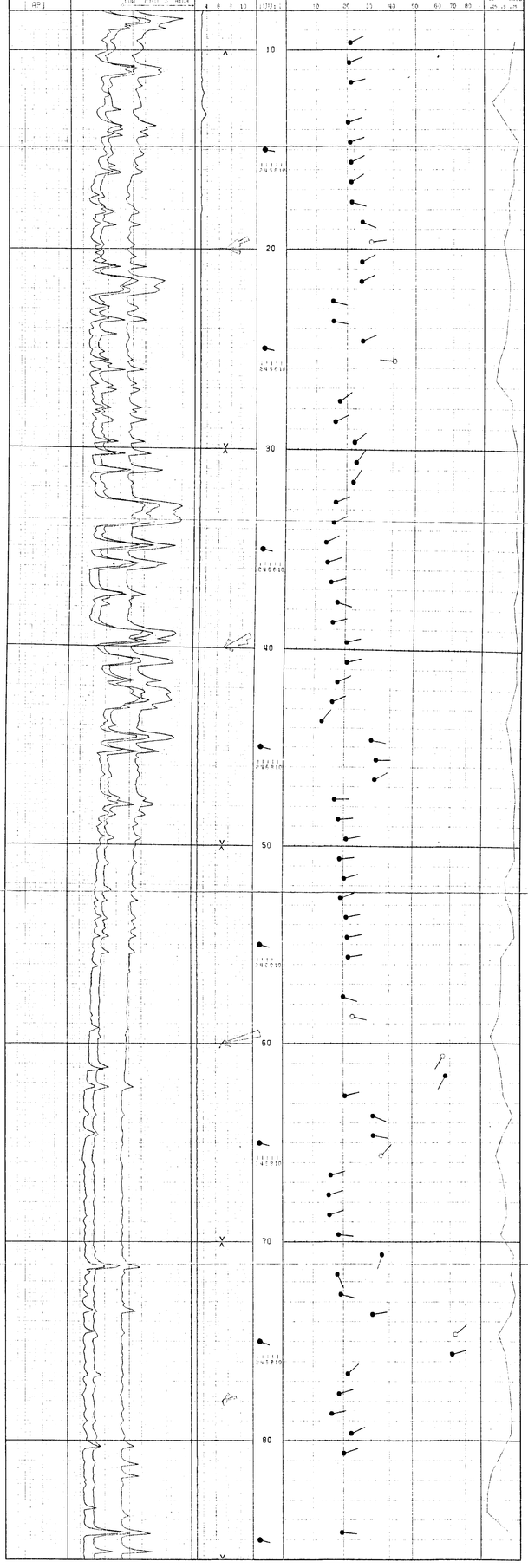
DATE LOGGED.....01-JUL-83
DATE PROCESSED..11-JUL-83

COMMENTS.....

INTERPRETATION PARAMETERS
TYP 1.00M. DECLINATION 26.0 EAST
INTERVAL 2.00M. DEPTH RANGE 8.00 - 85.00M.
SEARCH ANGLE 80. DATE PROCESSED 11-JUL-83

AVERAGE BOREHOLE DEVIATION & DIRECTION
MANDATED EVERY 10.0M.
BOX DIAGRAMS DEPICTED EVERY TEN DEGREES.
UP RANGE PER DIP MARKER DISPLAYED

LEGEND:
GOOD (>0.50)
POOR (<0.50)

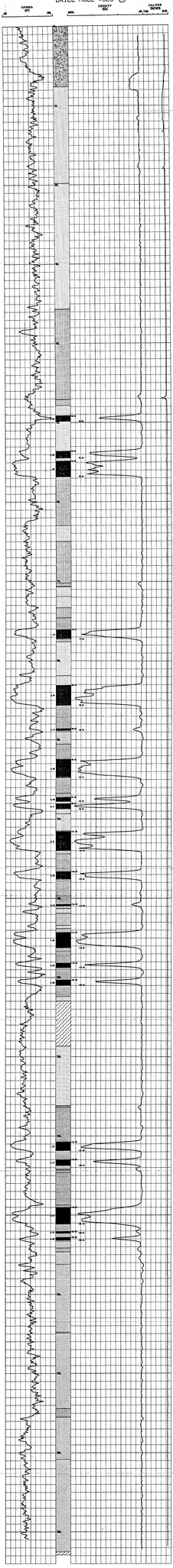


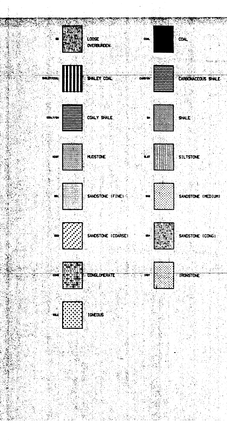
Tx - TIP.com 88/94

TELKWA PROJECT

DRILL HOLE #329 ①

239

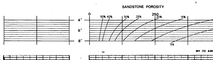


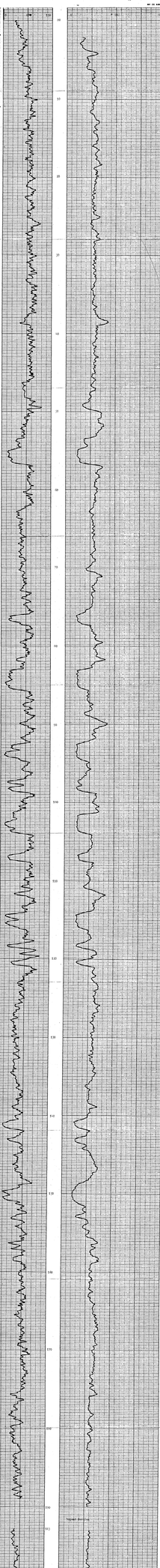


COMPANY	CITY OF LAS VEGAS
WELL	LVWA #1
FIELD	LAKE MEAD NATIONAL RECREATION AREA
COUNTY	CLARK
STATE	NEVADA
API NO.	
LOCATION	
SECTION	
TOWNSHIP	
RANGE	
PERMANENT DATUM	GROUND LEVEL
LOG MEASURED FROM	KELLY BUSHING
DRILLING MEASURED FROM	KELLY BUSHING
ELEVATION	

239

BOREHOLE: OC-2-SD
CLIENT: Cities Service Helium Inc.
AREA: Shiprock Dome
COUNTRY: Canada
DATE: 1-Nov-1967
RUN NO.: 1
DEPTH: 50 TO 0-50 TOP
DATUM: 0.0
DEPTH: 50 TO 0-50 TOP





DATUM: 0.0
DEPTH: 50 TO 0-50 TOP

BOREHOLE: OC-2-SD
CLIENT: Cities Service Helium Inc.
AREA: Shiprock Dome
COUNTRY: Canada

239

COMPANY	CONSOLIDATION COAL CO.
WELL	WV-1
FIELD	
COUNTY	MARION
STATE	WEST VIRGINIA
LOCATION	
ELEVATION	
PERMANENT DATUM	GROUND LEVEL
LOG MEASURED FROM	KB 10 FT. ABOVE PERM. DATUM
DRILLING MEASURED FROM	KB
DATE	1-7-80
RUN NO.	ONE
DEPTH-DRILLER	1000
DEPTH-LOGGER	1000
BTM. LOG INTERVAL	1000
TOP LOG INTERVAL	0
CASING-DRILLER	10
CASING-LOGGER	10
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	

P.P.G. COAL QUALITY LOG

COAL BULK DENSITY

| | | |

239

BPB

BOREHOLE
CLIENT
AREA
COUNTRY

BOREHOLE
CLIENT
AREA
COUNTRY

DATE
RUN NUMBER
DRILLER'S DEPTH
BOREHOLE FLUID
RECORDED BY
WITNESSED BY
MAX. REC. TEMP.
EQUIPMENT AND CODENO. DATA
LOGGING
DEPTH
TIME
SPEED
TENSION
CABLE
CABLE
CABLE

239

MULTI-CHANNEL SONIC LOG

COMPANY	
WELL	
FIELD	
COUNTY	
STATE	
COUNTRY	
OTHER SERVICES	
DATE	
JOB NUMBER	
DATUM	
ELEV. K.B.	
ELEV. D.F.	
ELEV. G.L.	

RUN NO.	DATE	LOGGED INTERVAL	TYPE FLUID IN HOLE	MAX. REC. TEMP.	EQUIPMENT LOCATION

BOREHOLE DATA	
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 SINCE CIRCULATION	
TIME SINCE STOP	
MAX. REC. TEMP.	
EQUIP. LOCATION	
RECORDED BY	
WITNESSED BY	

FIELD DATA	
RECORDED BY	
WITNESSED BY	

OPERATION DATA	
TOOL TYPE	
TOOL NO.	
TOOL POSITION	
MEAS. FROM	
DATUM	
DATE	
TIME	
OPERATOR	

EQUIPMENT AND RECORDING DATA

SONDE No.

	TRANSDUCER SPACING (FT)			CENTRALIZERS SET TO GENERAL LOCATION		DETAIL LOCATION		DIAMETER DATA RECORDED		DATA (SUR. ACT)	
	SONDE	TO	TO	SONDE	TO BELL	SONDE	TO BELL	FROM	TO	NOMINAL	FROM TO	NOMINAL
CHANNEL	10 / 14	4	4								
CHANNEL	10 / 14	4	4								
CHANNEL	10 / 14	4	4								
CHANNEL	10 / 14	4	4								

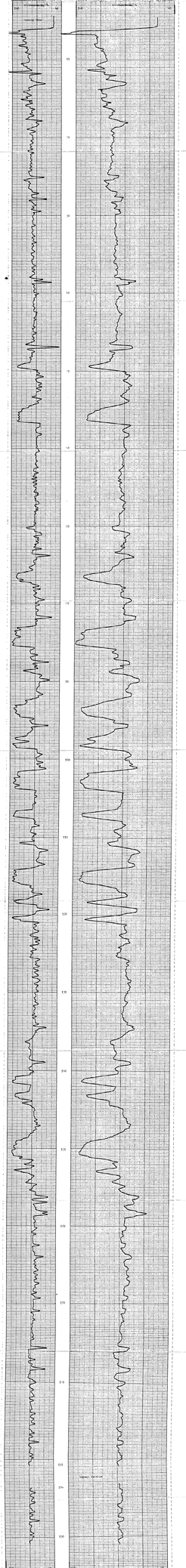
METAL ZONES DISPLACED BELOW LOGGED DEPTH

FROM	NOMINAL TOTAL
TO	
BOTTOM	

TOP OF SONDE BOTTOM OF SONDE

REMARKS

CHANNEL	DEPTH	CHANNEL
NOMINAL TRANSIT TIME		NOMINAL TRANSIT TIME
PROCESSING		PROCESSING



CHANNEL	DEPTH	CHANNEL
PROCESSING		PROCESSING

BPB

BOREHOLE AREA

CLIENT COUNTRY

MC SONIC LOG

Tc-Tenaum 83(a)

DIPMETER ANALYSIS

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CLIENT____ CROWS NEST RESOURCES
BOREHOLE_ TW 83D-329 ⑦
AREA_____ TELKWA, B.C.
COUNTRY__ CANADA

DATE LOGGED.....04-JUL-83

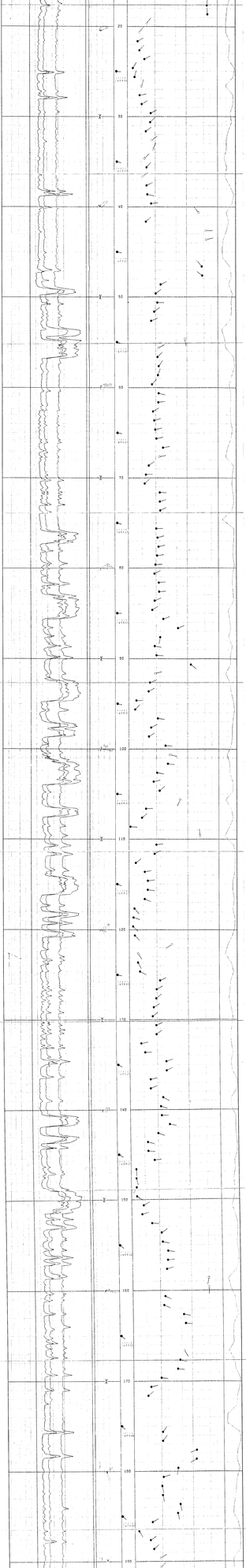
COMMENTS.....

INTERPRETATION PARAMETERS
MAX. I. 30%
INTERVAL 1.00M.
MIN. HOLE 80.
DECLINATION 28.0 EAST
DATA RANGE 11.00 - 184.00M.
LOG PASS(S) 111-JUL-83

DIPMETER ATTITUDE DEVIATION & DIRECTION
CORRECTED WRT DIP.DIR.
FOR DIPMETER STRAINED FIRST RUN DEVIATED
FOR DIPMETER NOT ARRED COMPLETE

LEGEND:
Dmax 10.00 - 90.00
Dmin 0.00 - 40.00

GAMMA RAY
CALIPER
DIP ANGLE & DIRECTION
DEGREES
MAGNETIC DECLINATION



239

BORE HOLE RECORD	
BIT	
SIZE	
FROM	
TO	
CASING RECORD	
SIZE	
WGT.	
FROM	
TO	
TOP LOG INTERVAL	
BOTTOM LOG INTERVAL	
TYPE FLUID IN HOLE	
DENSITY	
LEVEL	
MAX. REC. TEMP.	
ESTIMATED TEMP.	
TIME SINCE CIRCULATION	
TIME SINCE STOP	
EQUIPMENT NO.	
LOCATION	
RECORDED BY	
WITNESSED BY	

COMPANY	
WELL	
FIELD	
COUNTY	
STATE	
LOCATION	
SEC.	TWP.
RGE.	
OTHER SERVICES	
PERMANENT DATUM	ELEV.
LOG MEASURED FROM	ABOVE PERM. DATUM
DRILLING MEASURED FROM	

EQUIPMENT AND RECORDING DATA

CAL	EQUIPMENT			TIMING			PRESS			CAL	DEPTHS	
SONDE	SOURCE	SAMPLER	CAL	TRANSMITTER	RECEIVER	MIX	SAMPLE	BLEED	TRANS		FROM	TO

ADDITIONAL SONDES RUN

SONDE	UNIT	SERIAL NO.	DEPTH

RUN TO

ADDITIONAL CASINGS

REMARKS

Checks Run

Repeat Section

DATE RUN

DEPTH

RUN

DEPTH

BOREHOLE

CLIENT

AREA

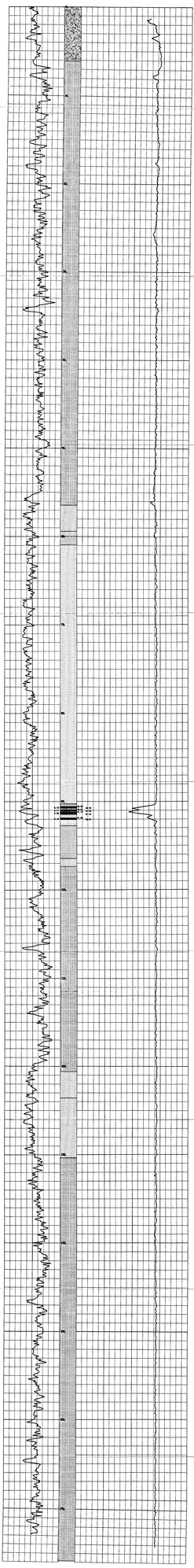
COUNTRY

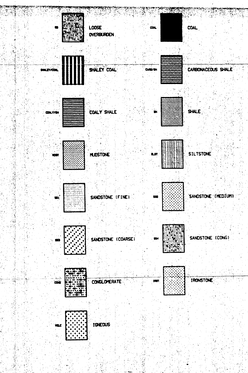
BP 10000 3

TK Telkwa 85/86

TELKWA PROJECT 239

DRILL HOLE #330 (2)





TK-Telkwa 83/3/a

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BOREHOLE TM82-330 (3)

CLIENT Cross West Resources Ltd.

AREA Telkwa

COUNTRY Canada

DATE LOGGED 5/Jul/83

DEPTH SCALE 1:20

3 OF 3 LOGS

BOREHOLE DATA — REFER TO LITHOLOGY LOG

OPERATION DATA — REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

SIDEWALL POSITION

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

SOURCE, SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

COAL QUALITY LOG INTERVALS

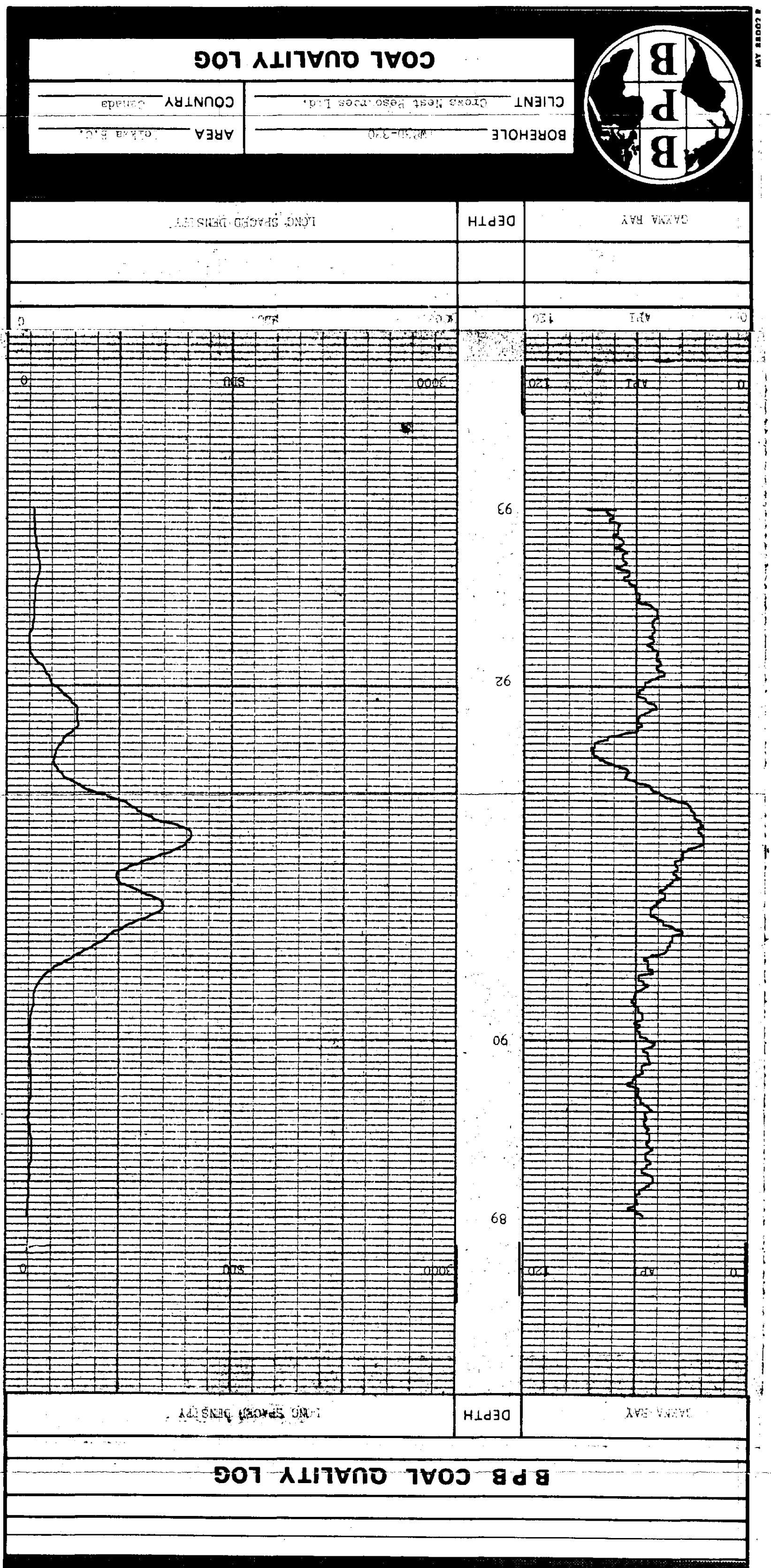
FROM	93m	
TO	89m	
INTERVAL	4m	
FROM		INTERVAL TOTAL
TO		
INTERVAL		[illegible]

REMARKS Depth changed to correspond to [illegible] in reader.

COAL QUALITY LOG

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: GAMMA RAY, L.S. DENSITY



BPB COAL QUALITY LOG

Bidg 330 Office

TK- TELKWA 83(3)a

239

BPB

BOREHOLE TW83D-330 (4)

CLIENT Crows Nest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

DATE LOGGED 5/Jul/83

DEPTH SCALE 1:20

2 OF 3 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			LAT COEFF
	LOG TAPED	RECORD SPEED	DIRECT or REPLAY	SPEED	TC SECS	NORM	
CALIPER	Y	2m/m					
B R DENSITY	Y	2m/m	R	2m/m	1	2.46	-

SOURCE SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG INTERVALS

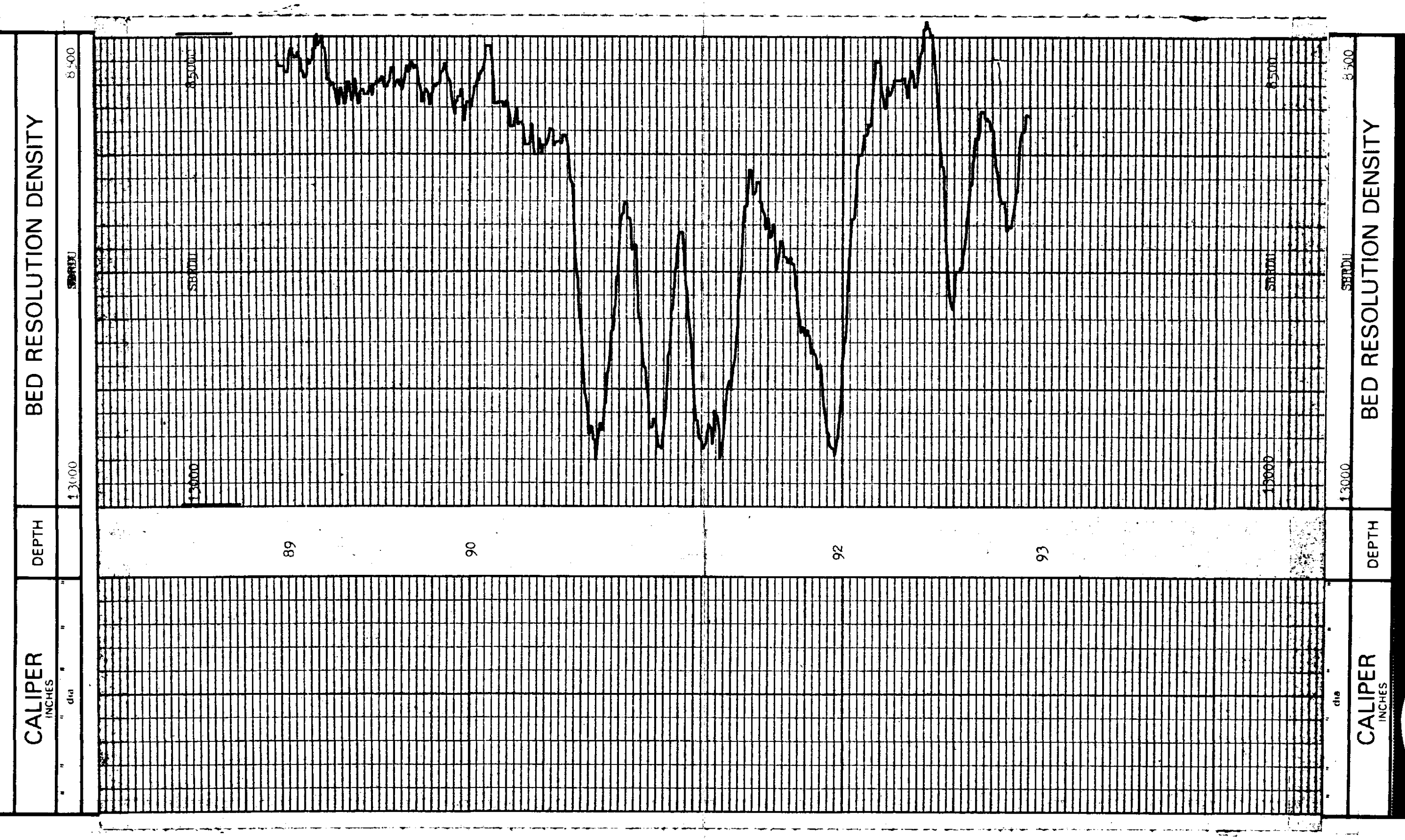
FROM	93m
TO	89m
INTERVAL	4m
FROM	
TO	
INTERVAL	
INTERVAL TOTAL	= 4m

REMARKS Scaler changed to compensate for running in rods.

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: CALIPER, B.R. DENSITY

B P B SEAM THICKNESS LOG



BED RESOLUTION DENSITY

BOREHOLE TW83D-330

CLIENT Crows Nest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

SEAM THICKNESS LOG

MY 88002 R

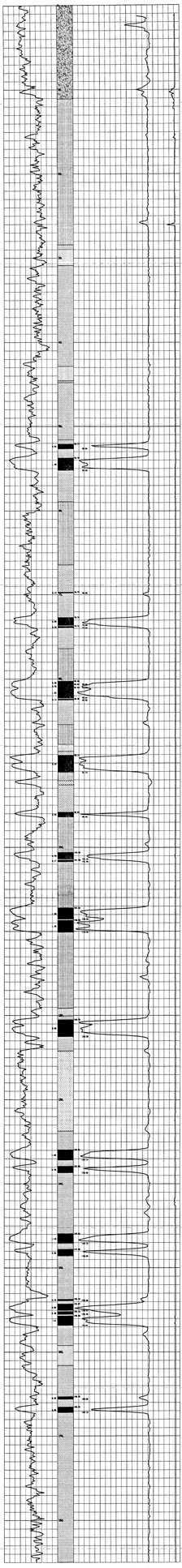
B14830181 - 330 - BKD

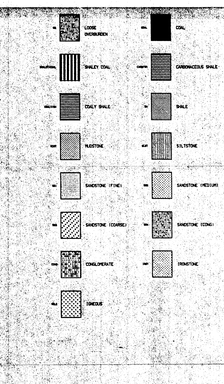
16- TELKWA 8/3A

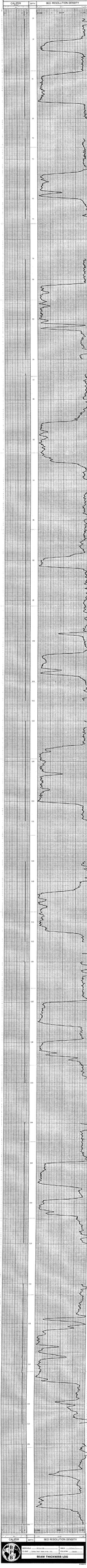
TELKWA PROJECT 239

DRILL HOLE #331 (1)

GAMMA API — DENSITY 300 — CALIPER INCHES 6M





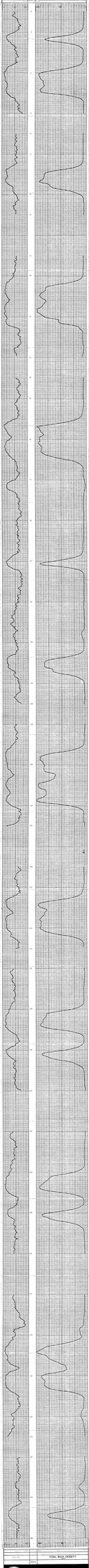

SEAM THICKNESS LOG
CALIPER
BED RESOLUTION DENSITY
SEAM THICKNESS LOG

239

COMPANY	BP CANADA ENERGY RESOURCES CORPORATION
WELL	100/06-27-082-17W6/00
FIELD	BEAVER RIVER
COUNTY	
PROVINCE	ALBERTA
LOCATION	100 FSL & 100 FWL
SEC	27
TWP	082
RGE	17W6
PERMANENT DATUM	GROUND LEVEL
ELEVATION	0.0
LOG MEASURED FROM	KB
DRILLING MEASURED FROM	KB
DATE	1-Feb-2011
RUN NO.	ONE
DEPTH DRILLER	1000.0
DEPTH LOGGER	1000.0
BOTTOM LOG INTERVAL	1000.0
TOP LOG INTERVAL	0.0
CASING DRILLER	0.0
CASING LOGGER	0.0
BIT SIZE	0.0
TYPE FLUID IN HOLE	AIR
DENSITY	
VISCOSITY	
PH	
FLUID LOSS	
SOURCE OF SAMPLE	
RM @ MEAS TEMP	
RMF @ MEAS TEMP	
RMC @ MEAS TEMP	
SOURCE RMF	
SOURCE RMC	
RM @ BHT	
MAX REC. TEMP.	
EQUIP. LOCATION	
RECORDED BY	
WITNESSED BY	

B.P.R. COAL QUALITY LOG

TRACK 1	DEPTH	COAL BULK DENSITY
	2.0 1.8 1.6 1.4 1.2 1.0	2.0 1.8 1.6 1.4 1.2 1.0



TRACK 1	DEPTH	COAL BULK DENSITY

BP CANADA ENERGY RESOURCES CORPORATION

COAL QUALITY LOG

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Tx. Texas 41-6A

Sonic Log Transmission

COMPANY: BP Exploration (Alaska) Inc.

WELL: 41-6A

FIELD: Prudhoe Bay

COUNTY: Alaska

STATE: Alaska

OTHER SERVICES: CNL, FDC, GR, Cal

PERMANENT DATUM: Ground Level

ELEVATION: 0'

LOG MEASURED FROM: Rotary Table

DRILLING MEASURED FROM: Rotary Table

DATE: 3-7-82

RUN NO.: ONE

TYPE FLUID IN HOLE: Brine

DENSITY: 9.6

VISCOSITY: 28

PH: 10.5

FLUID LOSS: 4.0

SOURCE OF SAMPLE: Pit

RM @ MEASURED TEMP.: .17 @ 70°F

RMF @ MEASURED TEMP.: .15 @ 70°F

RMC @ MEASURED TEMP.: .19 @ 70°F

SOURCE: RMF RMC

RM @ BHT: .09 @ 200°F

TIME SINCE CIRCULATION: 24 hrs

TIME LOGGER ON BOTTOM: 0400

MAX. REC. TEMP.: 200°F

EQUIPMENT NO.: 1-3-5-7-9-11-13

LOCATION: Sec. 11, T11N, R14E

RECORDED BY: Hoffman

WITNESSED BY: Mr. Ferguson

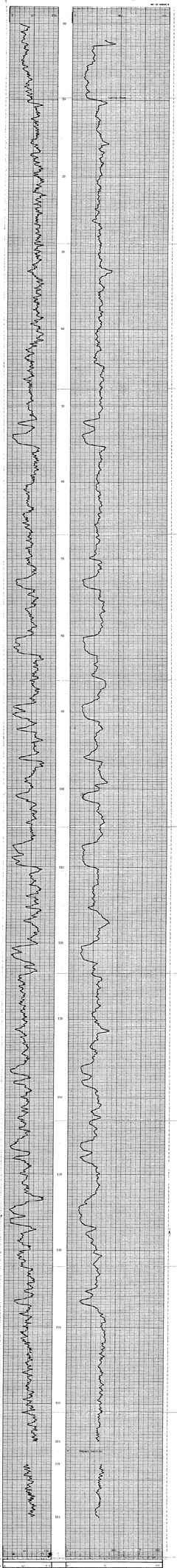
CASING RECORD			
SIZE	WGT.	GRADE	FROM	TO
13 3/8"	72	N-80	Surface	2700'
9 5/8"	47	N-80	Surface	10,000'
7"	29	N-80	9,800'	12,000'

BIT RECORD			
SIZE	TYPE	FROM	TO
12 1/4"	Rock	2700'	10,000'
8 1/2"	Rock	10,000'	12,000'

TUBING RECORD			
SIZE	WGT.	GRADE	FROM	TO
5 1/2"	17	N-80	Surface	9,800'

DEPTH	
10,000'	12,000'

SANDSTONE POROSITY



BOREHOLE: 41-6A

CLIENT: Chevron Resch Production Ltd.

AREA: Prudhoe Bay

COUNTRY: Canada

239

BPB

BOREHOLE

CLIENT

AREA

COUNTRY

DATE

RUN

DEPTH

OPERATOR

RECORDED BY

WITNESSED BY

DATE

TIME

DEPTH

CALIBRATION

SONDE TYPE

SERIAL NO.

CABLE

CABLE TYPE

CABLE LENGTH

MAX. TEMP.

MAX. PRESSURE

MAX. SPEED

MAX. TENSION

MAX. DEVIATION

MAX. DOGLEG

MAX. DEPTH

LOGGING DIRECTION

LOGGING SPEED

MAX. RECORDED

239

For Tech 9/2/84

MULTI-CHANNEL SONIC LOG

COMPANY	BP
CLIENT	
WELL	
COUNTRY	
FIELD	
LOCATION	
DATE	
RUN	

DATUM	
ELEVATION	
DEPTH	
DRILLER	
LOGGER	
BOTTOM LOG INTERVAL	
TOP LOG INTERVAL	
CASING	
BIT SIZE	
TYPE FLUID	
DENSITY	
VISCOSITY	
PH	
FLUID LOSS	
SOURCE	
RM	
RMF	
RMC	
RM AT MEAS. TEMP.	
RMF AT MEAS. TEMP.	
RMC AT MEAS. TEMP.	
SOURCE RMF	
SOURCE RMC	
RM AT BHT	
TIME SINCE CIRC.	
TIME SINCE CIRC.	
MAX. REC. TEMP.	
EQUIP. LOCATION	
RECORDED BY	
WITNESSED BY	

EQUIPMENT AND RECORDING DATA

SONDE No.	TRANSDUCER ARRANGEMENT				CENTRALISERS SET TO				DIAMETER			
					CENTRAL		OFF-TH.		DATA RECORDED		DATA DISPLAYED	
	TRANSMITTER	RECEIVER 1	RECEIVER 2	RECEIVER 3	UPSIDE	DOWNSIDE	UPSIDE	DOWNSIDE	TRANS.	RECEIVER	TRANS.	RECEIVER
CHANNEL 1	R1 - R2	8"	24"		—	—	—	—	—	—	—	—
CHANNEL 2	R1 - R3	8"	36"		—	—	—	—	—	—	—	—
CHANNEL 3	R1 - R4	8"	48"		—	—	—	—	—	—	—	—
CHANNEL 4	R2 - R4	24"	48"		—	—	—	—	—	—	—	—

DETAIL FUSES: STAN.,EXTD.,SLO.,SLO.PAMP.,OSC.

TRANS.	
REC.	
EXTRA	

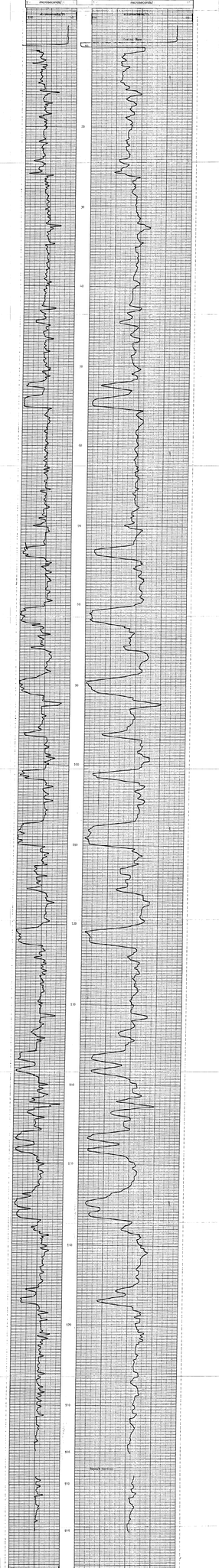
NATURAL GAMMA

REMARKS

TOP OF SONDE

24"	8"	8"	24"	8"

CHANNEL 1	DEPTH
NATURAL TRANSIT TIME	NATURAL TRANSIT TIME
microseconds/	microseconds/



microseconds/	DEPTH
CHANNEL	microseconds/

BP

BOREHOLE

AREA

CLIENT

COUNTRY

MC SONIC LOG

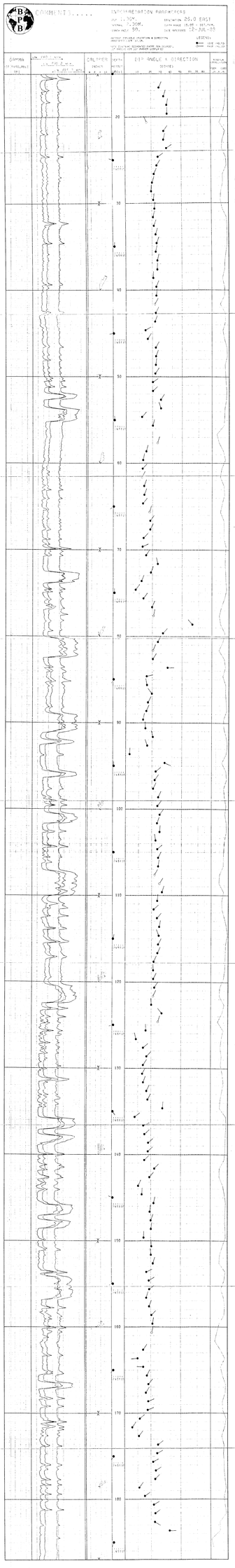
Tk Tekwa Bdola

239

DIPMETER ANALYSIS

CLIENT CROWS NEST RESOURCES
BOREHOLE TW 83D-331 (7)
AREA TELKWA, B.C.
COUNTRY CANADA

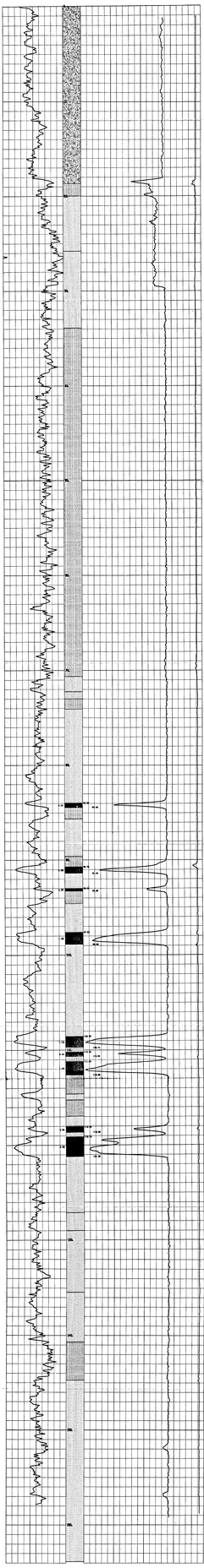
DATE LOGGED....07-JUL-83
DATE PROCESSED..12-JUL-83



W. Tenrum 23/5/2

TELKWA PROJECT 239

DRILL HOLE #332 ①



239

TR-Tecana 88-15/A

BPB

SEAM THICKNESS LOG

BOREHOLE DATA — BOREHOLE NO. 32 ②
CLIENT Cerro Colorado Coal Co. Ltd.

AREA Tarkwa
COUNTRY Ghana
DATE CODED 1987-11-17

OPERATOR Geophysical Services Ltd.

BOREHOLE DATA — BORE INCLINATION
OPERATION DATA — OPERATOR
EQUIPMENT DATA — EQUIPMENT NO.
CALIBRATION DATA — CALIBRATION NO.

239

COAL QUALITY LOG

BOREHOLE: [illegible] (32)
DATE: [illegible]
AREA: [illegible]
COUNTRY: [illegible]
DATE RECORDED: [illegible]
SCALE: 1" = 20ft

BOREHOLE DATA: [illegible]
OPERATION DATA: [illegible]
EQUIPMENT AND RECORDING DATA: [illegible]

COAL TYPE: [illegible]
COAL CLEANING: [illegible]
COAL QUALITY: [illegible]
GAMMA RAY: [illegible]
(-) DENSITY: [illegible]

COAL QUALITY LOG INTERVALS

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

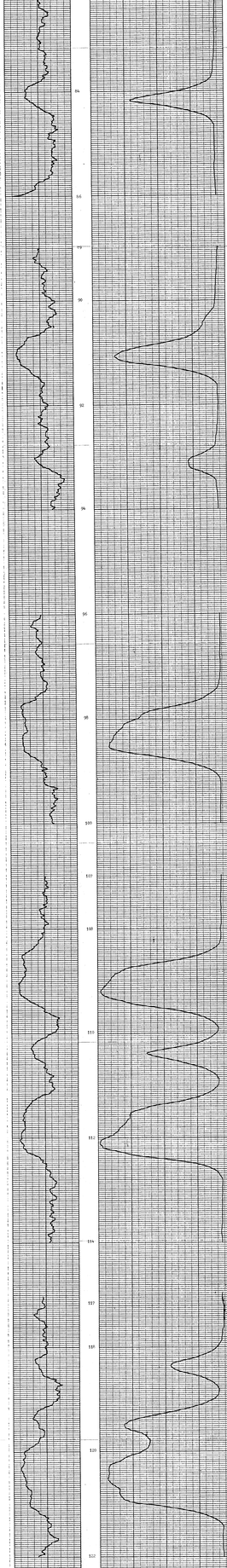
BPB COAL QUALITY LOG

DEPTH

DATE - [illegible]

COAL BULK DENSITY

HOLE SIZE CORRECTION DATA



DATE - [illegible]

COAL BULK DENSITY

DEPTH

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

COAL QUALITY LOG

239

TK / Rcan 85/3/6

BPB

COMPANY	BP
WELL	TUPCO 2N
FIELD	Wildcat
COUNTY	Lac de Gras, Northwest Territories
STATE	Canada
OTHER SERVICES	BHC, DIL, CNL
PERMANENT DATUM	Ground Level
ELEVATION	0
LOG MEASURED FROM	Kelly Bushing
DRILLING MEASURED FROM	Kelly Bushing
DATE	1-Jan-1900
RUN NO.	ONE
DEPTH-DRILLER	1000
DEPTH-LOGGER	1000
BTM. LOG INTERVAL	1000
TOP LOG INTERVAL	0
CASING-DRILLER	0
CASING-LOGGER	0
BIT SIZE	0
TYPE FLUID IN HOLE	Air
DENS.	0
VISC.	0
PH	0
FLUID LOSS	0
SOURCE OF SAMPLE	Flowline
RM @ MEAS. TEMP.	0
RMF @ MEAS. TEMP.	0
RMC @ MEAS. TEMP.	0
SOURCE RMF / RMC	Flowline / Flowline
RM @ BHT	0
TIME SINCE CIRC.	0
MAX. REC. TEMP.	0
EQUIP. LOCATION	Yellowknife
RECORDED BY	Bob Hoffman
WITNESSED BY	Bob Hoffman

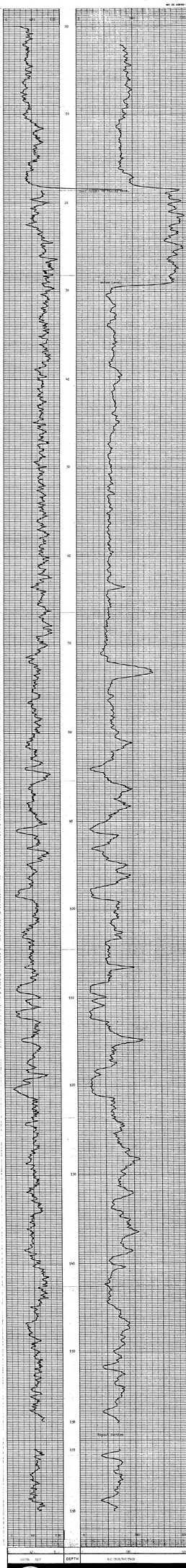
DEPTH	

SANDSTONE POROSITY

0 10% 15% 20% 25% 30% 500

4" 6" 8"

DO NOT ADDRESS



Top Cretaceous
Top Devonian
Upper Carbon

GR	0	100	
CALI	6	16	
DEPTH			
GR	0	100	
SP	-80	20	
RES	0.2	200	

BPB

BOREHOLE	TUPCO 2N
CLIENT	Cities Service Resources Ltd.
AREA	Lac de Gras
COUNTRY	Canada

239

BPB

PROJECT 330 (5)
CLIENT
AREA
COUNTRY
DATE LOGGED

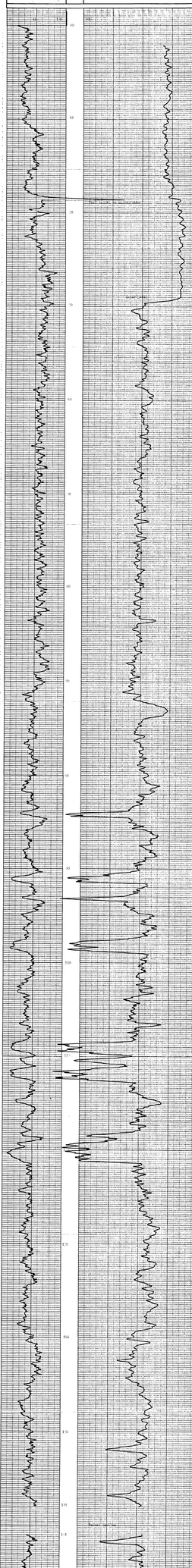
BOREHOLE DATA
CASING
DEPTH
BIT
MUD

OPERATION DATA
CALIBRATION
CALIBRATOR
CALIBRATOR

EQUIPMENT AND RECORDING DATA
SONDE
CABLE
RECORDER

REMARKS

DEPTH



DEPTH

BPB

BOREHOLE
CLIENT
AREA
COUNTRY

TK-TELKWA 83/6A

239

DIPMETER ANALYSIS

CLIENT	CROWS NEST RESOURCES
BOREHOLE	TW83D-332 (6)
AREA	TELKWA B.C.
COUNTRY	CANADA

DATE LOGGED.....09-JUL-83
DATE PROCESSED.....20-JUL-83

COMMENTS.....

INTERPRETATION PARAMETERS

STEP 1.00M.
INTERVAL 2.30M.
SEARCH ANGLE 30.
DECLINATION 28.0 EAST
DEPTH RANGE 35.00 - 158.00M.
DATE PROCESSED 20-JUL-83

AVERAGE BOREHOLE DEVIATION & DIRECTION
MAGNIFIED EVERY 10.00M.

ROSE DIAGRAMS SEPARATED EVERY TEN DEGREES.
(1" PROTO PER DIP NUMBER DISPLAYED)

LEGEND:
0200 140.50M
0210 140.70M

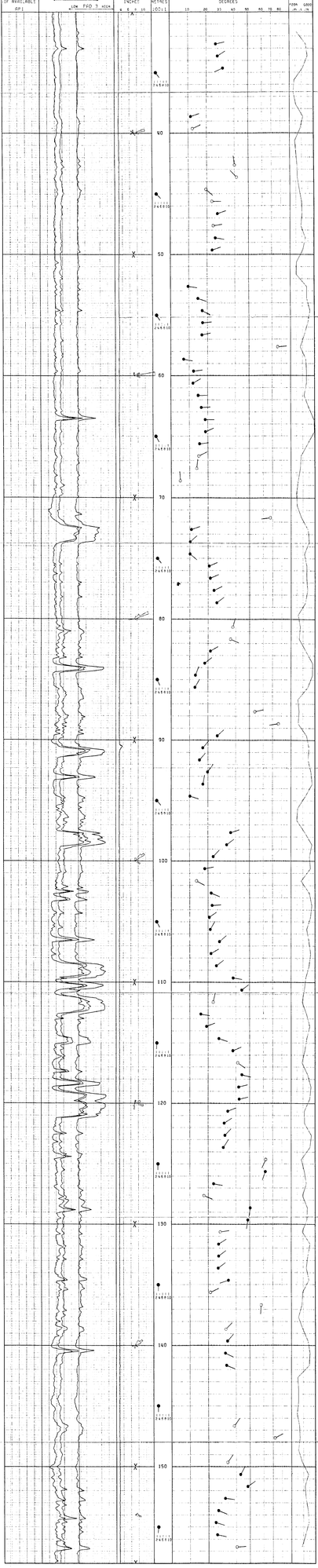
GAMMA (IF AVAILABLE API)
LOW PAD 1 HIGH
LOW PAD 2 HIGH
LOW PAD 3 HIGH

CALIPER INCHES 6 8 X 10

DEPTH METRES 1:50

DIP ANGLE & DIRECTION DEGREES 10 20 30 40 50 60 70 80

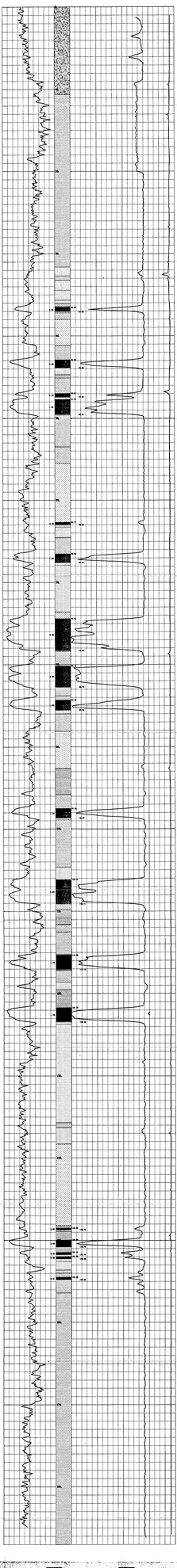
MINIMUM CORRELATION FROM 0000 TO 1.00

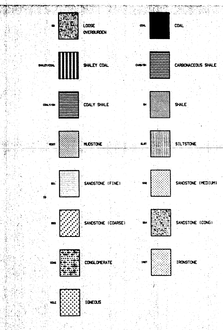


TK-TELKWA 83/3a

TELKWA PROJECT 239

DRILL HOLE #333 ①

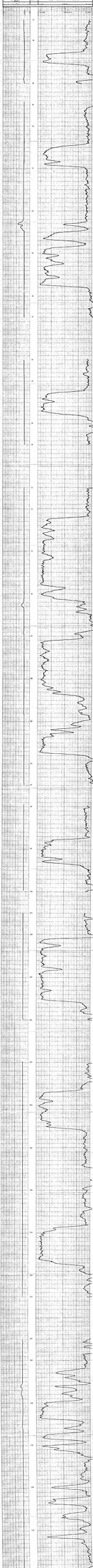




COMPANY	BP EXPLORATION (ALASKA) INC.
WELL	PRUDHOE BAY DS 4-9
FIELD	PRUDHOE BAY
COUNTY	NORTH SLOPE
STATE	ALASKA
API NO.	50-029-20244
LOCATION	2310' FSL & 2310' FEL
SECTION	34
TOWNSHIP	11N
RANGE	14E
PERMANENT DATUM	MSL
ELEVATION	0
LOG MEASURED FROM	RKB 36.4 ABOVE PERM. DATUM
DRILLING MEASURED FROM	RKB
DATE	12-Jan-1994
RUN NO.	ONE
DEPTH-DRILLER	10300
DEPTH-LOGGER	10300
BTM. LOG INTERVAL	10300
TOP LOG INTERVAL	9900
CASING-DRILLER	9 5/8 @ 9900
CASING-LOGGER	9900
BIT SIZE	8.5
TYPE FLUID IN HOLE	SEAWATER
DENSITY	8.5
VISCOSITY	150
PH	10
FLUID LOSS	4.8
SOURCE OF SAMPLE	PUMPS
RM @ MEAS. TEMP.	0.0 @ 0
RMF @ MEAS. TEMP.	0.0 @ 0
RMC @ MEAS. TEMP.	0.0 @ 0
RM @ BHT	0.0 @ 0
TIME CIRC. ENDED	0:00
TIME LOGGER ON BOTTOM	0:00
MAX. RECORDED TEMP.	0
LOGGING UNIT NO.	3
LOGGING ENGINEER	SCHMIDT
WITNESS	MCBRIDE

8 P.S. SEAM THICKNESS LOG

CALIPER	GAMMA	MED RESOLUTION DENSITY
6.0 in 16.0	0 API 100	1.95 g/cc 2.95



CALIPER	GAMMA	MED RESOLUTION DENSITY
6.0 in 16.0	0 API 100	1.95 g/cc 2.95

SEAM THICKNESS LOG

COMPANY	BP
WELL	237
FIELD	
COUNTY	
STATE	
LOCATION	
API NO.	50-103-20000
OTHER SERVICES	
SEC	
TWP	
RGE	
PERMANENT DATUM	GL
ELEV.	0
LOG MEASURED FROM	KB 10 FT. ABOVE PERM. DATUM
DRILLING MEASURED FROM	KB
DATE	10-Jan-2000
RUN NO.	ONE
DEPTH-DRILLER	1000
DEPTH-LOGGER	1000
BTM. LOG INTERVAL	1000
TOP LOG INTERVAL	0
CASING-DRILLER	8.625 @ 0
CASING-LOGGER	
BIT SIZE	7.875
TYPE FLUID IN HOLE	WATER
DENSITY	8.4
VISCOSITY	28
PH	9
FLUID LOSS	
SOURCE OF SAMPLE	PIT
RM @ MEAS. TEMP.	0.08 @ 70
RMF @ MEAS. TEMP.	0.06 @ 70
RMC @ MEAS. TEMP.	0.12 @ 70
SOURCE RMF	MEASURED
SOURCE RMC	MEASURED
RM @ BHT	0.05 @ 100
MAX. REC. TEMP.	100
EQUIP. LOCATION	
RECORDED BY	
WITNESSED BY	

BP COAL QUALITY LOG

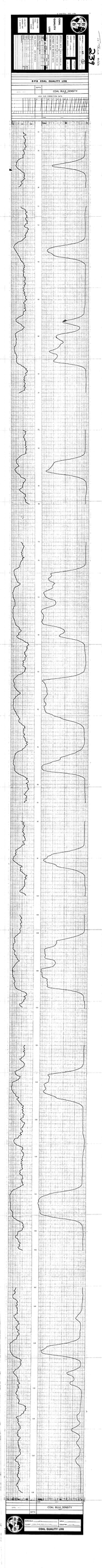
COAL BULK DENSITY

237 GR CORRECTED DATA

0	20	2.0	3.0
0	20	2.0	3.0

Depth

0	20	2.0	3.0
0	20	2.0	3.0



COAL BULK DENSITY

COAL QUALITY LOG

239

COMPANY	BP
WELL	Nigeria Offshore Block 210
FIELD	
COUNTY	
STATE	
COUNTRY	Nigeria
LOCATION	
COMPANY	
DATE	
RUN	
DATE	
DEPTH	
DATUM	
ELEVATION	
DEPTH	
DATUM	
ELEVATION	
DEPTH	
DATUM	
ELEVATION

BP

BOREHOLE
CLIENT
AREA
COUNTY
DATE
RUN NO.
DEPTH DRILLER
DEPTH LOGGER
BOTTOM LOG INTERVAL
TOP LOG INTERVAL
CASING DRILLER
CASING LOGGER
BIT SIZE
TYPE FLUID
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

R39

DEPTH

Depth To Line

Depth To Line

DEPTH

BP

BOREHOLE
CLIENT
AREA
COUNTRY

239

BPB

BORHOLE
CLIENT
AREA
COUNTRY
DATE LOGGED

SEAM THICKNESS LOG

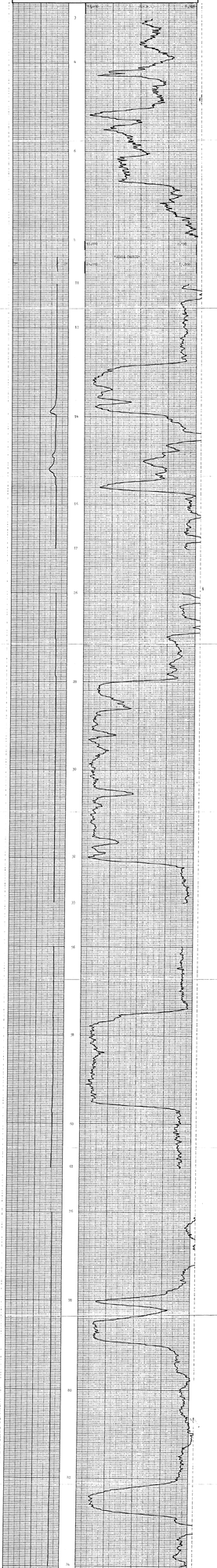
PRODUCTS DIV.
CONSOLIDATED
SERVICES

SEAM THICKNESS LOG WITH
LOG DENSITY
LOG SUITY
LOG CALIPER
LOG DENSITY

INTERVAL DATA
OPERATION DATA
EQUIPMENT AND RECORDING DATA

B P B SEAM THICKNESS LOG

CALIPER (Inches) | DEPTH | BED RESOLUTION DENSITY



CALIPER (Inches) | DEPTH | BED RESOLUTION DENSITY

BORE-HOLE
CLIENT
AREA
COUNTRY

SEAM THICKNESS LOG

239

COAL QUALITY LOG

BPB

BOREHOLE: 1C-01-19
CLIENT: Lynx Deep Sinking Ltd.
COUNTRY: Canada
DATE: 1-Jul-1986
DATA FORMAT: 2.5"/100m
DATE: 1-Jul-1986

BOREHOLE DATA: Hole Not Accessible
OPERATOR DATA: Not Recorded
COMPANY AND RECORDING DATA: Not Recorded

BOREHOLE TYPE: Dry
CONDITIONING: Dry
LOG DATE: 1-Jul-1986
LOG NO: 1
LOG DATE: 1-Jul-1986
LOG NO: 1

COAL QUALITY LOG INTERVALS

1	1.0	1.0	1.0
2	1.0	1.0	1.0
3	1.0	1.0	1.0
4	1.0	1.0	1.0
5	1.0	1.0	1.0
6	1.0	1.0	1.0
7	1.0	1.0	1.0
8	1.0	1.0	1.0
9	1.0	1.0	1.0
10	1.0	1.0	1.0
11	1.0	1.0	1.0
12	1.0	1.0	1.0
13	1.0	1.0	1.0
14	1.0	1.0	1.0
15	1.0	1.0	1.0
16	1.0	1.0	1.0
17	1.0	1.0	1.0
18	1.0	1.0	1.0
19	1.0	1.0	1.0
20	1.0	1.0	1.0
21	1.0	1.0	1.0
22	1.0	1.0	1.0
23	1.0	1.0	1.0
24	1.0	1.0	1.0
25	1.0	1.0	1.0
26	1.0	1.0	1.0
27	1.0	1.0	1.0
28	1.0	1.0	1.0
29	1.0	1.0	1.0
30	1.0	1.0	1.0
31	1.0	1.0	1.0
32	1.0	1.0	1.0
33	1.0	1.0	1.0
34	1.0	1.0	1.0
35	1.0	1.0	1.0
36	1.0	1.0	1.0
37	1.0	1.0	1.0
38	1.0	1.0	1.0
39	1.0	1.0	1.0
40	1.0	1.0	1.0
41	1.0	1.0	1.0
42	1.0	1.0	1.0
43	1.0	1.0	1.0
44	1.0	1.0	1.0
45	1.0	1.0	1.0
46	1.0	1.0	1.0
47	1.0	1.0	1.0
48	1.0	1.0	1.0
49	1.0	1.0	1.0
50	1.0	1.0	1.0
51	1.0	1.0	1.0
52	1.0	1.0	1.0
53	1.0	1.0	1.0
54	1.0	1.0	1.0
55	1.0	1.0	1.0
56	1.0	1.0	1.0
57	1.0	1.0	1.0
58	1.0	1.0	1.0
59	1.0	1.0	1.0
60	1.0	1.0	1.0
61	1.0	1.0	1.0
62	1.0	1.0	1.0
63	1.0	1.0	1.0
64	1.0	1.0	1.0
65	1.0	1.0	1.0
66	1.0	1.0	1.0
67	1.0	1.0	1.0
68	1.0	1.0	1.0
69	1.0	1.0	1.0
70	1.0	1.0	1.0
71	1.0	1.0	1.0
72	1.0	1.0	1.0
73	1.0	1.0	1.0
74	1.0	1.0	1.0
75	1.0	1.0	1.0
76	1.0	1.0	1.0
77	1.0	1.0	1.0
78	1.0	1.0	1.0
79	1.0	1.0	1.0
80	1.0	1.0	1.0
81	1.0	1.0	1.0
82	1.0	1.0	1.0
83	1.0	1.0	1.0
84	1.0	1.0	1.0
85	1.0	1.0	1.0
86	1.0	1.0	1.0
87	1.0	1.0	1.0
88	1.0	1.0	1.0
89	1.0	1.0	1.0
90	1.0	1.0	1.0
91	1.0	1.0	1.0
92	1.0	1.0	1.0
93	1.0	1.0	1.0
94	1.0	1.0	1.0
95	1.0	1.0	1.0
96	1.0	1.0	1.0
97	1.0	1.0	1.0
98	1.0	1.0	1.0
99	1.0	1.0	1.0
100	1.0	1.0	1.0

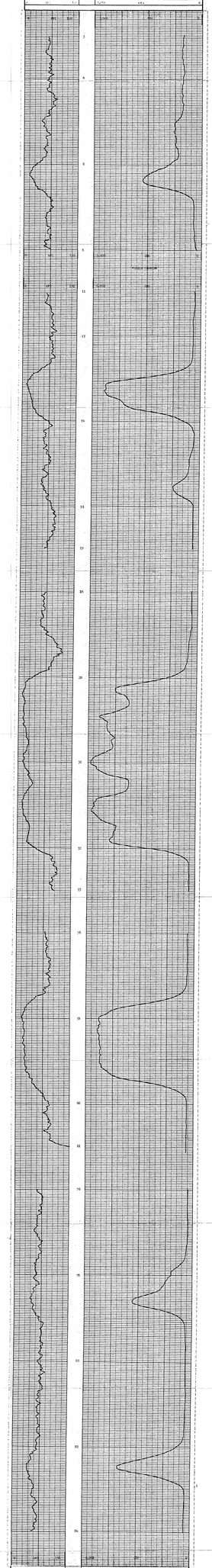
BPB COAL QUALITY LOG

DEPTH

SCITI AST

COAL BULK DENSITY

HOLE SIZE CORRECTION DATA



COAL BULK DENSITY

DEPTH

BOREHOLE 1C-01-19 AREA Yukon T.C.

CLIENT Lynx Deep Sinking Ltd. COUNTRY Canada

COAL QUALITY LOG

239

1:X - 1 Bruce 8 Gal

Gamma Ray & Reconstruction Log

BOREHOLE TW13-139 (3)
CLIENT Cross Roads Resources Ltd.
AREA Tatlow P.P.
COUNTRY Canada
DATE LOGGED 17/11/93

BOREHOLE DATA
OPERATION DATA
EQUIPMENT AND RECORDING DATA

GAMMA	NAT	DEPTH	NORTHING/EASTING
0 API	150	0	200

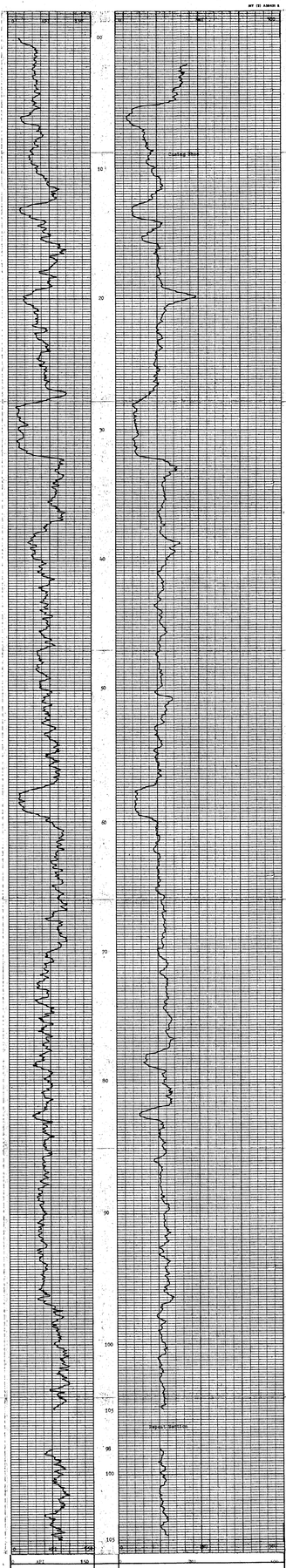
SANDSTONE POROSITY

0 — 250 — 500

4" / 6" / 8"

50% 40% 30% 20% 10% 0% 5%

NAT (%) ASHAN 6



DEPTH

BOREHOLE TW13-139
CLIENT Cross Roads Resources Ltd.
AREA Tatlow P.P.
COUNTRY Canada

Tx - Texaco 83/3a

239.

BOREHOLE 324 (4)

CLIENT

AREA

COUNTRY

DATE LOGGED

DEPTH SCALE

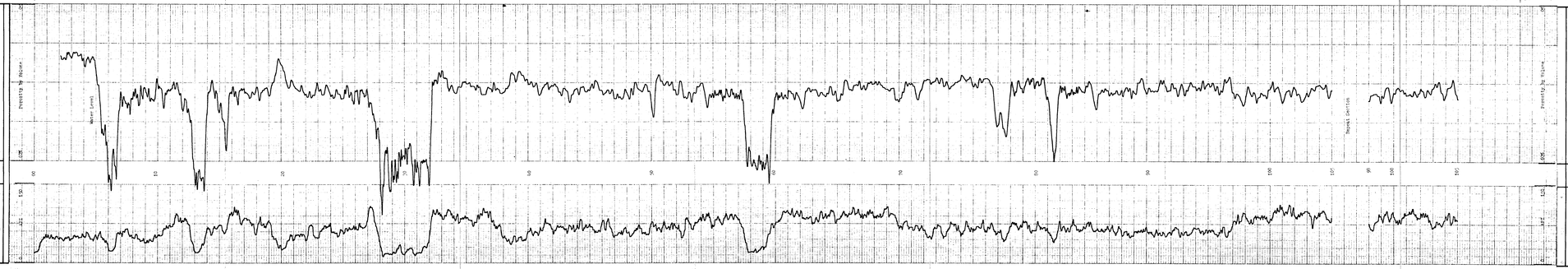
BOREHOLE DATA REFER TO LOG

OPERATION DATA REFER TO LOG

EQUIPMENT AND RECORDING DATA

LOG	RATING		FUEL	
	SPEED	RECORDING SPEED	SPEED	LOG	NORM

REMARKS



AREA

COUNTRY

BOREHOLE

CLIENT

239

MULTI-CHANNEL SONIC LOG

BOREHOLE
CLIENT
AREA
COUNTRY
DATE LOGGED
PROJECT
DRILLER
LOGGER

BOREHOLE DATA

DATUM		
DATUM ELEV.		
LOG MEASURED FROM		
DRILLING MEASURED FROM		
PERMANENT DATUM		
ELEV. PERM. DATUM		
LOG MEASURED FROM		
DRILL MEASURED FROM		
TOTAL DEPTH DRILLER		
TOTAL DEPTH LOGGER		
BTM. LOGGED INTERVAL		
TOP LOGGED INTERVAL		
CASING DRILLER		
CASING LOGGER		
BIT SIZE		
TYPE FLUID IN HOLE		
DENSITY		
PH		
FLUID LEVEL		
SOURCE OF SAMPLE		
RM @ MEASURED TEMP.		
RMF @ MEASURED TEMP.		
RMC @ MEASURED TEMP.		
SOURCE RMF & RMC		
RM @ BHT		
TIME SINCE CIRC.		
MAX. REC. TEMP.		
EQUIP. LOCATION		
RECORDED BY		
WITNESSED BY		

OPERATION DATA

TK - TELKWA 83 (b)

DIPMETER ANALYSIS

239

CLIENT: CROWS NEST RESOURCES
BOREHOLE: TW83D-334 (b)
AREA: TELKWA B.C.
COUNTRY: CANADA

DATE LOGGED.....12-JUL-83
DATE PROCESSED..20-JUL-83

COMMENTS.....

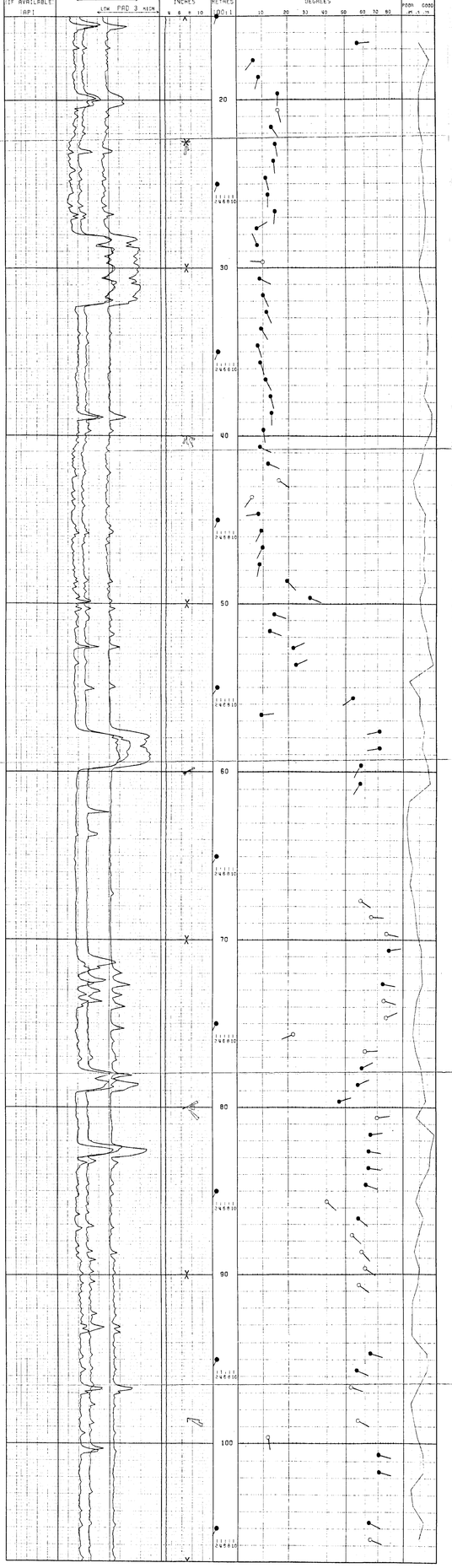
INTERPRETATION PARAMETERS

STEP 1.00M.
INTERVAL 2.00M.
SEARCH ANGLE 30.
DECLINATION 26.0 EAST
DEPTH RANGE 15.00 - 107.00M.
DATE PROCESSED 20-JUL-83

AVERAGE BOREHOLE DEVIATION & DIRECTION
RANDOMIZED EVERY 10.0M.

ROSE DIAGRAMS SEGMENTED EVERY TEN DEGREES.
.1" ARCS PER DIP MARKER DISPLAYED

LEGEND:
GOOD (+0.5D)
FAIR (+0.2D)

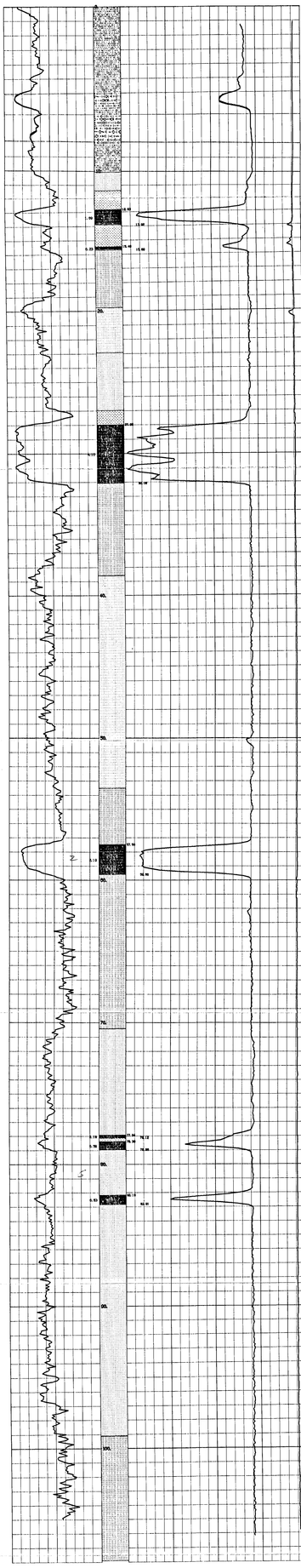


TK - TELKWA 88/3/A

TELKWA PROJECT

DRILL HOLE #334 (7)

239



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

TK. TELKWA 83/3A

TELKWA PROJECT

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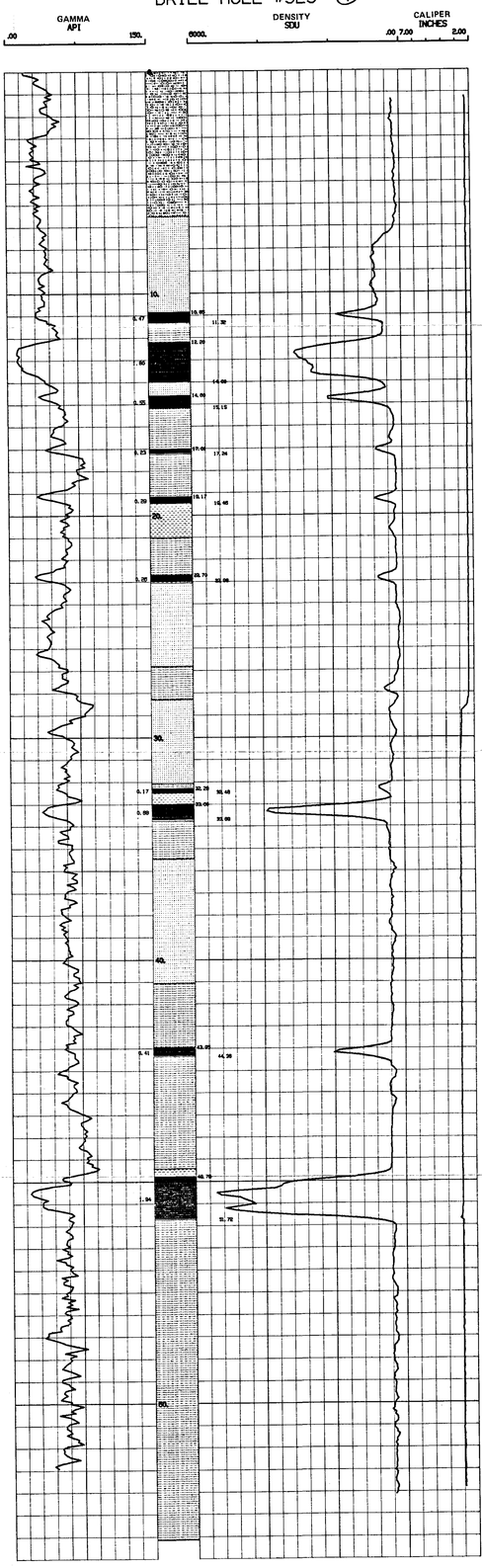
DRILL HOLE #325 ①



OB LOOSE OVERBURDEN

COAL COAL

SHALEY/COAL SHALEY COAL

CARB/SH CARBONACEOUS SHALE

COALY/SH COALY SHALE

SH SHALE

MDST MUDSTONE

SLST SILTSTONE

SS1 SANDSTONE (FINE)

SS2 SANDSTONE (MEDIUM)

SS3 SANDSTONE (COARSE)

SS4 SANDSTONE (CONG)

CONG CONGLOMERATE

IRST IRONSTONE

VOLC IGNEOUS

239

IK Team 82/84

BPB

BOREHOLE
CLIENT
AREA
COUNTRY
DATE COMPLETED
DATE LOGGED

SEAM THICKNESS LOG

BOREHOLE DATA
OPERATION DATA
EQUIPMENT AND RECORDING DATA

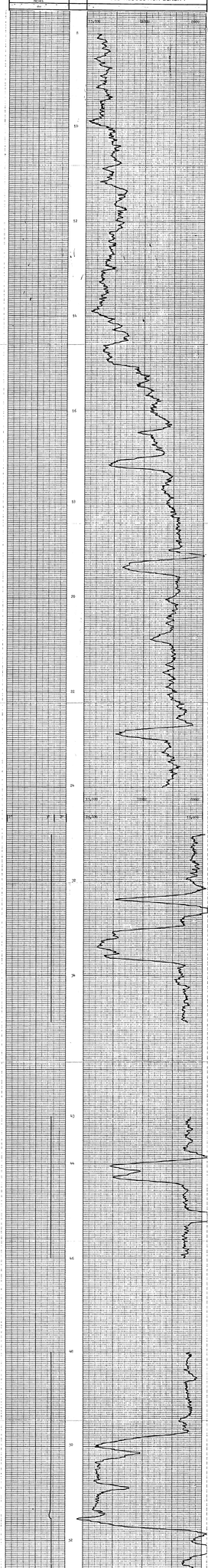
DENSITY TYPE
COAL
CONVERSION
SENSOR

DENSITY
CALIPER
SEAM THICKNESS

SEAM THICKNESS LOG INTERVALS

B P B SEAM THICKNESS LOG

CALIPER (INCHES) | DEPTH | BED RESOLUTION DENSITY



CALIPER (INCHES) | DEPTH | BED RESOLUTION DENSITY

BPB

BOREHOLE
CLIENT
AREA
COUNTRY

SEAM THICKNESS LOG

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COAL QUALITY LOG

BPB

BORE HOLE	
CLIENT	
AREA	
COUNTY	
STATE	
PROVINCE	
LOCATION	
SERVICE CO.	
RIG	
DATE	
RUN NO.	
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.	
EQUIPMENT NO.	
LOCATION	
RECORDED BY	
WITNESSED BY	

SOURCE TYPE	
COMBINATION SONDE	
COAL QUALITY	LOG INTERVALS
LOG SUITE	
COAL QUALITY	
L.S. DENSITY	
REMARKS	

RECORDED DATA

TK - TELKWA 83(2)A

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BOREHOLE 325 (4)

CLIENT

AREA

COUNTRY

DATE LOGGED

DEPTH SCALE

OF LOGS

BOREHOLE DATA REFER TO LOG

OPERATION DATA REFER TO LOG

EQUIPMENT AND RECORDING DATA

LOG		PANEL		CAL COLLE
	LOG RATES	TAPING RECORDING SPEED	NO REPLAY	SPEED	S.C.	NORM

SCALE FACTOR

MONITOR

REMARKS

DEPTH

SANDSTONE POROSITY

BOREHOLE

CLIENT

AREA

COUNTRY

DEPTH

1K - Elkum 83(3)A

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BPB

BOREHOLE 325 (5)

CLIENT

AREA

COUNTRY

DATE LOGGED

DEPTH SCALE

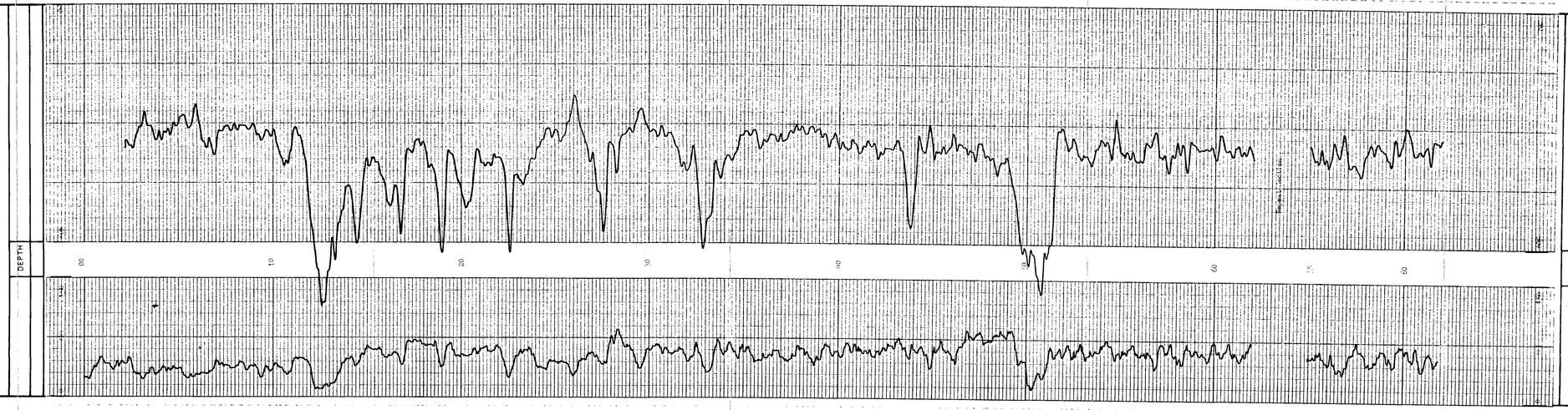
OF LOGS

BOREHOLE DATA	REFER TO	LOG
OPERATION DATA	REFER TO	LOG

EQUIPMENT AND RECORDING DATA

LOG	TAPING			PANEL			CAL COEFF
	LOG TAPED	RECORDER SPEED	RECORDER REPLAY	SPEED	V.F. SPEED	NORM	
	SOURCE No			MODEL No			

REMARKS



DEPTH

AREA

COUNTRY

BOREHOLE

CLIENT

BPB

TK - TELKWA 93 G/A

TELKWA PROJECT

DRILL HOLE #336 (1)

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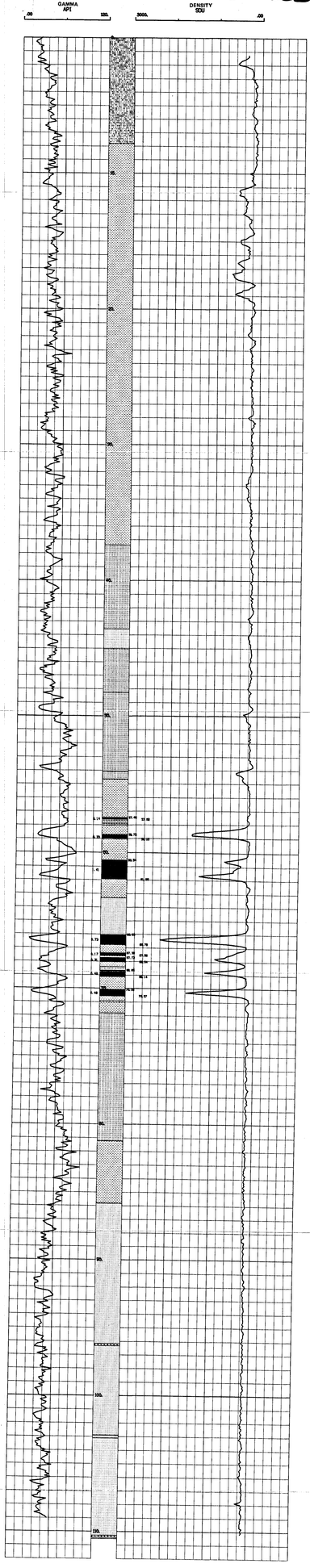


239

TK-Tricom 83/3/4

BOREHOLE: [illegible]
CLIENT: [illegible]
AREA: [illegible]
COUNTRY: Canada
DATE LOGGED: [illegible]
BOREHOLE DATA
TOTAL DEPTH: [illegible]
CASING DEPTH: [illegible]
BIT SIZE: [illegible]
MUD TYPE: [illegible]
MUD WEIGHT: [illegible]
MUD VISCOSITY: [illegible]
MUD PH: [illegible]
MUD RESISTIVITY: [illegible]
MUD TEMPERATURE: [illegible]
RECORDED BY: [illegible]
WITNESS: [illegible]
FIELD DATA
LOGGING UNIT: [illegible]
OPERATION DATA
SITE ELEVATION: [illegible]
KB ELEVATION: [illegible]
DATUM: [illegible]
MAGNETIC DECL: [illegible]
UNIT/TRUCK No: [illegible]
DATE: [illegible]
TIME: [illegible]
OPERATOR: [illegible]
ENGINEER: [illegible]
REMARKS: [illegible]

EQUIPMENT AND RECORDING DATA

LOG	EQUIPMENT: SONDE	EQUIPMENT: SOURCE	EQUIPMENT: CALIBRATOR	TAPING: LOG (LAPSE)	TAPING: RECORDING SPEED (F.P.M.)	TAPING: DIRECTION	PANEL: SPEED (F.P.M.)	PANEL: NORM	CAL: DATUM	DEPTHS: FROM	DEPTHS: TO	DEPTHS: INTERVAL
[illegible]	[illegible]	-	[illegible]	1	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	-	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ADDITIONAL SONDES RUN

SONDE	LOG	GENERAL / DETAIL ANALYSIS/COMPUTATIONS
[illegible]	[illegible]	[illegible]

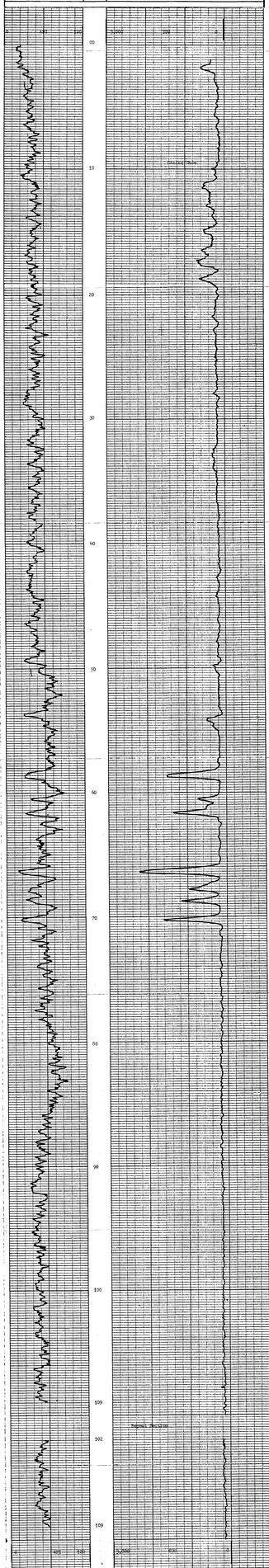
REFER TO ADDITIONAL HEADINGS

REMARKS

[illegible]

Gamma Ray | DEPTH | Tele. Spaced Density

0 API 100 | 1.00 2.00



Gamma Ray | DEPTH | Tele. Spaced Density

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

AC 12345 B

TK-TELKWA 83(7)A

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BOREHOLE TK83-336 (3)

CLIENT Crown West Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

DATE LOGGED 1/Jul/83

DEPTH SCALE 1:50

__ 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 OUT
	LOG TAPED	SONDE TYPE	SPEED REPLAY	UP/DOWN	SPEED	SPK.	NORM	
CALIPER	Y	cm/m	-	-	-	-	-	-
B R DENSITY	Y	cm/m	R	cm/m	-	-	-14	-

SOURCE SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG INTERVALS

FROM	57.0m	69.0m
TO	67.0m	77.0m
INTERVAL	7.0m	7.0m
FROM		INTERVAL TOTAL
TO		
INTERVAL		

REMARKS

Please note unusual scales in order to cater for drill rod effects. Caliper log has not been displayed.

SONDE TYPE
COAL COMBINATION SONDE

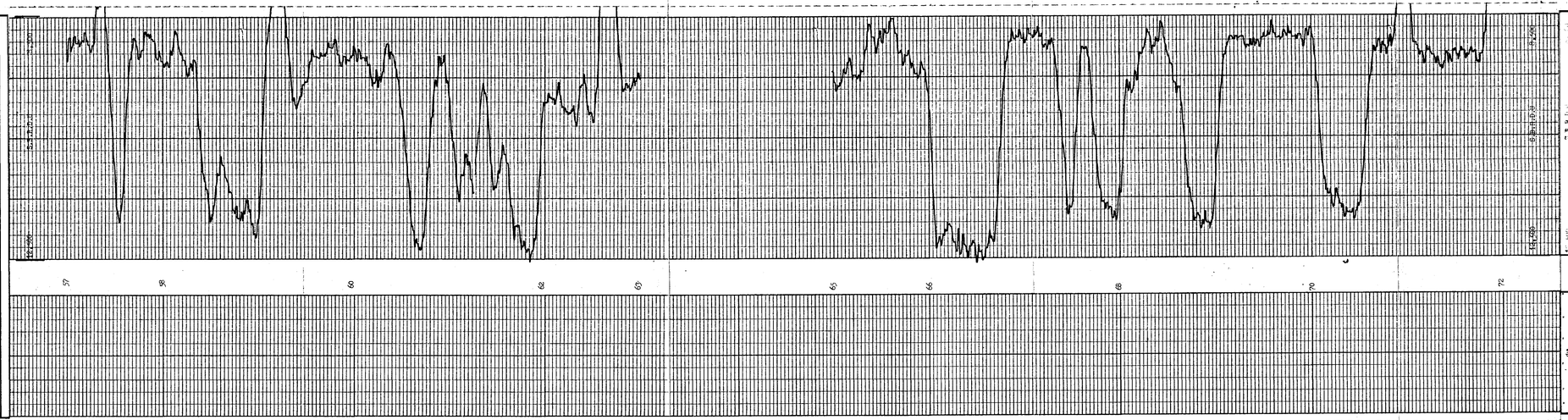
LOG SUITE
CALIPER
B R DENSITY

B P B SEAM THICKNESS LOG

BED RESOLUTION DENSITY

DEPTH

CALIPER INCHES



BED RESOLUTION DENSITY

DEPTH

CALIPER INCHES

BOREHOLE TK83-336

CLIENT Crown West Resources Ltd.

AREA Telkwa

COUNTRY Canada

SEAM THICKNESS LOG

TK-Telkwa 83/9A

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BPB

BOREHOLE TW83-336 (4)

CLIENT Crown Nest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

DATE LOGGED 10/Jul/83

DEPTH SCALE 1:20

3 OF 4 LOGS

COAL QUALITY LOG

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

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

LOG	TAPING				PANEL			SIDEWALL POSITION
	LOG TAPED	RECORDING SPEED	RECORDING DISPLAY	SPEED	J.C.	NORM		CAL CALIPER
GAMMA RAY	Y	2m/m	B	2m/m	2	–	4.5V	
L.S. DENSITY	Y	2m/m	B	2m/m	1	2.89	–	

SOURCE SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

SONDE TYPE
COAL COMBINATION SONDE

LOG SUITE:
GAMMA RAY
L.S. DENSITY

COAL QUALITY LOG INTERVALS

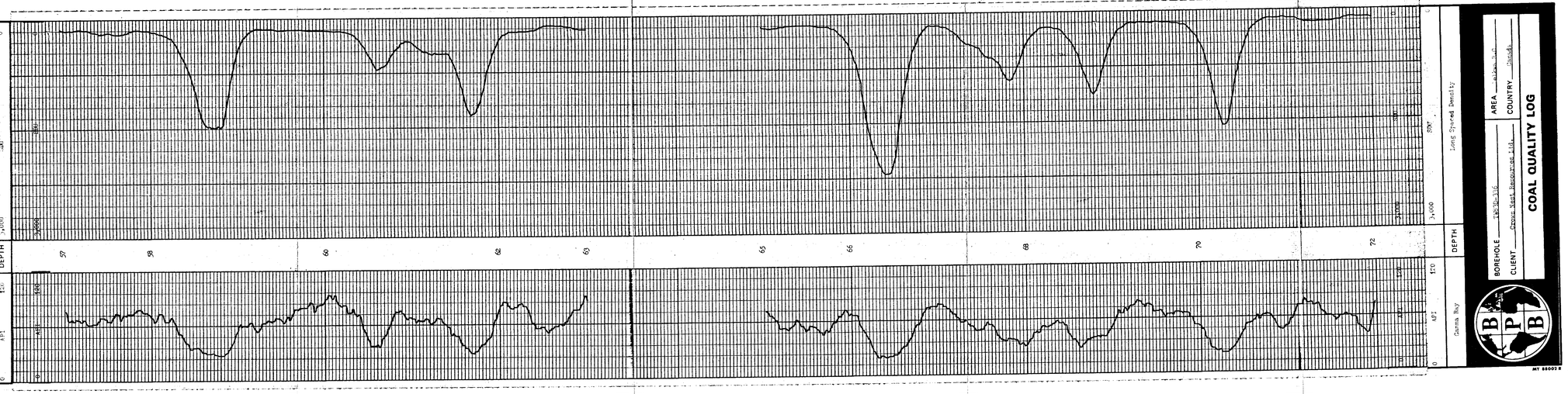
FROM	72.0m	63.0m
TO	67.0m	57.0m
INTERVAL	5.0m	6.0m
FROM		
TO		
INTERVAL		

INTERVAL TOTAL 11.0

REMARKS

Please note unusual scaler to compensate for drill rod effect.

B P B COAL QUALITY LOG



BOREHOLE TW83-336

CLIENT Crown Nest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

COAL QUALITY LOG

BPB

MY 86003 R

BPB

Gamma Ray & Neutron/Neutron Log.

BOREHOLE TW/12-336 (5)

CLIENT Crown Sect Resources Ltd.

AREA Yukon Sec.

COUNTRY Canada

DATE LOGGED 1/10/83

BOREHOLE DATA	Hole Size 7 7/8 @ 1220	LOG	
OPERATION DATA	Mud Wt 7 7/8 @ 1220	LOG	
EQUIPMENT AND RECORDING DATA			
LOG	TYPE	PARTS	SERIAL NUMBER
	Gamma Ray Neutron Sonde		1005
	Gamma Ray Neutron Sonde		1005
	Gamma Ray Neutron Sonde		1005

Ik-Tenum 83/3A

TELKWA PROJECT

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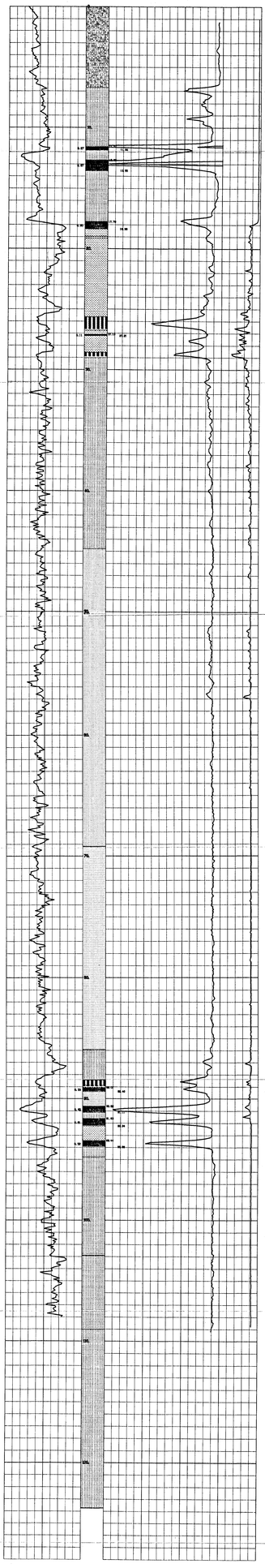
DRILL HOLE #337 ①



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

BPB

SEAM THICKNESS LOG

BOREHOLE
CLIENT
AREA
COUNTRY
DATE LOGGED

BOREHOLE DATA
OPERATION DATA
EQUIPMENT AND RECORDING DATA

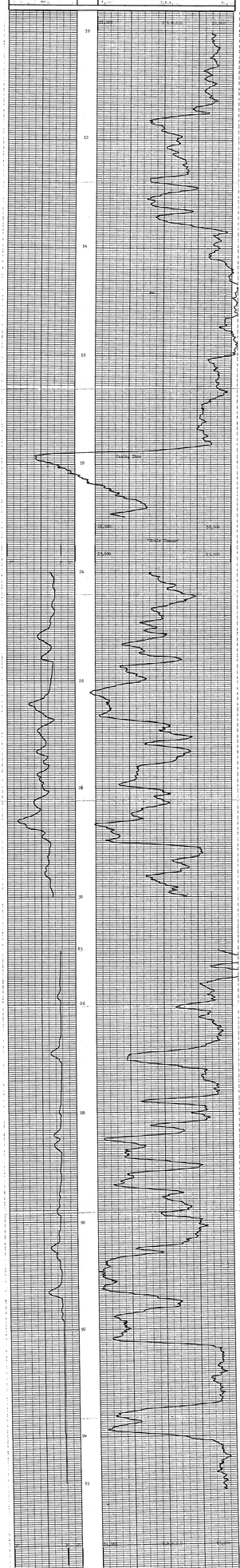
SONDE TYPE
CALIBRATION SONDE
LOG SHIFT
CALIPER
BED RESOLUTION DENSITY

SEAM THICKNESS LOG INTERVALS

REMARKS

BPB SEAM THICKNESS LOG

CALIPER	DEPTH	BED RESOLUTION DENSITY



CALIPER	DEPTH	BED RESOLUTION DENSITY

BPB

BOREHOLE
CLIENT
AREA
COUNTY

SEAM THICKNESS LOG

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COAL QUALITY LOG

BOREHOLE DATA: BORE NO. / CLIENT / AREA / COUNTRY / DATE (DD/MO/YR) / TIME (HR)

OPERATION DATA: RIGS NO. / OPERATOR / EQUIPMENT AND RECORDING DATA

SONDE TYPE / COMBINATION SONDE

LOG SUITE / CAMPAIGN / LOG QUALITY

DEPTH	DENSITY	CALIPER	GAMMA RAY	LOG QUALITY	LOG INITIALS

REMARKS

BPB COAL QUALITY LOG

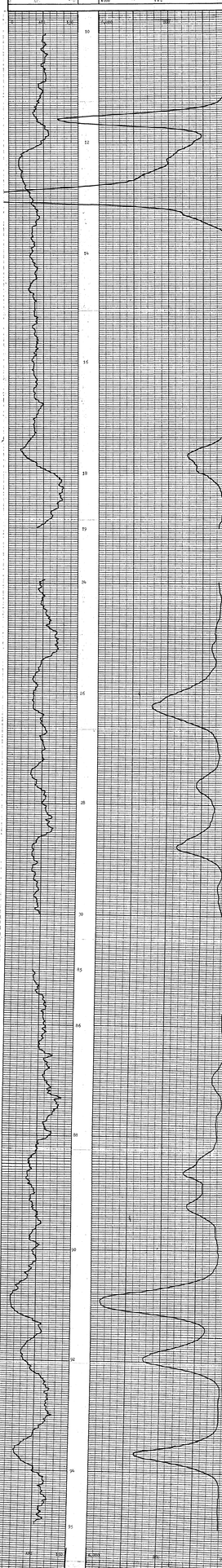
DEPTH

COAL BULK DENSITY (g/cm³)

HOLE SIZE CORRECTION DATA

	2	4	6	8	10	12	14	16	18	20	22	24
7"												
6"												
5"												
4"												

1.0 — 2.0 — 2.000 — 2.500 — 3.000



DEPTH

COAL BULK DENSITY (g/cm³)

BOREHOLE / AREA / CLIENT / COUNTRY

COAL QUALITY LOG

TK - Tokwa 83(3)a

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BOREHOLE 337 (4)

CLIENT

AREA

COUNTRY

DATE LOGGED

DEPTH SCALE

BOREHOLE DATA REFER TO LOG

OPERATION DATA REFER TO LOG

EQUIPMENT AND RECORDING DATA

LOG	TAPING				PANEL		SCALE
	LOG	TAPE	RECORDER	RETURN	SPEED	LOG	NORM

Gamma Ray | DEPTH | Neutron/Neutron

0 API 150 | 3m:1200/5m:1200 | 0 20% -20%

Neutron/Neutron & Gamma Ray Log

BOREHOLE 30/3-3?? (5)

CLIENT Chevron East Canada Limited

AREA Nova Scotia

COUNTRY Canada

DATE LOGGED 19/11/1983

RUN ONE

BOREHOLE DATA MAXIMUM DIAMETER 17.5in/44cm

OPERATION DATA MAXIMUM DEVIATION 0.0deg

EQUIPMENT AND RECORDING DATA

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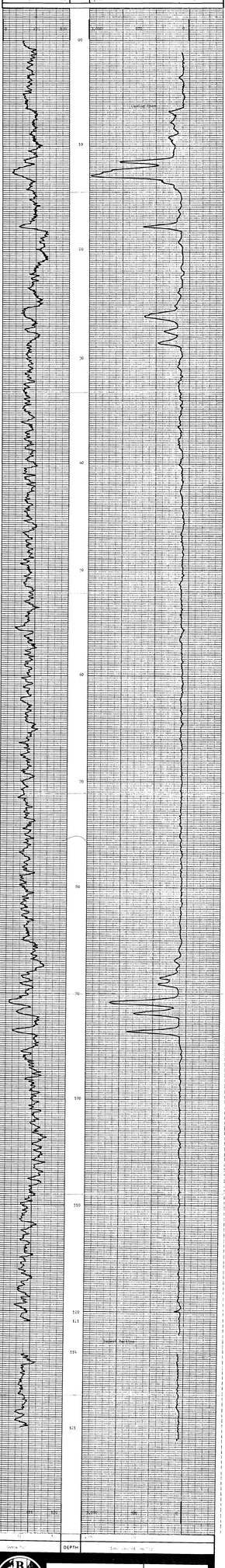
BPB

BOREHOLE
CLIENT
AREA
COUNTRY
DATE RECORDED
BOREHOLE DATA
OPERATION DATA
EQUIPMENT AND RECORDING DATA
REMARKS

DEPTH



DEPTH

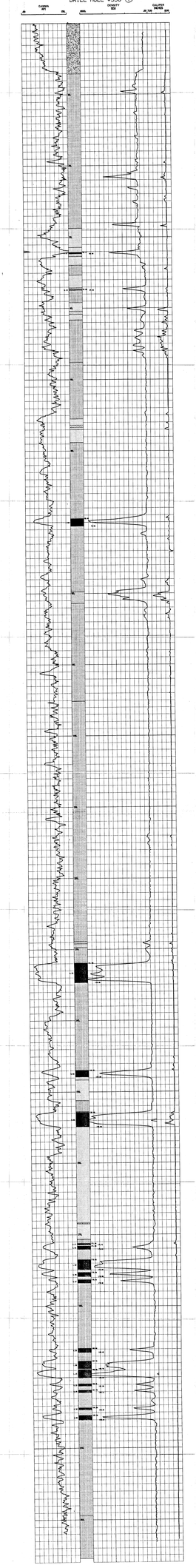
BPB

BOREHOLE
CLIENT
AREA
COUNTRY

Tex. Trucco 10/24

TELKWA PROJECT 239

DRILL HOLE #338 (1)



Tri-Tronics 81/3/a

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B P B SEAM THICKNESS LOG

BOREHOLE	00-12-SM
COMPANY	Hanna Basin Resources Ltd.
AREA	TOTAL 3
COUNTRY	Canada
DATE LOGGED	20-Mar-01
TIME	10:00 AM

SEAM THICKNESS LOG

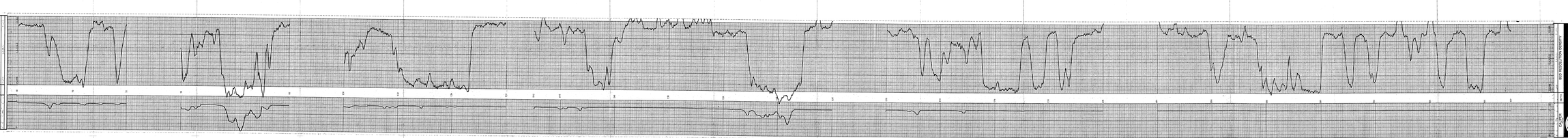
BOREHOLE DATA	DEPTH TO LOGGER (m)
OPERATION DATA	DEPTH TO LOGGER (m)
EQUIPMENT AND RECORDING DATA	

Tool Number	Tool Type	Serial No.	Calibration Date
3/a	Density	1	20-Mar-01
3/a	Gamma	1	20-Mar-01

Recorded Channels	Channel No.	Channel Type	Channel Name
	1	Density	Density
	2	Gamma	Gamma

SENSOR TYPE	
SENSOR COMBINATION	
SENSOR	
BOREHOLE FLUID	
FLUID LEVEL	
FLUID DENSITY	

SEAM THICKNESS LOG INTERVALS			
Seam Name	Depth (m)	Seam Name	Depth (m)



B P B SEAM THICKNESS LOG

Date	20-Mar-01
Time	10:00 AM
Depth	
Speed	
Caliper	

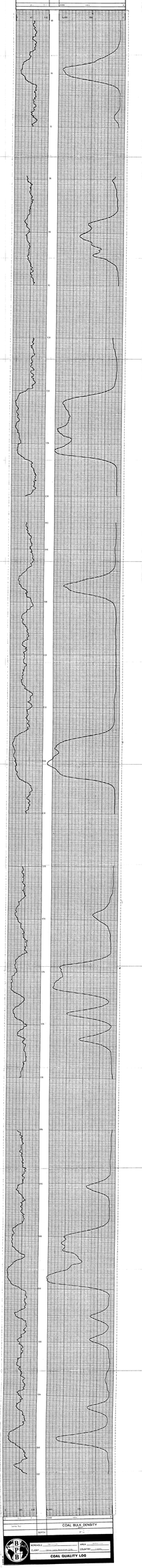
RDI RESOLUTION DENSITY

Seam Thickness Log

BPB COAL QUALITY LOG

Series No.	DEPTH
	COAL BULK DENSITY

HOLE SIZE CORRECTION DATA



Series No.	COAL BULK DENSITY
	DEPTH

BOREHOLE: [illegible] FIELD: [illegible]

CLIENT: [illegible] COUNTRY: [illegible]

COAL QUALITY LOG

LM-8TX-110-EA-40

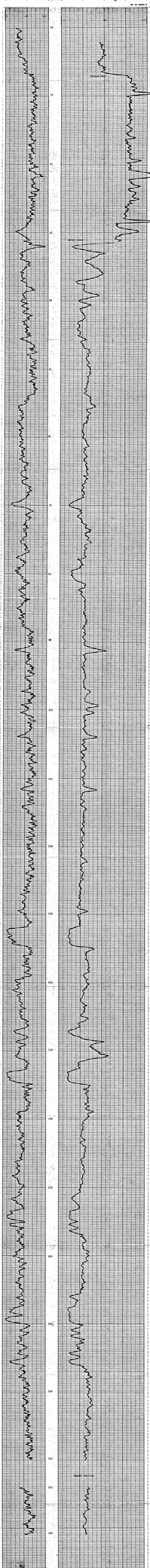
Company	BP Exploration (Alaska) Inc.
Well	Prudhoe Bay Unit Gas Injector 1
Field	Prudhoe Bay
County	North Slope Borough
State	Alaska
Other Services	CNL/GR/CCL
Permanent Datum	Mean Sea Level
Log Measured From	Rotary Table
Drilling Measured From	Rotary Table
Elevation	0
Elevation	0
Elevation	0
Date	1-Jan-1900
Run Number	1
Depth Driller	0
Depth Logger	0
Bottom Log Interval	0
Top Log Interval	0
Casing Driller	0 @ 0
Casing Logger	0
Bit Size	0
Type Fluid in Hole	Dry
Density	0
Viscosity	0
Fluid Loss	0
Source of Sample	Flowing
Rm @ Meas. Temp.	0 @ 0
Rmf @ Meas. Temp.	0 @ 0
Rmc @ Meas. Temp.	0 @ 0
Rm @ BHT	0 @ 0
Time Since Circulation	0
Time Since Circ.	0
Max. Rec. Temp.	0
Equip. Location	0
Recorded By	0
Witnessed By	0

Gamma Ray | DEPTH | Tension/Time/Gamma

SANDSTONE POROSITY

0%	10	20	30	40	50
0°					
0°					
0°					

SET IN ARBOR 2

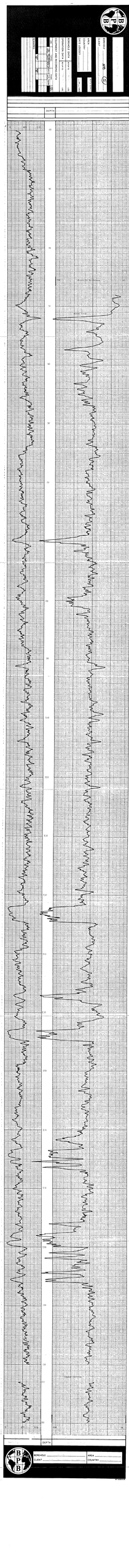


Gamma Ray | DEPTH | Tension/Time/Gamma

BP

COMPANY	BP EXPLORATION (ALASKA) INC.
WELL	PRUDHOE BAY UNIT GAS INJECTOR 1
FIELD	PRUDHOE BAY
COUNTY	NORTH SLOPE BOROUGH
STATE	ALASKA
COUNTRY	USA

BP 1000000


BPB
WELL
239
FIELD
COUNTY
STATE
DATE
BOREHOLE SIZE
MAXIMUM RECORDED TEMPERATURE
DEPTH
BOREHOLE
CLIENT
AREA
COUNTRY

Tel Telkwa 20614

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DIPMETER ANALYSIS

CLIENT CROWS NEST RESOURCES
BOREHOLE TW 83D-338 (6)
AREA TELKWA, B.C.
COUNTRY CANADA

DATE LOGGED.....21-JUL-83
DATE PROCESSED..28-JUL-83

COMMENTS.....

INTERPRETATION PARAMETERS
STEP 1.20M.
INTERVAL 3.32M.
SENSOR-BACK 90.
DECLINATION 28.0 EAST
DEPTH RANGE 25.00 - 218.20M.
DATE PROCESSED 28-JUL-83

AVERAGE BOREHOLE DEVIATION & DIRECTION
AVERAGE DEVIATION 0.0DEG.

HIGH DEVIATION INTERVALS EXCEED 10.0DEGREES.
DIP ANGLES ARE UNCORRECTED FOR DEVIATION.

LEGEND:
GOOD (+0.5)
FAIR (+0.3)

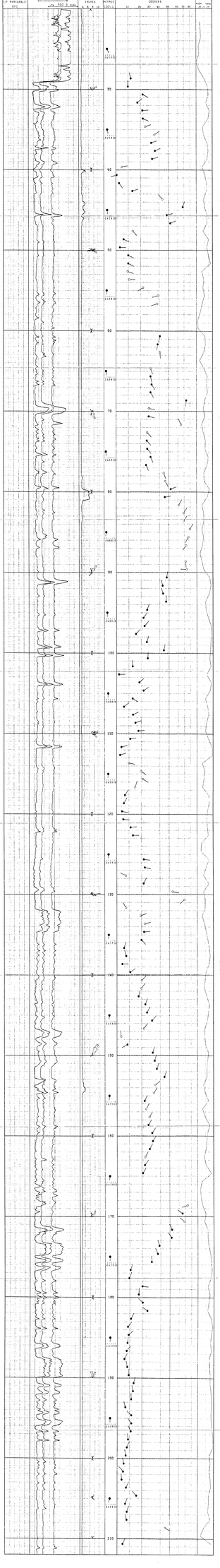
GAMMA
(# REPLIABLE
OFF)
min 140.1 max
min 200.2 max
min 400.3 max

CALIPER
INCHES
6 8 10

DEPTH
METRES
1200

DIP ANGLE & DIRECTION
DEGREES
12 20 30 40 50 60 70 80

RELATIVE
BREAKOUTS
FROM 0.0
TO 0.0

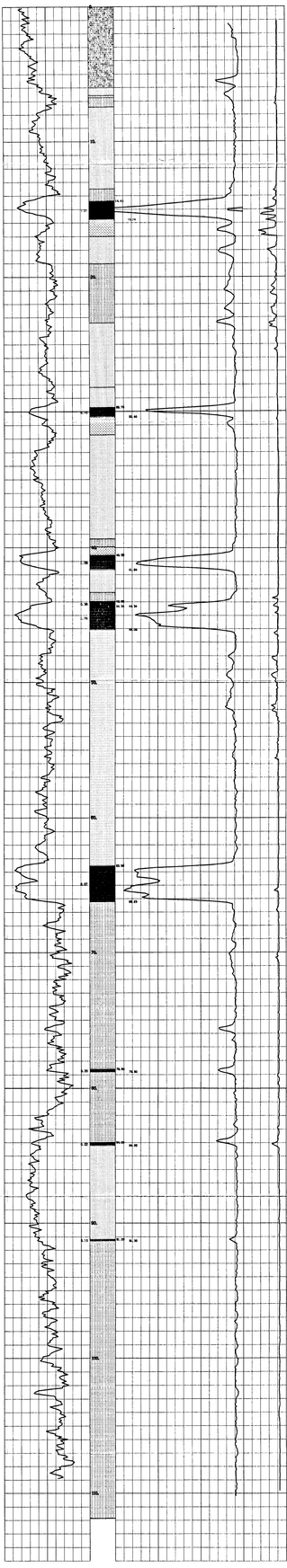


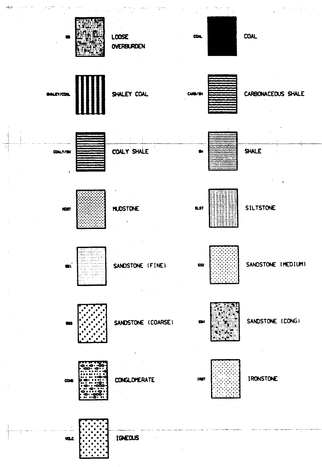
TK-Telkwa 8/3/a

TELKWA PROJECT

DRILL HOLE #339 (1)

239





239

T.K. Tillson 8/89

BPB

BOREHOLE 392 (2)
CLIENT
AREA
COUNTRY
DATE LOGGED
DATE PROCESSED

SEAM THICKNESS LOG

BOREHOLE DATA — SEAM THICKNESS LOG
OPERATION DATA — SEAM THICKNESS LOG
EQUIPMENT AND RECORDING DATA — SEAM THICKNESS LOG

SONDE TYPE			
COAL COMBINATION SONDE			
LOG SUITE			
BP DENSITY			

SEAM THICKNESS LOG INTERVALS		

239

TK-Tetlow 81/6

COAL QUALITY LOG

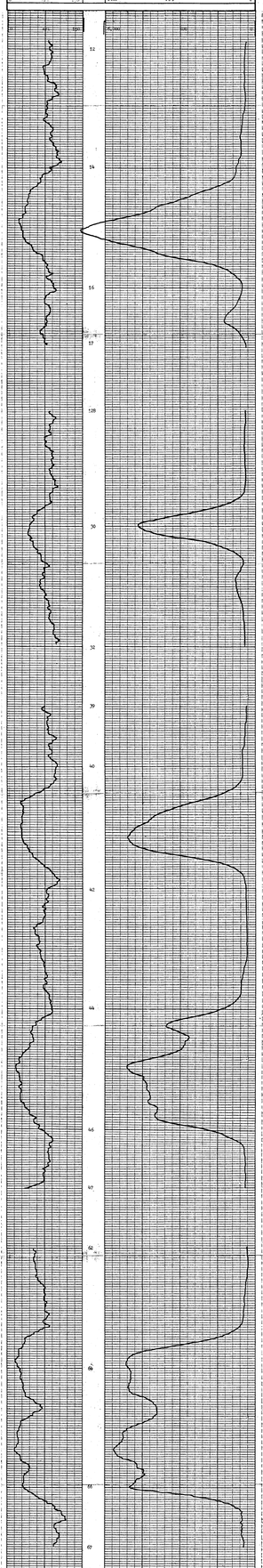
BOREHOLE: TK-81-239
CLIENT: Canada Cement Lafarge Ltd.
AREA: Gaines Bay
COUNTRY: Canada
DATE LOGGED: 1981-06-13
OPERATOR: Brent Technology Inc.
CALIBRATION DATE: 1981-06-13
LOG SUITE: Gamma Ray, Density
LS DENSITY

BPB COAL QUALITY LOG

DEPTH

Gamma Ray — COAL BULK DENSITY (g/cm³)

HOLE SIZE CORRECTION DATA



Gamma Ray — COAL BULK DENSITY (g/cm³) — DEPTH

BOREHOLE: TK-81-239 | AREA: Gaines Bay
CLIENT: Canada Cement Lafarge Ltd. | COUNTRY: Canada

COAL QUALITY LOG

239

Jk - Fleur Pilote

BPB

Gamma Ray / Neutron/Neutron Ratio

BOREHOLE 239 (4)

CLIENT Canadian Superior Oil Ltd.

AREA Tolkinn D-2

COUNTRY Canada

DATE LOGGED 20-11-1973

RUN NO. 1

DEPTH DRILLER 1000

DEPTH LOGGER 1000

BOREHOLE DATA

BIT SIZE 11.00 in

OPERATION DATA

MAX. TEMP. 100 °F

EQUIPMENT AND RECORDING DATA

TK - TEKWA 83/3h

239

BOREHOLE 239 (5)

CLIENT

AREA

COUNTRY

DATE LOGGED

DEPTH SCALE

BOREHOLE DATA REFER TO LOG

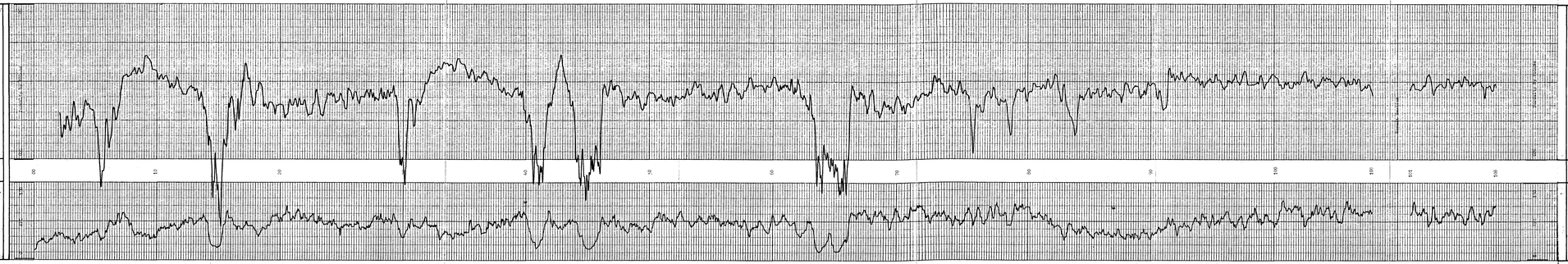
OPERATION DATA REFER TO LOG

EQUIPMENT AND RECORDING DATA

LOG	TAPING				PANEL		LOGGER
	LOG	TAPE	SPEED	SPEED	LOG	NORM	

REMARKS

DEPTH



DEPTH

AREA

COUNTRY

BOREHOLE

CLIENT

239

IR-TEKA 8334

BPB

MULTI-CHANNEL SONIC LOG

BOREHOLE 337 (6)
CLIENT
AREA
COUNTRY
DATE LOGGED
CONTRACTOR

BOREHOLE DATA

DRILLER'S DEPTH	
LOGGER'S DEPTH	
CASING	
FLUID LEVEL	
FLUID TYPE	
FLUID DENSITY	
PH	
FLUID RESISTIVITY	
TEMPERATURE	
RIG	
RECORDED BY	
WITNESSED BY	

OPERATION DATA

TIME LOGGED	
TIME STARTED	
TIME FINISHED	
DATE	
OPERATOR	
ENGINEER	
TRUCK	

FLUID DATA

CONDITIONS	°C	°F

EQUIPMENT AND RECORDING DATA

SONDE No.

	TRANSDUCER ARRANGEMENT			CENTRALISERS SET TO: GENERAL LOGGING		DETAIL LOGGING		DIAMETER: DATA RECORDED			DATA DISPLAYED		
	RECEIVER PAIR	TRANSMITTER PAIR	SPACING CM	SPEED	°C	SETS	SPEED	°C	SETS	FROM	TO	INTERVAL	FROM	TO	INTERVAL
CHANNEL 1	R1 - R2	R1	24"												
CHANNEL 2	R2 - R4	R2	30"												
CHANNEL 3	R1 - R4	R2	54"												
CHANNEL 4	R2 - R4	R1	60"												

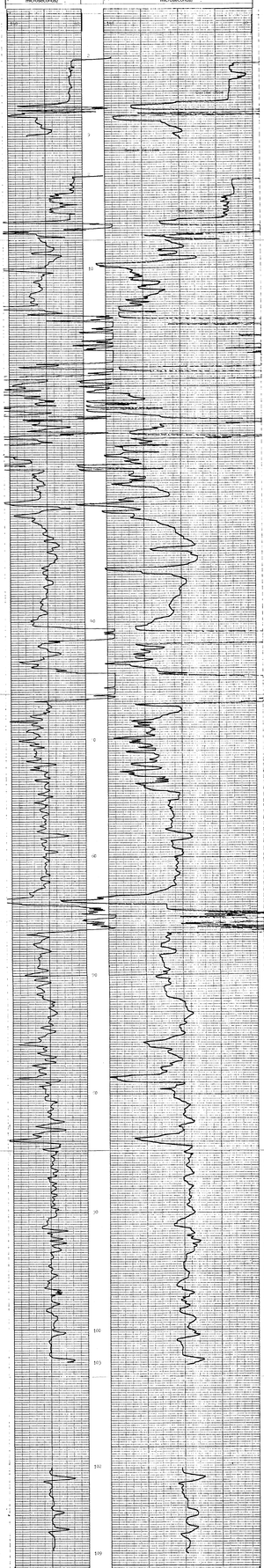
DETAIL ZONES DISPLAYED SEE RELEVANT LOG

FROM	INTERVAL TOTAL
TO	
INTERVAL	

TOP OF SONDE

REMARKS

CHANNEL	DEPTH	CHANNEL
INTERVAL TRANSIT TIME microseconds/		INTERVAL TRANSIT TIME microseconds/



microseconds/ CHANNEL	DEPTH	microseconds/ CHANNEL

BPB

BOREHOLE AREA
CLIENT COUNTRY

MC SONIC LOG

TK - TELKWA 83/3/A

239

DIPMETER ANALYSIS

CLIENT ___ CROWS NEST RESOURCES
BOREHOLE ___ TW 83D-339 (7)
AREA ___ TELKWA, B.C.
COUNTRY ___ CANADA

DATE LOGGED.....23-JUL-83
DATE PROCESSED..29-JUL-83

COMMENTS.....

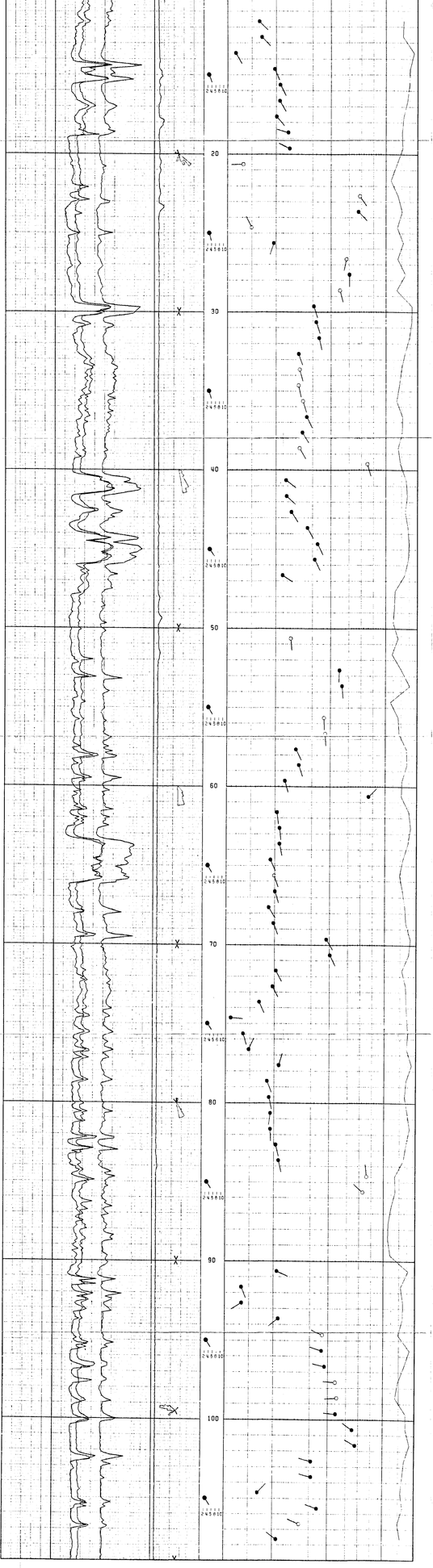
INTERPRETATION PARAMETERS

STEP 1.00M.
INTERVAL 2.00M.
SEARCH ANGLE 30.
DECLINATION 26.0 EAST
DEPTH RANGE 13.00 - 109.00M.
DATE PROCESSED 29-JUL-83

AVERAGE BOREHOLE DEVIATION & DIRECTION
TRADITIONAL EVERY 10.0M.

ROSE DIAGRAMS SEGMENTED EVERY TEN DEGREES.
TIP PADDLE PER DIP MARKER DISPLAYED

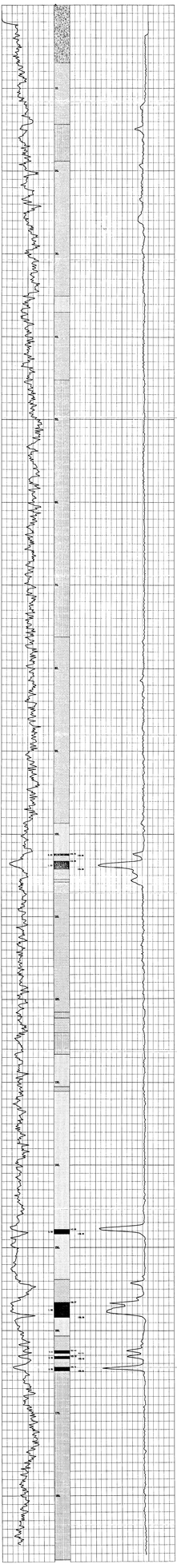
LEGEND:
GOOD (+0.50)
POOR (+0.10)



Tr Telkwa 2/6/4

TELKWA PROJECT 239

DRILL HOLE #340 D



BOREHOLE	[illegible]
DATE	[illegible]
COUNTY	[illegible]
STATE	[illegible]
COMPANY	[illegible]
LOCATION	[illegible]
ELEVATION	[illegible]
DATUM	[illegible]
DATE	[illegible]
RUN	[illegible]
DEPTH	[illegible]
DRILLER	[illegible]
LOGGER	[illegible]
BIT SIZE	[illegible]
CASING	[illegible]
TYPE FLUID	[illegible]
DENSITY	[illegible]
VISCOSITY	[illegible]
PH	[illegible]
FLUID LOSS	[illegible]
SOURCE	[illegible]
RM	[illegible]
RMF	[illegible]
RMC	[illegible]
RM @ BHT	[illegible]
TIME SINCE CIRC.	[illegible]
TIME SINCE PUMPING	[illegible]
MAX. REC. TEMP.	[illegible]
EQUIP. LOCATION	[illegible]
RECORDED BY	[illegible]
WITNESSED BY	[illegible]

OPERATIONAL DATA

BOREHOLE	[illegible]
DATE	[illegible]
COUNTY	[illegible]
STATE	[illegible]
COMPANY	[illegible]
LOCATION	[illegible]
ELEVATION	[illegible]
DATUM	[illegible]
DATE	[illegible]
RUN	[illegible]
DEPTH	[illegible]
DRILLER	[illegible]
LOGGER	[illegible]
BIT SIZE	[illegible]
CASING	[illegible]
TYPE FLUID	[illegible]
DENSITY	[illegible]
VISCOSITY	[illegible]
PH	[illegible]
FLUID LOSS	[illegible]
SOURCE	[illegible]
RM	[illegible]
RMF	[illegible]
RMC	[illegible]
RM @ BHT	[illegible]
TIME SINCE CIRC.	[illegible]
TIME SINCE PUMPING	[illegible]
MAX. REC. TEMP.	[illegible]
EQUIP. LOCATION	[illegible]
RECORDED BY	[illegible]
WITNESSED BY	[illegible]

EQUIPMENT AND RECORDING DATA

SPL	SONDE	EQUIPMENT SOURCE	S.N.	CASING LOC.	RECORDING DEVICE	RECORDING SPEED	FIELD S.T.	S.N.	T.D.	DEPTH FROM	TO	BRINE
2CT	CTU	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1CD	CDU	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2FD	FDU	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ADDITIONAL SONDES RUN

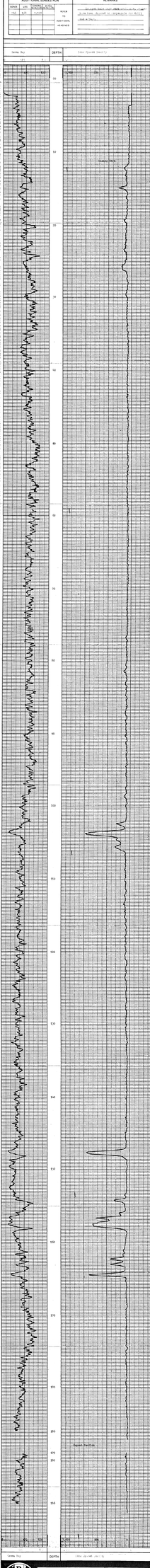
SONDE	LOC.	SONDE S.N.	FIELD S.T.
[illegible]	[illegible]	[illegible]	[illegible]

NOTE TO ADDITIONAL READINGS

REMARKS

[illegible]

CASING SIZE	[illegible]
DEPTH	[illegible]



CASING SIZE	[illegible]
DEPTH	[illegible]

BOREHOLE	[illegible]
EVENT	[illegible]
AREA	[illegible]
COUNTRY	[illegible]

239

JC - Tellus 8/5/96

BPB

BOREHOLE 342 (3)
CLIENT
AREA
COUNTRY
DATE LOGGED

SEAM THICKNESS LOG

BOREHOLE DATA — REFERENCE & THICKNESS
OPERATION DATA — WITH TO 1 METRE OK
EQUIPMENT AND RECORDING DATA
LOG CORRELATION — SEAM CALL - POS ON

1	1.00	1.00	1.00	1.00	1.00
2					
3					
4					
5					
6					
7					
8					
9					
10					

SONDE TYPE
COAL COMBUSTION SONDE
LOG SUITE
CALIBRATION
GR DENSITY

SEAM THICKNESS LOG INTERVALS

FROM	TO	THICKNESS

REMARKS

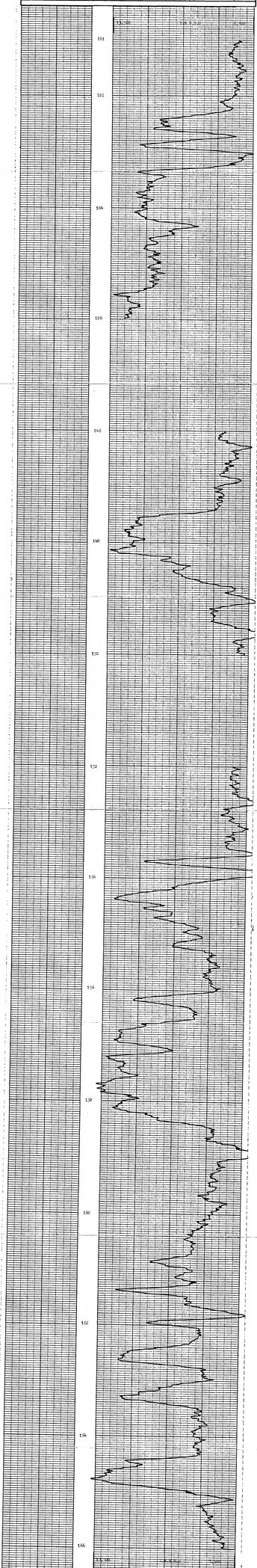
B P B SEAM THICKNESS LOG

CALIBRATION

CALIPER INCHES 6 — 20

DEPTH

BED RESOLUTION DENSITY



CALIPER INCHES 6 — 20

DEPTH

BED RESOLUTION DENSITY

BPB

BOREHOLE
CLIENT
AREA
COUNTRY

SEAM THICKNESS LOG

239

BPB

BOREHOLE 239
CLIENT Cross Rock Resources Ltd.
AREA Telkwa
COUNTRY Canada
DATE LOGGED 24-Jul-1990
DATE/TIME 1130
BY Jim Hood

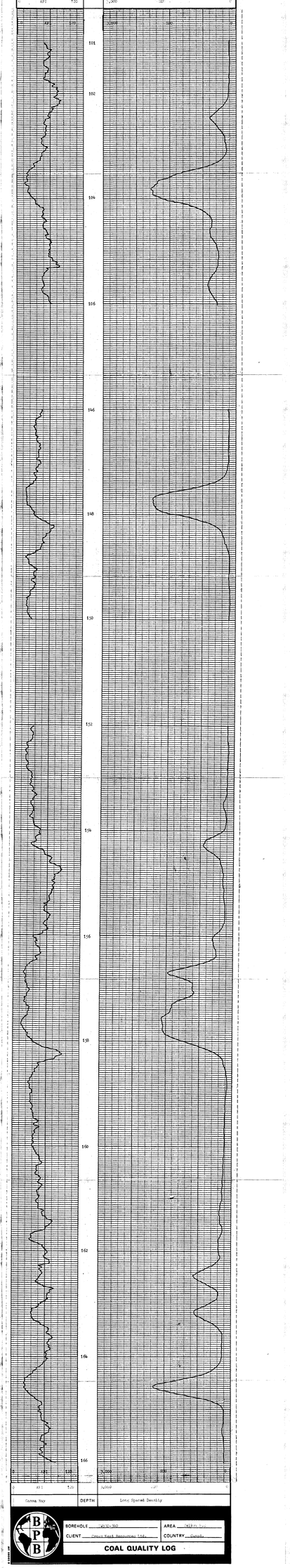
COAL QUALITY LOG

BOREHOLE DATA
BORE ID/HOLE ID
OPERATOR DATA
EQUIPMENT AND RECORDING DATA
COAL COMBUSTION SONDE
SERIAL/PROTOTYPE

SONDE TYPE
COAL COMBUSTION SONDE

COAL QUALITY LOG INTERVALS	TOP	100.0m 328.0ft
	BOTTOM	166.0m 544.8ft
LOG SUITE		Gamma Ray, Sonic Spaced Density
REMARKS		Hole dry

BPB COAL QUALITY LOG



BPB

BOREHOLE 239-300
AREA Telkwa
CLIENT Cross Rock Resources Ltd.
COUNTRY Canada

COAL QUALITY LOG

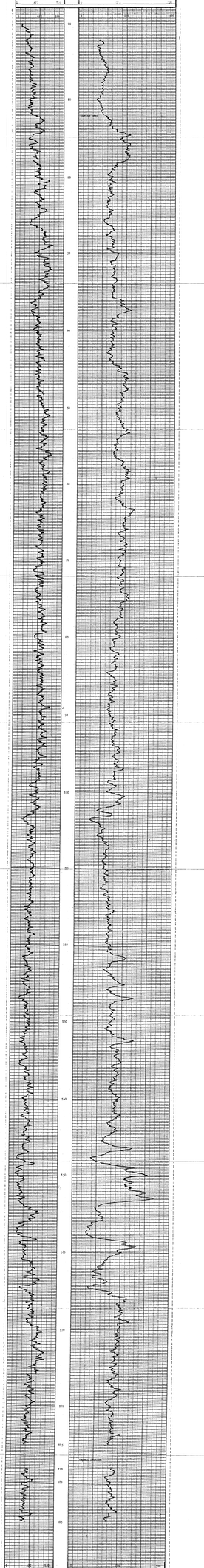
BP

BOREHOLE: [illegible]
CLIENT: [illegible]
COUNTY: [illegible]
DATE: [illegible]
RUN: [illegible]
DEPTH: [illegible]
BOREHOLE DIA: [illegible]
MAX TEMP: [illegible]
MAX PRESSURE: [illegible]
RECORDED DATA: [illegible]
TOOL: [illegible]
SERIAL NO: [illegible]
LOGGING DATE: [illegible]
LOGGING UNIT: [illegible]
OPERATOR: [illegible]
REMARKS: [illegible]

239

FC - Tiffany 83 Clay

LOGGING UNIT	DEPTH	INCREASING TAPE DEPTH
0		0



LOGGING UNIT	DEPTH	INCREASING TAPE DEPTH
0		0

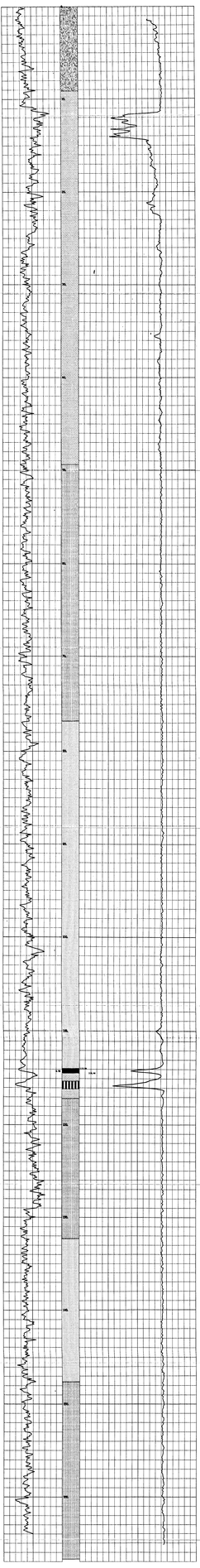
BP

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

TELKWA PROJECT

DRILL HOLE #341 ①

239



SOIL	LOOSE OVERBURDEN	COAL	COAL
SHALEY COAL	SHALEY COAL	CARB SHALE	CARBONACEOUS SHALE
COALY SHALE	COALY SHALE	SH	SHALE
MUDSTONE	MUDSTONE	SLT	SILTSTONE
SS	SANDSTONE (FINE)	SM	SANDSTONE (MEDIUM)
SC	SANDSTONE (COARSE)	SV	SANDSTONE (LONG)
CGL	CONGLOMERATE	CST	CONGSTONE
IGNEOUS	IGNEOUS		

239 1.5" Tension 5210h

BPB

RECORDED 34 (2)

EVENT

AREA

COUNTRY

DATE RECORDED

BOREHOLE DATA

BOREHOLE	
CASING	
BIT SIZE	
DEPTH	
MUD TYPE	
MUD WT.	
MUD VISC.	
FLUID LEVEL	
MAX. TEMP.	

FLUID DATA

TK-Telkwa 83(3)D

239

TW83D-341-BKD

BOREHOLE TW83D-341 (3)
CLIENT Crows Nest Resources Ltd.

AREA Telkwa B.C
COUNTRY Canada
DATE LOGGED 25/Jul/83

DEPTH SCALE 1:20

2 OF 4 LOGS

SEAM THICKNESS LOG

BOREHOLE DATA — REFER TO LITHOLOGY LOG

OPERATION DATA — REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

SIDEWALL POSITION

LOG	TAPING			PANEL		CAL COEFF
	LOG TAPED	RECORD SPEED	DIRECT OR REPLAY	SPEED	TC SECS	NORM
CALIPER	Y	2m/m	-	-	-	-
BR DENSITY	Y	2m/m	R	2m/m	3	0.46 -

SOURCE SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG INTERVALS

FROM	117.0m		
TO	112.0m		
INTERVAL	5.0m	INTERVAL TOTAL	
FROM			
TO			
INTERVAL			

REMARKS

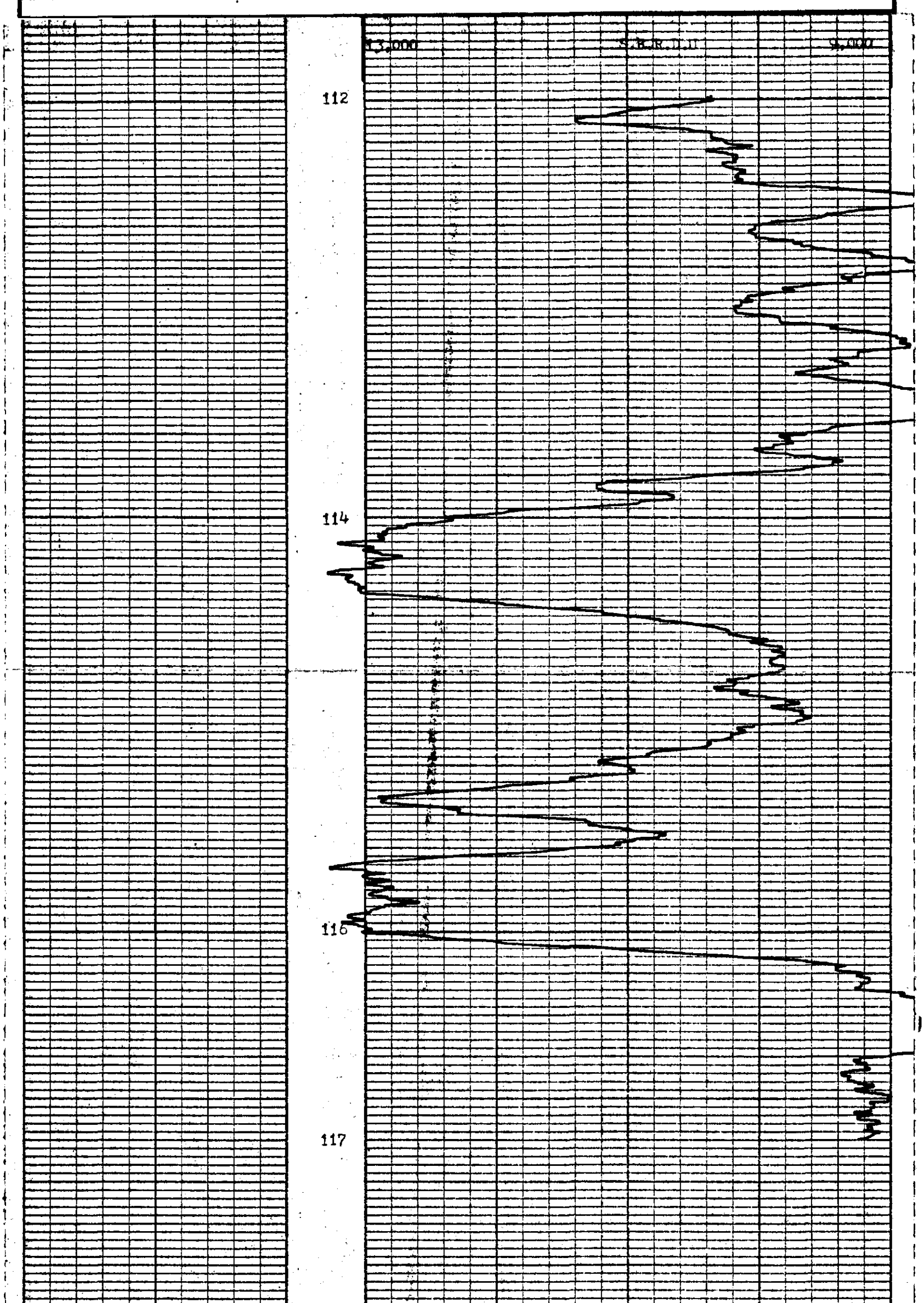
Please note unusual scales to compensate for drill rod effect. Caliper log is not displayed.

SONDE TYPE:
COAL
COMBINATION
SONDE

LOG SUITE:
CALIPER
B.R. DENSITY

B P B SEAM THICKNESS LOG

CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
" " " " " " dia		13.000 S.B.R.D.U 9.000



CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
" " " " " " dia		13.000 S.B.R.D.U 9.000

BOREHOLE TW83D-341
CLIENT Crows Nest Resources Ltd.
AREA Telkwa B.C
COUNTRY Canada

SEAM THICKNESS LOG

MY 88002 R

239

BOREHOLE TW82-341 (4)

CLIENT Crows Nest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

DATE LOGGED 25/Jul/82

DEPTH SCALE 1:20

3 OF 4 LOGS

COAL QUALITY LOG

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

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

LOG	TAPING			PANEL			CAL COEFF
	LOG TAPED	RECORD SPEED	DIRECT or REPLAY	SPEED	T C SECS	NORM	
GAMMA RAY	Y	2m/m	R	2m/m	-	-	1.00
L.S. DENSITY	Y	2m/m	R	2m/m	1	2.0x1	-

SIDEWALL POSITION

SOURCE, SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: GAMMA RAY L.S. DENSITY

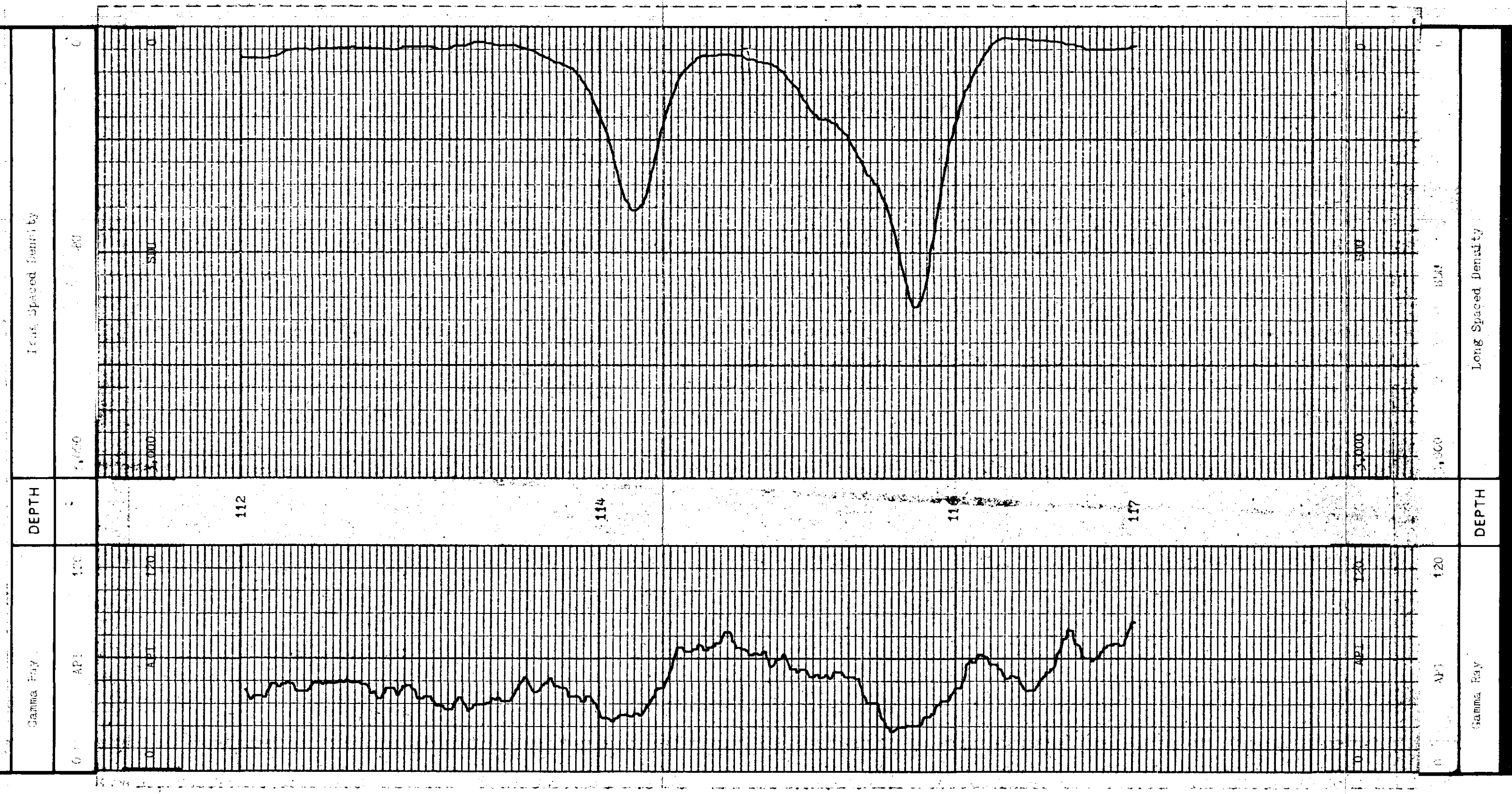
COAL QUALITY LOG INTERVALS

FROM	111.0m
TO	112.0m
INTERVAL	1.0m
FROM	
TO	
INTERVAL	
INTERVAL TOTAL	

REMARKS

Please note unusual peaks to compensate for drill rods.

B.P.B. COAL QUALITY LOG



BOREHOLE TW82-341

CLIENT Crows Nest Resources Ltd.

AREA Telkwa B.C.

COUNTRY Canada

COAL QUALITY LOG

MY 88002 R

239

BPB

WELL: [illegible]

CLIENT: [illegible]

AREA: [illegible]

COUNTRY: [illegible]

DATE RECORDED: [illegible]

BOREHOLE DATA: [illegible]

OPERATOR DATA: [illegible]

EQUIPMENT AND RECORDING DATA: [illegible]

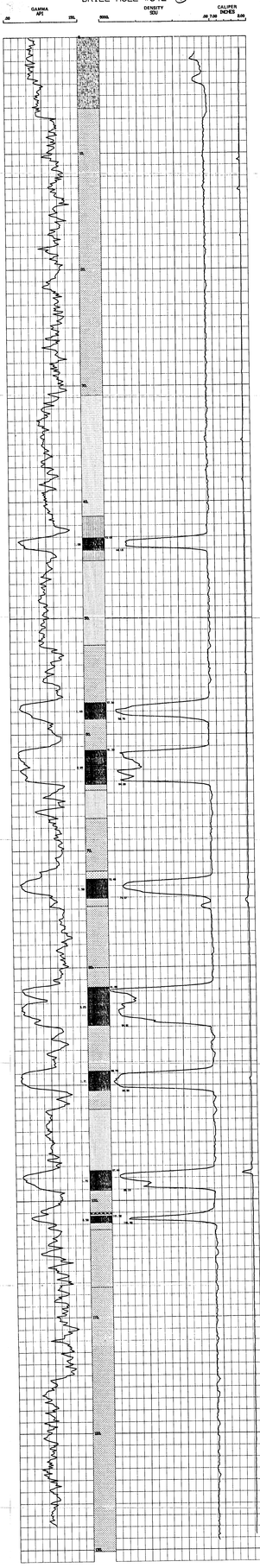
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

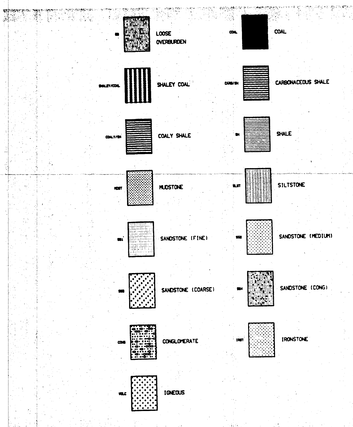
TK - TELKWA 83/3/9

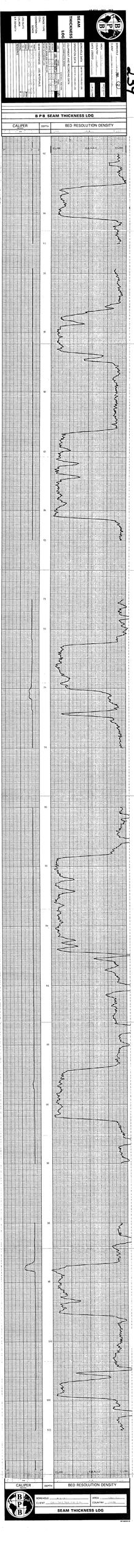
TELKWA PROJECT

239

DRILL HOLE #342 ①






B P B
SEAM THICKNESS LOG
B.P.B SEAM THICKNESS LOG
CALIPER
DEPTH
BED RESOLUTION DENSITY
SEAM THICKNESS LOG

239

BPB

COAL QUALITY LOG

COMPANY: BPB
WELL: 239
FIELD: Tenaga
COUNTY: Selangor
STATE: Malaysia
COUNTRY: Malaysia

DATE: 1-3-1991
RUN NO.: 1
DEPTH DRILLER: 1.00
DEPTH LOGGER: 1.00
BOTTOM LOG INTERVAL: 1.00
TOP LOG INTERVAL: 0.00
CASING DRILLER: 0.00
CASING LOGGER: 0.00
BIT SIZE: 0.00
TYPE FLUID IN HOLE: Air
DENSITY: 0.00
VISCOSITY: 0.00
PH: 0.00
FLUID LOSS: 0.00
SOURCE OF SAMPLE: Air
RM @ MEAS. TEMP.: 0.00 @ 0.00
RMF @ MEAS. TEMP.: 0.00 @ 0.00
RMC @ MEAS. TEMP.: 0.00 @ 0.00
SOURCE RMF: Air
SOURCE RMC: Air
RM @ BHT: 0.00 @ 0.00
TIME CIRC. STOPPED: 0.00
TIME LOGGER ON BOTTOM: 0.00
MAX. RECORDED TEMP.: 0.00
EQUIPMENT NO.: 0.00
LOCATION: 0.00
RECORDED BY: 0.00
WITNESSED BY: 0.00

COMPANY AND RECORDING DATA

BPB COAL QUALITY LOG

DEPTH

COAL BULK DENSITY
g/cc

HOLE SIZE CORRECTION DATA

| | | |

BPB

Gamma Ray Neutron Density Porosity Log

BOREHOLE: 36" 36" 4"
CLIENT: Shell Petroleum Co. of Canada Ltd.

AREA: Sable Island
COUNTRY: Canada
DATE LOGGED: 1/11/82

PERMANENT DATA
Elevation: 0.0 m/0.0 m
TEMPORARY DATA
Elevation: 0.0 m/0.0 m

EQUIPMENT AND RECORDING DATA

Logging Speed	30 m/hr		
Time Constant	1 sec		
Sensitivity	2 mV		
Recorder Scale	5 cm/100 m		
Density Source	Cs 137		
Density Detector	Geiger Muller		
Neutron Source	Am Be		
Neutron Detector	Geiger Muller		
Hole Fluid	Seawater		
Hole Condition	Good		
Casing Size	30"		
Casing Weight	310 kg/m		
Casing Shoe	1.5 m		
Casing Fluid	Seawater		
Casing Condition	Good		

REMARKS

239

Gamma Ray | DEPTH | Neutron/Density Porosity

0 | 5 | 10 | 15 | 20

SANDSTONE POROSITY

0 50% 42% 30% 25% 20% 15% 600

4" 6" 8"

MV (ST ADDED)

Gamma Ray | DEPTH | Neutron/Density Porosity

0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 127 | 120 | 127

Gamma Ray | DEPTH | Neutron/Density Porosity

BPB

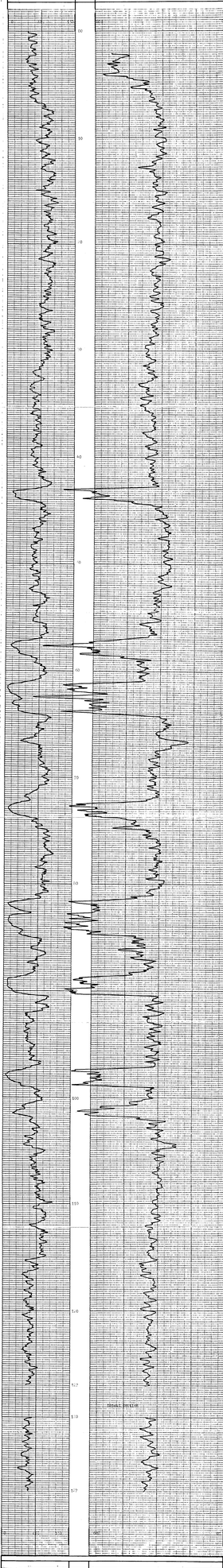
BOREHOLE: 36" 36" 4"
CLIENT: Shell Petroleum Co. of Canada Ltd.
AREA: Sable Island
COUNTRY: Canada

239

BPB

BOREHOLE
CLIENT
AREA
COUNTRY
DATE
RUN NUMBER
DATE
TIME
BOREHOLE DATA
OPERATOR DATA
EQUIPMENT AND RECORDING DATA
REMARKS

DEPTH



DEPTH

BPB

BOREHOLE
CLIENT
AREA
COUNTRY

239

MULTI-CHANNEL SONIC LOG

BP

WELL NO. 3BL (b)
CLIENT
COUNTRY
DATE LOGGED
WELL
AREA
DATE

OPERATION DATA	
DATE	
RIG	
DRILLER	
LOGGER	
RUN NO.	
DRILLING FLUID	
FLUID LEVEL	
RECORDED BY	
WITNESSED BY	

BOREHOLE DATA		
BOREHOLE DIAMETER		
CASING DIAMETER		
CASING DEPTH		
BOREHOLE DEPTH		
MAX. DEVIATION		
MAX. TEMPERATURE		
	DRILLER	LOGGER

EQUIPMENT AND RECORDING DATA

SONDE No. _____ CENTRALISERS SET TO _____ DIAMETER

	TRANSDUCER ARRANGEMENT			CENTRALISERS LOGGING		CENTRALISERS LOGGING		DATA RECORDED		DATA DISPLAYED	
	TRANSMITTER	RECEIVER	SPACING	SPACING (")	NECK	SPACING (")	NECK TYPE	(")	SPACING	TYPE	(") SPACING
CHANNEL 1	R1 - R2		8"								
CHANNEL 2	R2 - R3		12"								
CHANNEL 3	R1 - R3		20"								
CHANNEL 4	R3 - R4		12"								

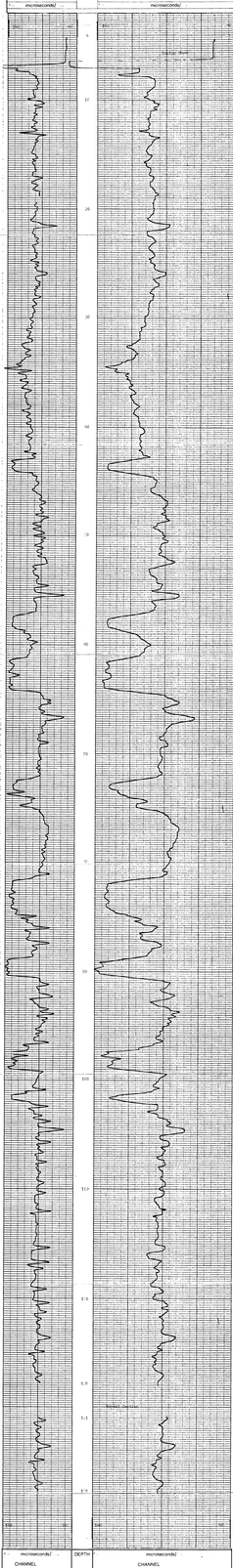
RETRIEVE CHANGES DESCRIBE WHERE USED, RELEVANT LOGS

FROM: _____ INTERNAL TOTAL
TO: _____
INTERVAL: _____

TOP OF SONDE

REMARKS

CHANNEL 1	DEPTH	CHANNEL 2
INTERNAL TRANSIT TIME		INTERNAL TRANSIT TIME
PHOTOMICRONS/		PHOTOMICRONS/



microseconds/	DEPTH	microseconds/
CHANNEL		CHANNEL

BP

BOREHOLE _____ AREA _____
CLIENT _____ COUNTRY _____

MC SONIC LOG

TK-Telkwa 83GA

239

DIPMETER ANALYSIS

CLIENT ___ CROWS NEST RESOURCES
BOREHOLE ___ TW 83D-342 (7)
AREA ___ TELKWA, B.C.
COUNTRY ___ CANADA

DATE LOGGED.....26-JUL-83
DATE PROCESSED..29-JUL-83

COMMENTS.....

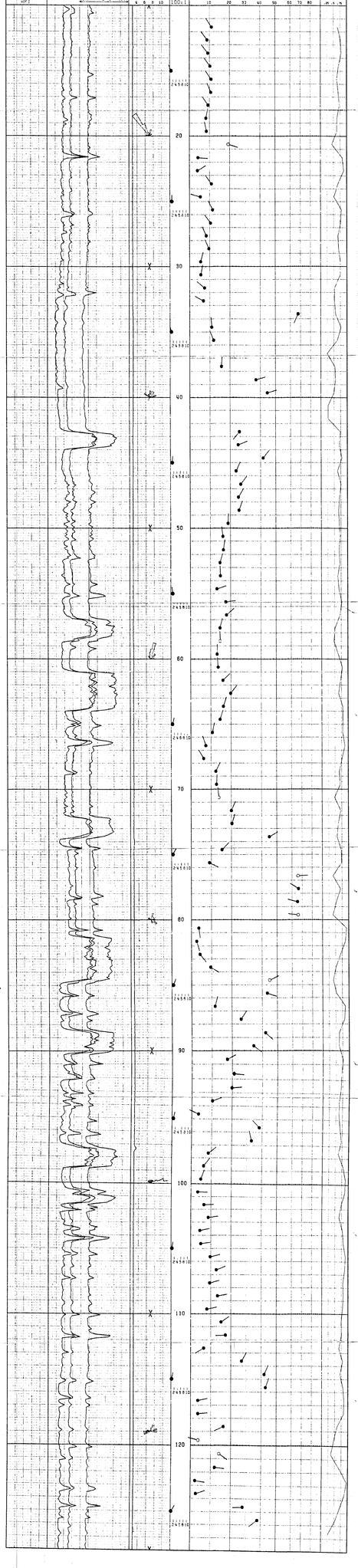
INTERPRETATION PARAMETERS

STEP 1.00M.
INTERVAL 2.00M.
SEARCH ANGLE 30.
DECLINATION 26.0 EAST
DEPTH RANGE 10.00 - 128.00M.
DATE PROCESSED 29-JUL-83

AVERAGE BOREHOLE DEVIATION & DIRECTION ANNOTATED EVERY 10.0M.

MAXIMUM DIPS ANNOTATED EVERY 10M DEGREES.
.1" ANGLES PEN DIP MARKER DISPLAYED

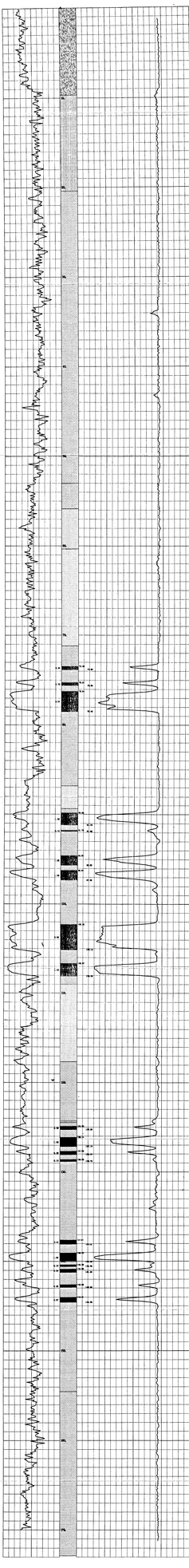
LEGEND:
GOOD (+0.5)
FAIR (+0.3)

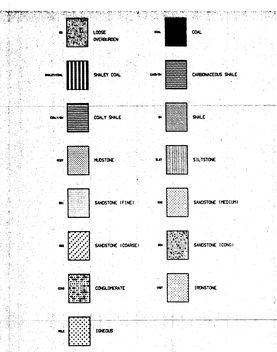


TK - TELKWA 83/3A

TELKWA PROJECT

DRILL HOLE #343 ① 239





BOREHOLE
CLIENT
AREA
COUNTRY
DATE LOGGED
BOREHOLE DATA
FIELD DATA
OPERATION DATA

239

EQUIPMENT AND RECORDING DATA

LOG	EQUIPMENT			CAPACITY		PANEL		LOG	DEPTHS	
	SONDE	SOURCE	CALIBRATOR	LOG	CALIBRATOR	CHANNEL	SCALE	NUMBER	FROM	TO

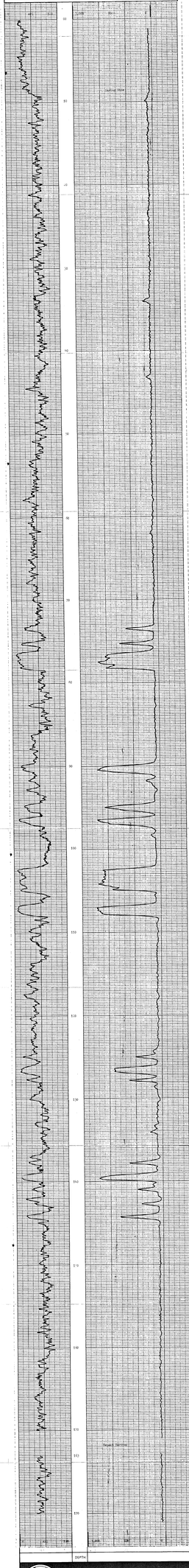
ADDITIONAL SONDES RUN

SONDE	LOG	DEPTHS	
		DETAIL	CONDITIONS

REFER TO ADDITIONAL HEADINGS

REMARKS

DEPTH



DEPTH

BOREHOLE
CLIENT
AREA
COUNTRY

BPB INSTRUMENTS (UK) LTD.

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

SEAM THICKNESS LOG

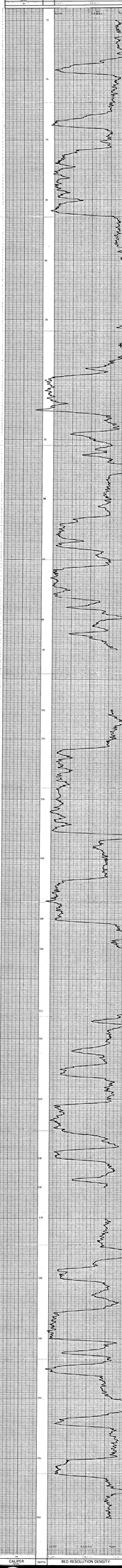
B.P.B. INSTRUMENTS (UK) LTD.
CHESTERFIELD ROAD, SHEFFIELD, ENGLAND
TELEPHONE: SHEFFIELD (0742) 441144
TELEX: 547216 BPB SHF G
CABLES: BPBINSTRUM SHEFFIELD

Field Prints on 6.12.74

239

B.P.B. SEAM THICKNESS LOG

CALIPER	DEPTH	BED RESOLUTION DENSITY
6"		2.0 g/cc — 3.0 g/cc



239

BPB

COAL QUALITY LOG

BOREHOLE: 02

AREA: Ordos Basin

COUNTRY: China

DATE: 1987

Coal Seam Density

Coal Seam Density

Coal Seam Density

239

BPB

Gamma Ray Sonic Run 1 (Through Casing)

BOREHOLE: SEC-181 (5)
CLIENT: Canada Basin Resources Ltd.

AREA: Chinchaga
COUNTRY: Canada

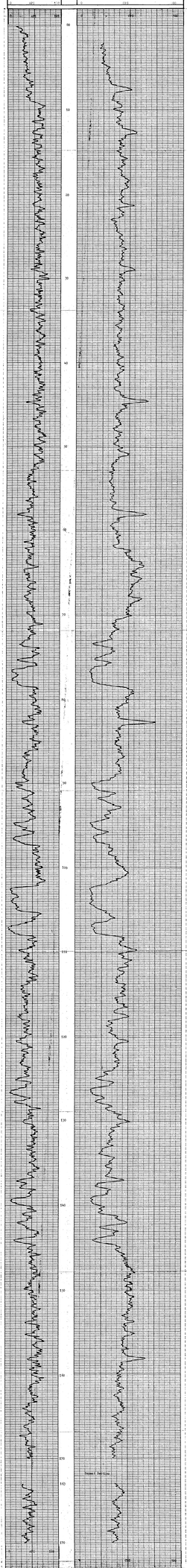
BOREHOLE DATA: Depth 0.0-1100 m
DATE: 06/09/1988

Equipment and Recording Data

Logging Unit	Sonic
Logging Speed	1.5 m/min
Time Constant	0.1 sec
Sensitivity	1
Gain	1
Sonic Spacing	1.0 m
Sonic Frequency	20 kHz
Sonic Power	1
Sonic Gain	1
Sonic Threshold	1

Gamma Ray | DEPTH | Sonic Arrival/Peak Arrival

0 API 150 | 0 | 200 μs 100



Gamma Ray | DEPTH | Sonic Arrival/Peak Arrival

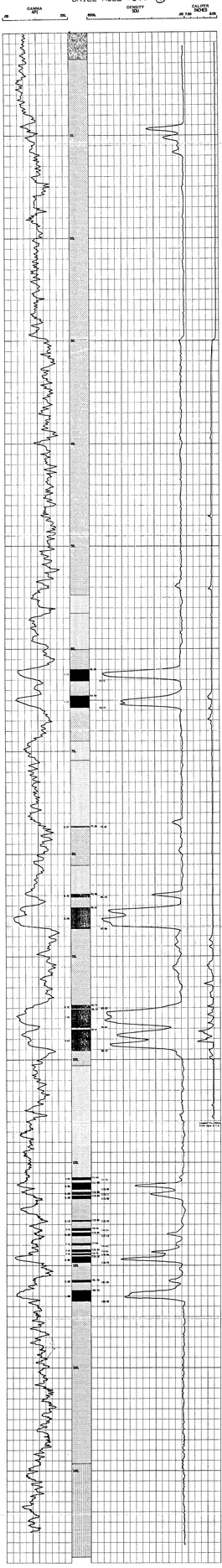
BPB

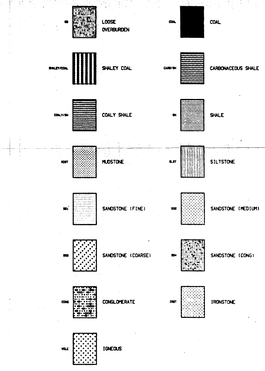
BOREHOLE: SEC-181 | AREA: Chinchaga
CLIENT: Canada Basin Resources Ltd. | COUNTRY: Canada

TK - Telkwa 83/3/4

TELKWA PROJECT 239

DRILL HOLE #344 (1)





239

BPB	
SEAM THICKNESS LOG	
BORE HOLE DATA	
DATE	
TIME	
DRILLER	
LOGGER	
BOTTOM DRILLER	
TOP 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 CIRCULATION	
MAX. REC. TEMP.	
EQUIP. LOCATION	
RECORDED BY	
WITNESSED BY	
CASING DATA	
TYPE	
WEIGHT	
DEPTH	
BIT SIZE	
TOP LOGGED INTERVAL	
TOP CASING	
CASING COLLAR LOCATION	
CASING PRESSURE	
CASING CALIPER	
CASING CORRECTION	
REMARKS	
TOOL TYPE AND SERIAL NO.	
DENSITY	
CALIPER	
DIFFERENTIAL TEMPERATURE	
TOOL POSITION	
DIFFERENTIAL PRESSURE	
TOOL STANDOFF	
TOOL SPEED	
TIME CONSTANT	
RECORDED	
DATE	
RUN NO.	
TIME	
DEPTH	
SCALE	
CALIPER	
DENSITY

239

BPB

COAL QUALITY LOG

BOREHOLE: [illegible] | AREA: [illegible]
CLIENT: [illegible] | COUNTRY: [illegible]
DATE: [illegible] | RUN NO: [illegible]

BOREHOLE DATA | RUN NO. | DATE
OPERATOR DATA | RUN NO. | DATE
EQUIPMENT AND RECORDING DATA
HOLE SIZE CORRECTION DATA

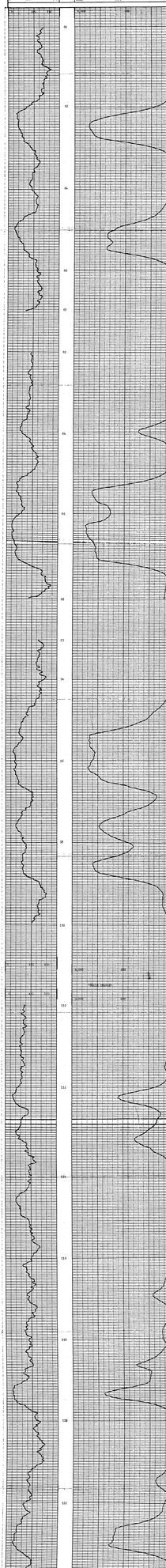
BPB COAL QUALITY LOG

Scale No:

DEPTH

COAL BULK DENSITY

HOLE SIZE CORRECTION DATA



DEPTH

COAL BULK DENSITY

BPB

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

COAL QUALITY LOG

239

Santa Fe 9 Sectron/Sectron Corp.

BOREHOLE 9-SF-54 (4)

CLIENT Crown Sent Resources Ltd.

AREA Santa Fe 9

COUNTRY Canada

DATE LOGGED 20/7/83

BOREHOLE DATA MAX TEMP 150 DEG C

OPERATION DATA MAX TEMP 150 DEG C

EQUIPMENT AND RECORDING DATA

TK - Teluma 83/3A

239

BP

BOREHOLE 36 (5)

CLIENT

AREA

COUNTRY

DATE LOGGED

DEPTH SCALE

BOREHOLE DATA REFER TO

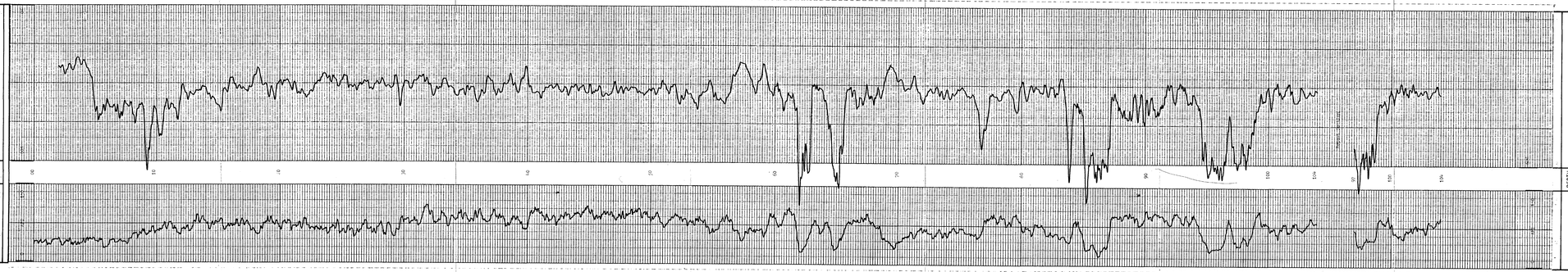
OPERATION DATA REFER TO

EQUIPMENT AND RECORDING DATA

LOG	SPANS		PANEL	
	LOW	HIGH	SPEED	MEMORY	SPEED	MEMORY	NO.	NOTE

REMARKS

DEPTH



DEPTH

AREA

COUNTRY

BOREHOLE

CLIENT

BP

BPB

Sidewall Neutron Porosity

BOREHOLE 239 (5)

CLIENT

AREA

COUNTRY

DATE LOGGED

RUN NO. 1

DEPTH DRILLER 1500

DEPTH LOGGER 1500

BOTTOM LOG INTERVAL 1500

TOP LOG INTERVAL 100

CASING DRILLER 9 5/8 @ 100

CASING LOGGER

BIT SIZE 8 1/2

TYPE FLUID WBM

DENSITY 1.10

VISCOSITY 45

PH 10.5

FLUID LOSS 6.0

SOURCE RMF RMC

RM @ MEASURED TEMP. 0.600 @ 70

RMF @ MEASURED TEMP. 0.500 @ 70

RMC @ MEASURED TEMP. 0.700 @ 70

RM @ BHT 0.300 @ 150

TIME SINCE CIRCULATION 12 HRS

TIME SINCE STOP DRILLING 12 HRS

MAX. RECORDED TEMP. 150

EQUIPMENT NO. 1

LOCATION

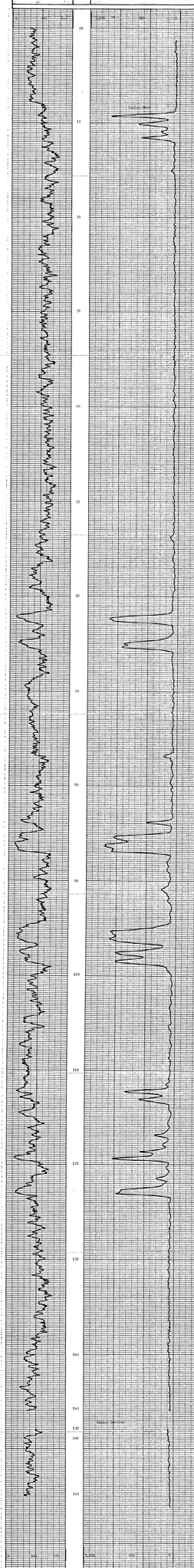
RECORDED BY

WITNESSED BY

239

TK-Tranum 83-02a

Series No.	DEPTH	Time Constant (seconds)
27		



Series No.	DEPTH	Time Constant (seconds)

BPB

BOREHOLE

CLIENT

AREA

COUNTRY

BP 1000000

239

1X - 18 Nov 81 5/5/8

BPB

GAMMA RAY & ELECTRICAL RESISTIVITY SONDE

Through Casing

BOREHOLE: GC2-3B (2)

CLIENT: Green Bay Resources Ltd.

AREA: Tulsa Area

COUNTRY: Canada

DATE LOGGED: 1981-11-18

RUN NO: 1

DRILLER'S DATA: Bottom: 1334.0m

Top: 0.0m

OPERATOR'S DATA: Bottom: 1334.0m

Top: 0.0m

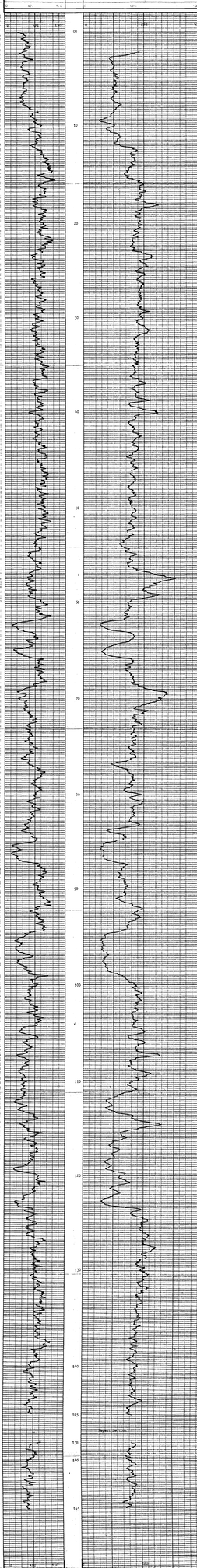
EQUIPMENT AND RECORDING DATA

SONDE NO.	1	SONDE TYPE	1
CABLE NO.	1	CABLE TYPE	1
CABLE LENGTH	1500		

CALIBRATION: Calibrated on Tulsa Area Calibration Pit on 1981-11-18 using Tulsa Area Calibration Pit Data

Gamma Ray | DEPTH | Resistivity/Temp

0 | 50 | 100 | 0 | 100 | 200



Gamma Ray | DEPTH | Resistivity/Temp

BPB

BOREHOLE: GC2-3B

CLIENT: Green Bay Resources Ltd.

AREA: Tulsa Area

COUNTRY: Canada

Tic - Telkwa 83(3)k

239

DIPMETER ANALYSIS

CLIENT___ CRØWS NEST RESØURCES
BOREHOLE_ TW 83D-345 (1)
AREA_____ TELKWA, B.C.
COUNTRY__ CANADA

DATE LOGGED.....30-JUL-83
DATE PROCESSED..23-AUG-83

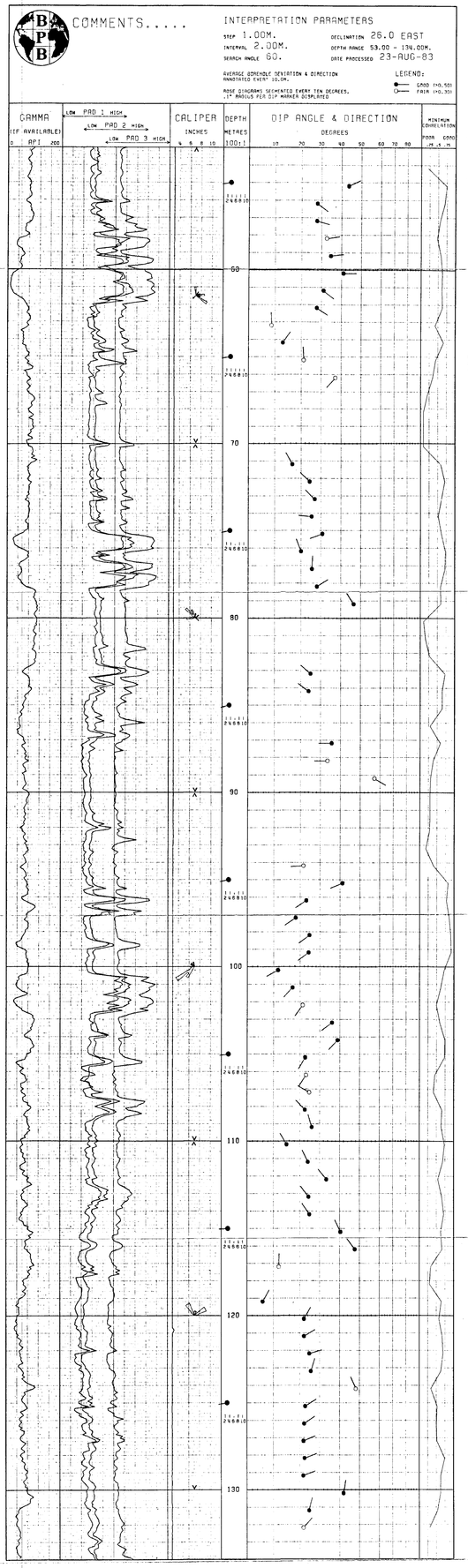
COMMENTS.....

INTERPRETATION PARAMETERS

STEP 1.00M. DECLINATION 26.0 EAST
INTERVAL 2.00M. DEPTH RANGE 53.00 - 134.00M.
SEARCH ANGLE 60. DATE PROCESSED 23-AUG-83

AVERAGE BOREHOLE DEVIATION & DIRECTION ANNOTATED EVERY 10.0M.
ROSE DIAGRAMS SEGMENTED EVERY TEN DEGREES.
.1" RADIUS PER DIP MARKER DISPLAYED

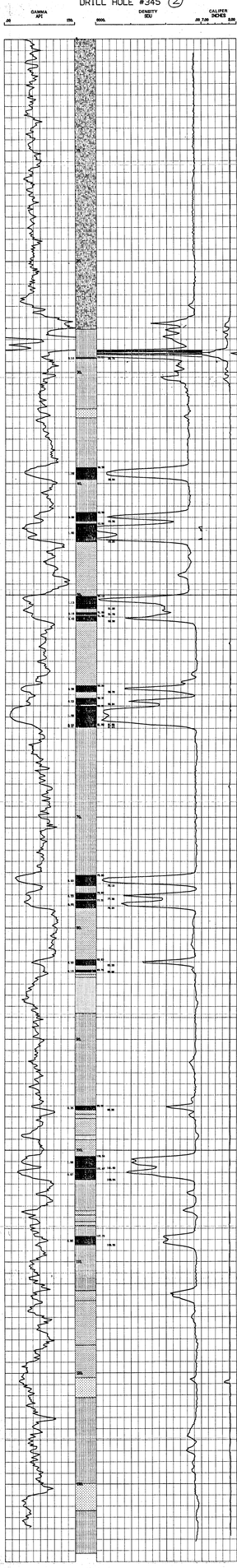
LEGEND:
GOOD (+0.50)
FAIR (+0.35)

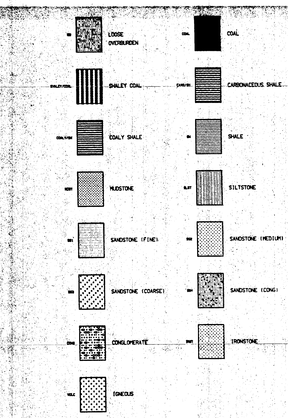


TK - TELKWA 83/3/4

TELKWA PROJECT 239

DRILL HOLE #345 (2)





TR. Tsum Bala

239

COMPANY	CANADIAN SUPERIOR OIL LTD.
WELL	TSUM BALA 2-10-87-17
FIELD	
COUNTY	
PROVINCE	
DATE LOGGED	

SEAM THICKNESS LOG

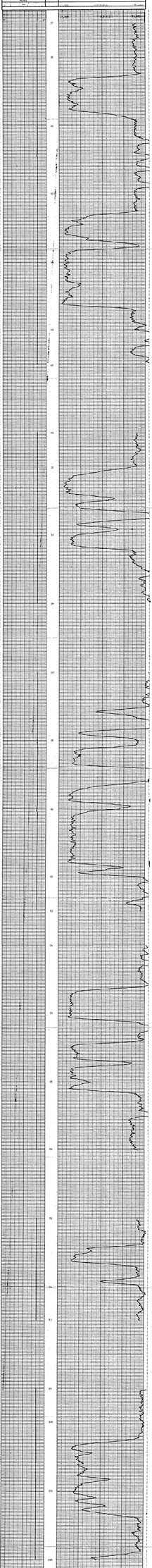
BOREHOLE LOG	BED RESOLUTION DENSITY
CASING LOG	BED RESOLUTION DENSITY

BOREHOLE CONDITIONS
CALIPER
SEAM THICKNESS - SEE REPORT
SEAM THICKNESS - SEE REPORT
SEAM THICKNESS - SEE REPORT

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

B P B SEAM THICKNESS LOG

CALIPER	DEPTH	BED RESOLUTION DENSITY
6 — 16 in.	1:240	1.9 — 3.0 g/cc



BPB	COAL QUALITY LOG
WELL NAME	
COMPANY	
COUNTY	
STATE	
DATE	
RUN NO.	
DENSITY CURVE	
DENSITY CALIBRATION	
HOLE SIZE CORRECTION DATA	
DENSITY CALIBRATION	
DENSITY CURVE	
RUN NO.	
DATE	
COMPANY	
WELL NAME	
BPB	COAL QUALITY LOG

BPB COAL QUALITY LOG

Gamma Ray	DEPTH
	COAL BULK DENSITY

HOLE SIZE CORRECTION DATA

| | | |

Tx-Texas 83Ga

239

Gamma Ray | DEPTH | 5m:1mm/5m:1mm

SANDSTONE POROSITY

Gamma Ray | DEPTH | 5m:1mm/5m:1mm

BOREHOLE 240/30-3G1

CLIENT Crown Tract Resources Ltd.

AREA Galveston B.C.

COUNTRY U.S.A.

BPB

239

BPB

BOREHOLE 315 (6)
CLIENT

AREA
COUNTRY
DATE LOGGED

SUPERVISOR
OP. NAME

BOREHOLE DATA BELOW KB
BOREHOLE DATA BELOW GL
OPERATION DATA BELOW KB
EQUIPMENT AND RECORDING DATA

SONDE			
CABLE			

RECORDED

REMARKS

DEPTH

00
10
20
30
40
50
60
70
80
90
100
110
120
130
132
137
140
150

DEPTH

BPB

BOREHOLE
CLIENT

AREA
COUNTRY

239

MULTI-CHANNEL SONIC LOG

BOREHOLE
CLIENT
AREA
COUNTRY
DATE LOGGED
BOREHOLE No.
LOG

BOREHOLE DATA

PERMANENT DATUM	
ELEVATION ABOVE P.D.	
BOREHOLE	
DRILLER	
TOTAL DEPTH	
DEPTH REACHED	
CASING SIZE	
CASING DEPTH	
MUD TYPE	
MUD LEVEL	
MUD VISCOSITY	
MUD PRESSURE	
MUD RESISTIVITY	
MUD TEMPERATURE	
MAXIMUM TEMPERATURE	
TIME SINCE CIRCULATION	
TIME SINCE PUMPS STOPPED	
TIME LOGGER ON BOTTOM	
MAXIMUM RECORDED TEMPERATURE	

FLUID DATA

WATER	
CLEAR	
VISCOSITY	
PH	
FLUID LEVEL	
FLUID RESISTIVITY	
FLUID TEMPERATURE	

OPERATION DATA

OPERATOR	
RIG	
RUN NO.	
LOGGED BY	
WITNESSED BY	
RECORDED BY	
CALIBRATION	
MATERIAL LOADED	
MC SONIC TRACE No.	
CALIBRATION No.	
WITNESS	

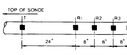
EQUIPMENT AND RECORDING DATA

SONDE No. CENTRALISERS SET TO DIAMETER

	TRANSDUCER ARRANGEMENT			GENERAL LOGGING		DETAIL LOGGING		DATA RECORDED			DATA DISPLAYED		
	RECEIVER PAIR	SPACING R1-R2	SPACING R2-R3	SPEED	°C SECS	SPEED	°C SECS	FROM	TO	INTERVAL	FROM	TO	INTERVAL
CHANNEL 1	R1 - R2	6"	24"										
CHANNEL 2	R2 - R4	18"	30"										
CHANNEL 3	R1 - R4	24"	24"										
CHANNEL 4	R3 - R4	6"	42"										

DETAIL ZONES DISPLAYED (SEE RELEVANT LOG)

FROM		INTERVAL TOTAL
TO		
INTERVAL		

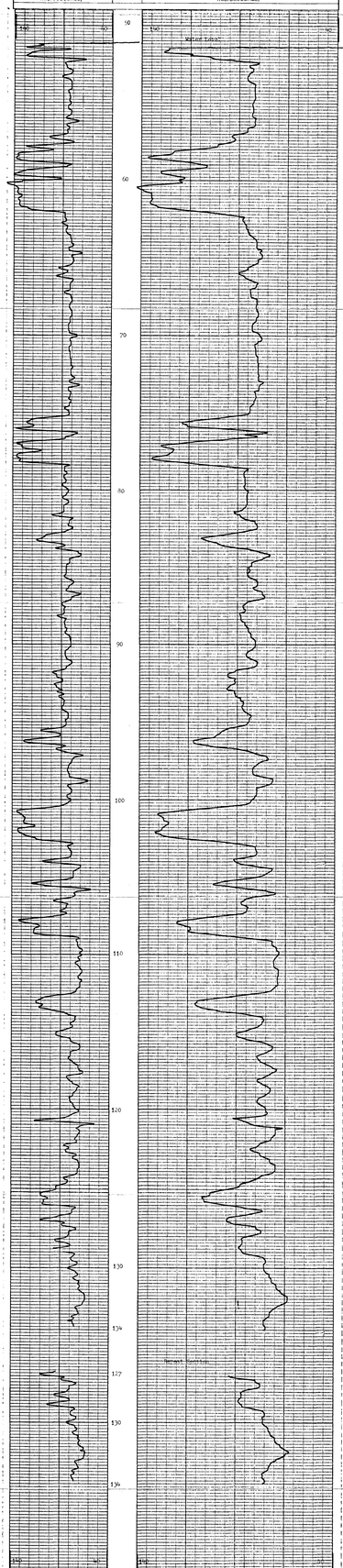


REMARKS

CHANNEL 1 — INTERVAL TRANSIT TIME microseconds/ft

DEPTH

CHANNEL 3 — INTERVAL TRANSIT TIME microseconds/ft



microseconds/ft — CHANNEL 1

DEPTH

microseconds/ft — CHANNEL 3

BOREHOLE
AREA
CLIENT
COUNTRY

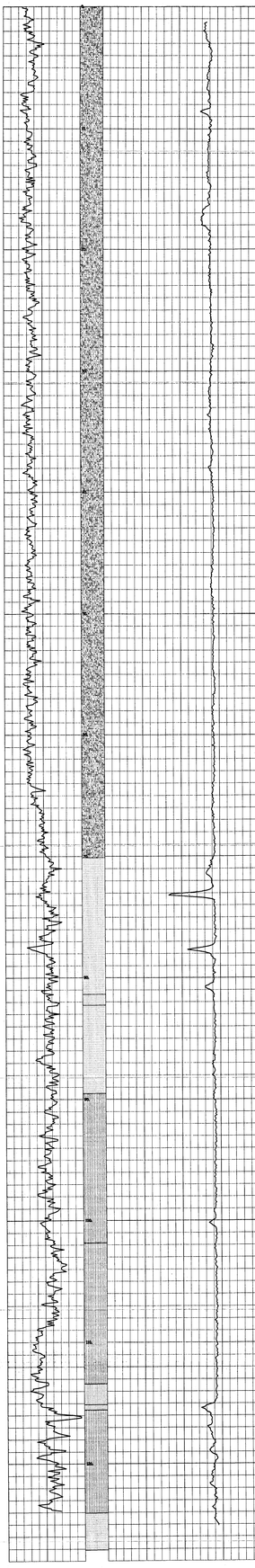
MC SONIC LOG

TK-Telkwa 83/84

TELKWA PROJECT

DRILL HOLE #346 ①

239



OB LOOSE OVERBURDEN

COAL COAL

SHALY COAL SHALY COAL

CARB SH CARBONACEOUS SHALE

COALY SH COALY SHALE

SH SHALE

MUDST MUDSTONE

SLST SILTSTONE

SS SANDSTONE (FINE)

MSS SANDSTONE (MEDIUM)

CSS SANDSTONE (COARSE)

SSC SANDSTONE (CONG)

CONG CONGLOMERATE

IRST IRONSTONE

VOLC VOLCANICS

239

TR-Trium 83-5A

BP

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

BOREHOLE DATA			
CASING			

TW83D-346 - BKD

239

JK - Telkwa 83D346

BOREHOLE TW83D-346 (3)
CLIENT Crows Nest Resources Ltd.

AREA Telkwa
COUNTRY Canada
DATE LOGGED 01/Aug/83

DEPTH SCALE 20:1

2 OF 4 LOGS

SEAM THICKNESS LOG

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

COAL COMBINATION SONDE — SIDEWALL POSITION

LOG	TAPING			PANEL		CAL COEFF
	LOG TAPED	RECORD SPEED	DIRECT or REPLAY	SPEED	TC SECS	NORM
CALIPER						
B R DENSITY	Y	2m/m	R	2m/m	.3	3.46

SOURCE SONDE AND CALIBRATION
REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG INTERVALS

FROM	79.0m
TO	72.0m
INTERVAL	7.0m
FROM	
TO	
INTERVAL	
INTERVAL TOTAL	7.0

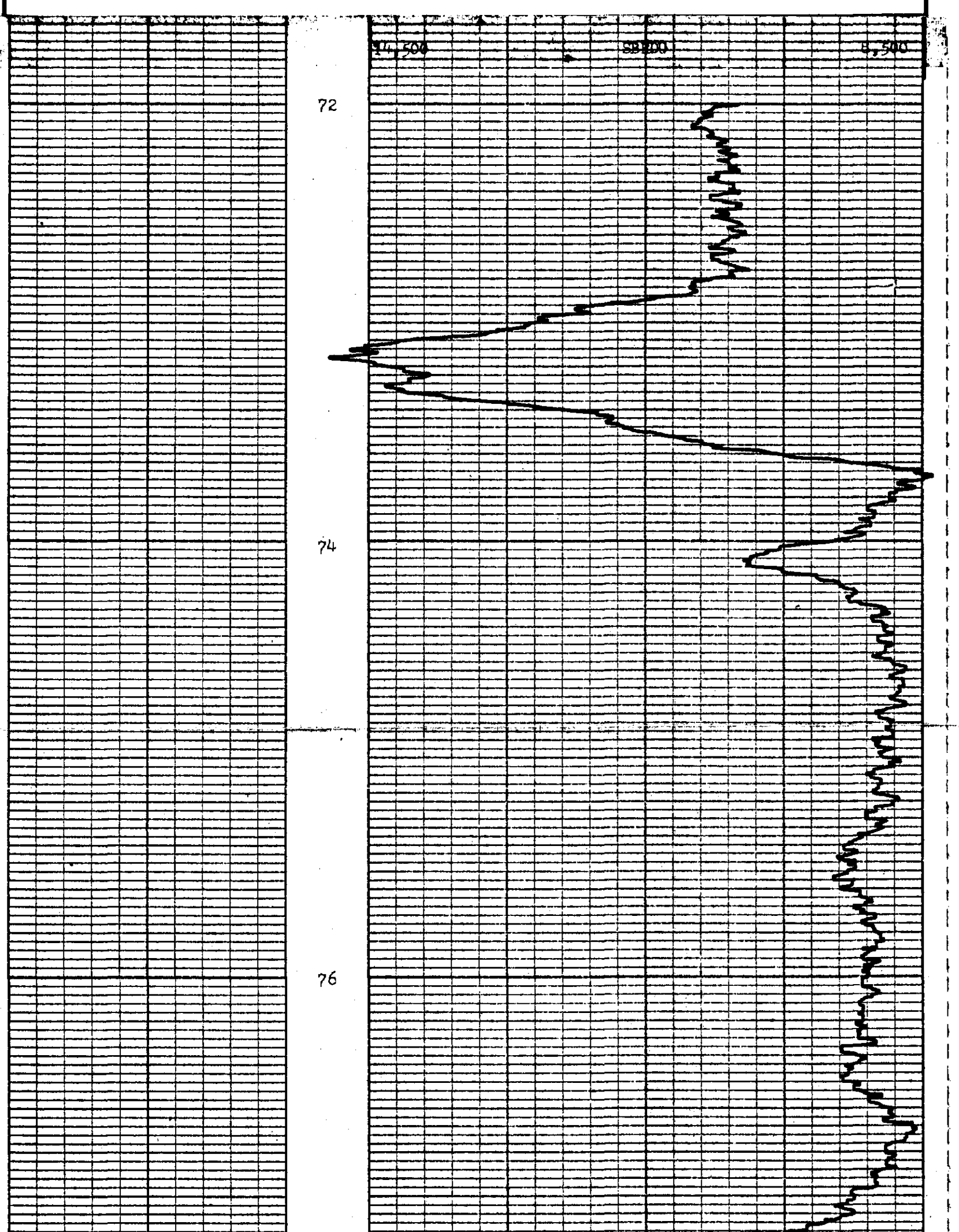
REMARKS
Please note unusual scales to compensate for drill rod effect.

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: CALIPER, B.R. DENSITY

B P B SEAM THICKNESS LOG

CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
" " " " " dia		14500 SBRDU 8500



CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
" " " " " dia		14500 SBRDU 8500

BOREHOLE TW83D-346
CLIENT Crows Nest Resources Ltd.
AREA Telkwa
COUNTRY Canada

SEAM THICKNESS LOG

MY 88002 R

TK - Telkwa 83(3)A

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BOREHOLE TWB3D-346 (4)
CLIENT Crown Nest Resources Ltd.

AREA Telkwa
COUNTRY Canada
DATE LOGGED 01/Aug/83

DEPTH SCALE 20:1

3 OF 4 LOGS

COAL QUALITY LOG

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

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

LOG	TAPING: LOG TAPED	TAPING: RECORDED SPEED	TAPING: DIRECT OR REPLAY	PANEL: SPEED	PANEL: T.C. SECS.	PANEL: NORM	CAL. LOWER
GAMMA RAY	Y	m/h	N	m/h	2		1.00
LS DENSITY	Y	m/h	N	m/h	1	1.00	

SIDEWALL POSITION

SOURCE SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: GAMMA RAY L.S. DENSITY

COAL QUALITY LOG INTERVALS

		INTERVAL TOTAL
FROM	79.0m	
TO	72.0m	
INTERVAL	7.0m	
FROM		
TO		
INTERVAL		

REMARKS

Please note unusuall scales to compensate for drill rod effect.

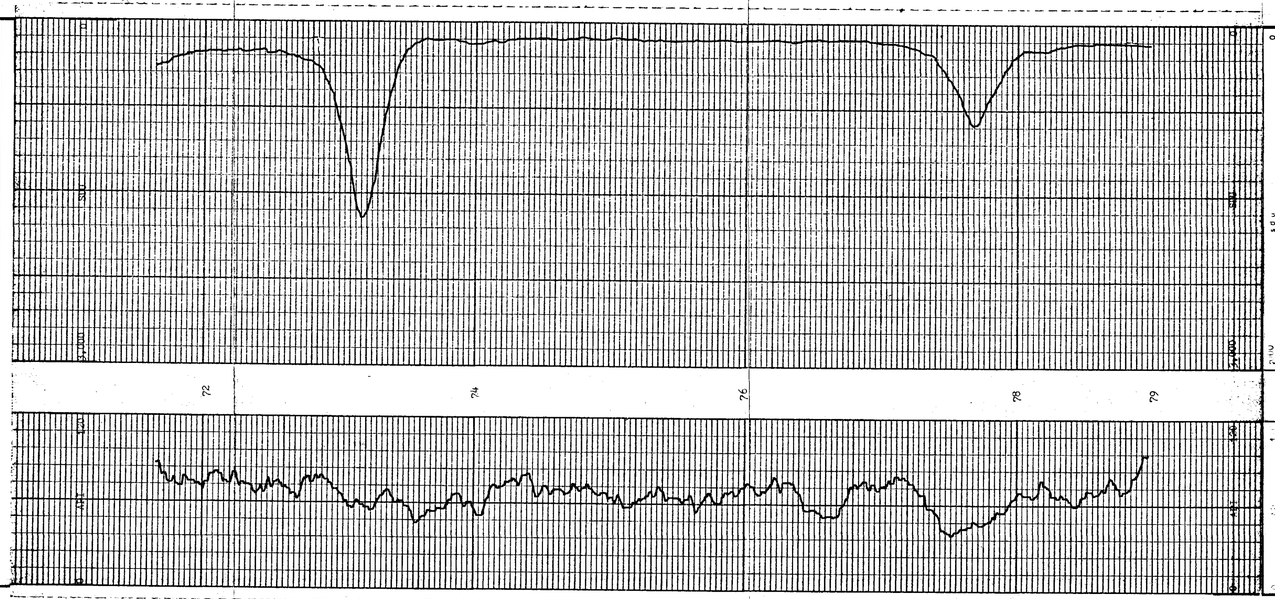
B P B COAL QUALITY LOG

DEPTH

Long Spaced Density

GAMMA RAY

HOLE SIZE CORRECTION DATA



BOREHOLE TWB3D-346
CLIENT Crown Nest Resources Ltd.
AREA Telkwa
COUNTRY Canada

COAL QUALITY LOG

MY 88002 R

239

Gamma Ray Neutron-Neutron Log
(Family Series)

BOREHOLE: 2W30-36 (5)
CLIENT: Conoco East Samarkan Ltd.

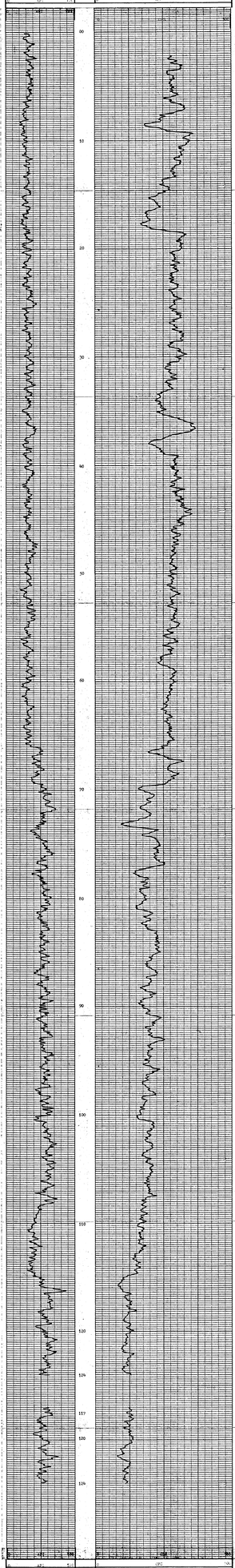
AREA: Taiken
COUNTRY: Cuba
DATE (DDMM): 30/04/75

BOREHOLE DATA: FROM: GR 0.00 TO:
OPERATION DATA: FROM: GR 0.00 TO:
EQUIPMENT AND RECORDING DATA

1000	Neutron-Neutron	
1000	Gamma Ray	

REMARKS
Gamma Ray calibrated against U.S. standard
API test pit, Houston, Texas.
Neutron-Neutron calibrated against Texas
Laboratory test pit, Houston, Texas.

Gamma Ray	DEPTH	Neutron-Neutron
0 (20) 100		0 (20) 100



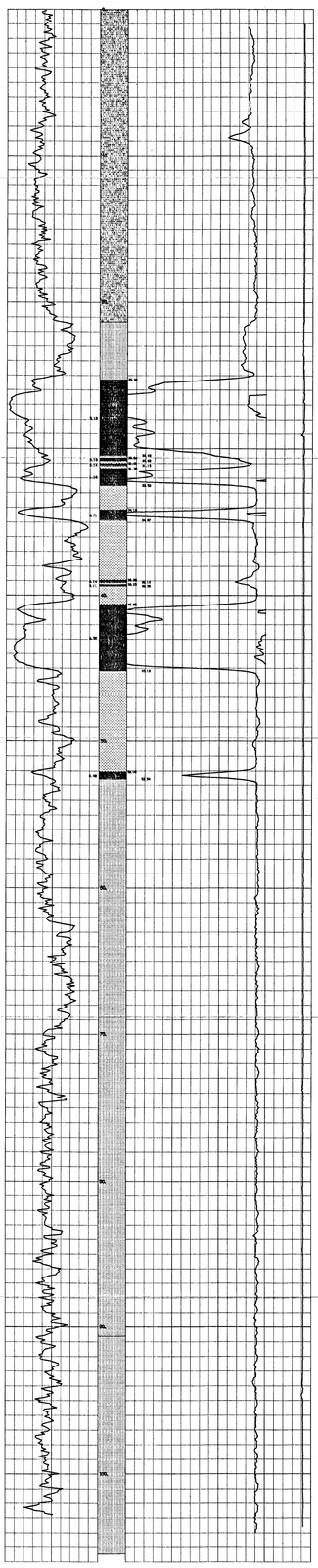
Gamma Ray	DEPTH	Neutron-Neutron
0 (20) 100		0 (20) 100

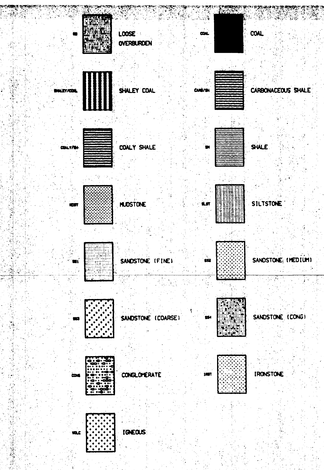
BOREHOLE: 2W30-36
CLIENT: Conoco East Samarkan Ltd.
AREA: Taiken
COUNTRY: Cuba

Tk-Telkwa 88/3/A

TELKWA PROJECT 239

DRILL HOLE #347 (1)





239

SEAM THICKNESS LOG

BPB

BOREHOLE
CLIENT
AREA
COUNTRY
DATE LOGGED

ORIGINAL DATA
DERIVATION DATA
COMMENT AND RECORDING DATA

SONDE TYPE
COAL DENSITY SONDE

DD DENSITY
CALIPER
BH DENSITY

SEAM THICKNESS LOG INTERVALS

239

BOREHOLE
CLIENT
COUNTRY
AREA
DATE LOGGED
BPB

COAL QUALITY LOG

OPERATOR DATA
EQUIPMENT AND RECORDING DATA

COAL QUALITY LOG INTERVALS

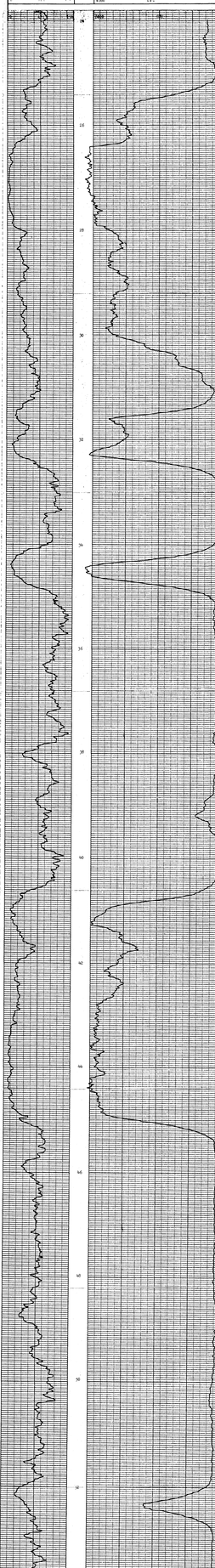
COAL QUALITY LOG

BPB COAL QUALITY LOG

DEPTH

COAL BULK DENSITY

HOLE SIZE CORRECTION DATA



COAL BULK DENSITY

DEPTH

BOREHOLE
CLIENT
AREA
COUNTRY

COAL QUALITY LOG

BPB

GAMMA RAY

SGC (NORTH SEC.)

BOREHOLE INP-2D-367

CLIENT CONOCO SUITE BERGEN ASA

AREA SIRSAK

COUNTRY SIRSAK

DATE LOGGED 27-7-1977

RUN 1

BOREHOLE DATA	MAXIMUM DEVIATION	1.00
OPERATION DATA	MAXIMUM DEVIATION	1.00
EQUIPMENT AND RECORDING DATA		

T.K. Tarlan 8/3/06

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BPB

BOREHOLE 3W (5)

CLIENT

AREA

COUNTRY

DATE LOGGED

BOREHOLE DATA

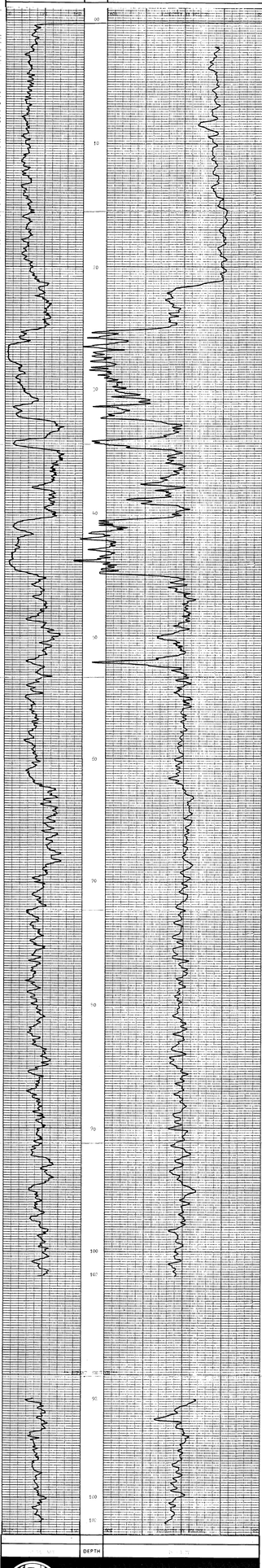
OPERATION DATA

EQUIPMENT AND RECORDING DATA

REMARKS

DEPTH

DENSITY



DEPTH

BPB

BOREHOLE

CLIENT

AREA

COUNTRY

239

MULTI-CHANNEL SONIC LOG

BP B

BOREHOLE
CLIENT 397 6

AREA
COUNTRY
DATE LOGGED

SERVICE NO.

BOREHOLE DATA	
TOWN/CITY OR OFFSHORE LOCATION	
COORDINATES	
DATUM	
GROUND LEVEL	
DRILLING MEASURED FROM	
TOTAL DEPTH	
CASING SIZE	
CASING WEIGHT	
CASING DEPTH	
LAST CASING SIZE	
LAST CASING DEPTH	
FLUID DATA	
FLUID LEVEL	
FLUID TYPE	
FLUID WEIGHT	
FLUID VISCOSITY	
FLUID PH	
FLUID RESISTIVITY	
OPERATOR DATA	
LOGGING ENGINEER	
OPERATING ENGINEER	
EXTERNAL LOGGER	
EXTERNAL LOGGER NUMBER	
CHARTS	

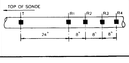
EQUIPMENT AND RECORDING DATA

SONDE No.

	TRANSDUCER ARRANGEMENT			CENTRALISERS SET TO						DIAMETER					
				GENERAL LOGGING			DETAIL LOGGING			DATA RECORDED			DATA DISPLAYED		
	RECEIVER PAIR	TRANSMITTER R-T	TRANSMITTER T-T	SPEED	TC SECS	SPEED	TC SECS	FROM	TO	INTERVAL	FROM	TO	INTERVAL
CHANNEL 1	R1 - R2	8"	24"										
CHANNEL 2	R2 - R4	16"	32"										
CHANNEL 3	R1 - R4	24"	24"										
CHANNEL 4	R2 - R4	40"	40"										

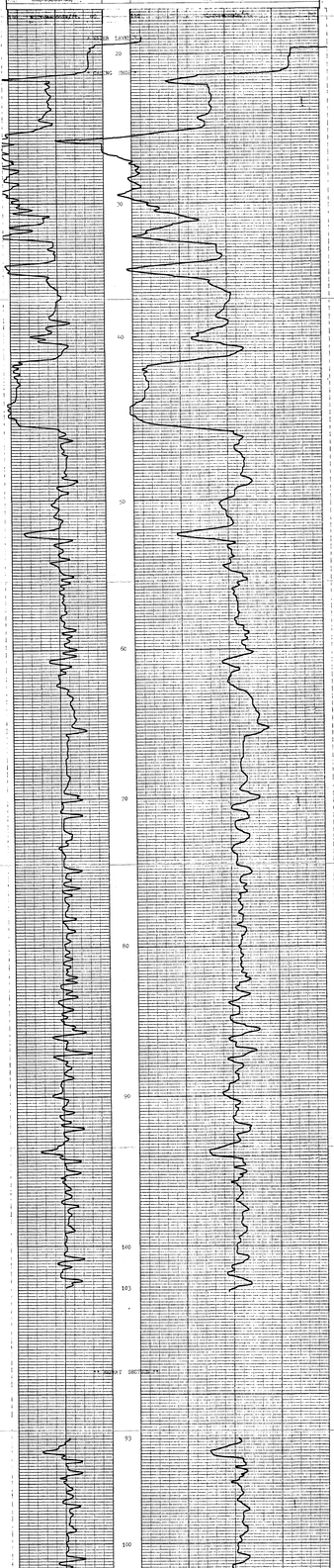
DETAIL ZONES DISPLAYED/USED RELEVANT LOG

FROM		INTERVAL TOTAL
TO		
INTERVAL		



REMARKS

CHANNEL	DEPTH	CHANNEL
INTERVAL TRANSIT TIME microseconds/		INTERVAL TRANSIT TIME microseconds/



microseconds/ CHANNEL	DEPTH	microseconds/ CHANNEL

BP B

BOREHOLE AREA
CLIENT COUNTRY

MC SONIC LOG

Tc - Telkwa 83/3A

TELKWA PROJECT

DRILL HOLE #348 ①

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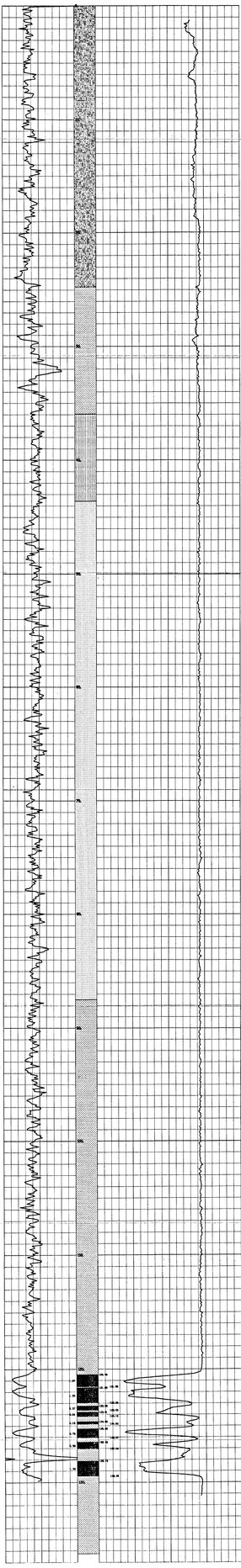

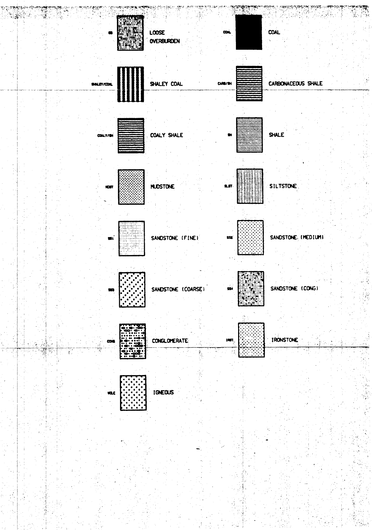

239

PROJECT	[illegible]
CLIENT	BP
AREA	[illegible]
COUNTRY	[illegible]
DATE LOGGED	[illegible]
BOREHOLE	[illegible]
DATUM	[illegible]
LOGGING DIST.	[illegible]

BOREHOLE DATA

DATUM	[illegible]
DATUM ELEVATION	[illegible]
LOG MEASURED FROM	[illegible]
DRILLER'S TD	[illegible]
LOGGER'S TD	[illegible]
CASING DIAMETER	[illegible]
CASING DEPTH	[illegible]
BIT SIZE	[illegible]
MUD TYPE	[illegible]
MUD DENSITY	[illegible]
MUD VISCOSITY	[illegible]
MUD PH	[illegible]
MUD RESISTIVITY	[illegible]
MUD RESISTIVITY TEMP.	[illegible]
MUD RESISTIVITY MEASURED

TK - Telkwa 83/3a

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BOREHOLE TW83D-348 (3)

CLIENT CROWS NEST RESOURCES LTD.

AREA TELKWA

COUNTRY CANADA

DATE LOGGED AUG. 3/83

DEPTH SCALE .011

__ OF __ LOGS

SEAM THICKNESS LOG

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

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

LOG	TAPING				PANEL			CAL COEFF
	LOG TAPED	RECORD SPEED	DIRECT REPLAY	SPEED	T.C. SECS	NORM		
CALIPER								
B.R. DENSITY	Y	-	X	C	.3	.10		

SIDEWALL POSITION

SOURCE SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG INTERVALS

FROM	1-Or
TO	11.2
INTERVAL	11
FROM	
TO	
INTERVAL	
INTERVAL TOTAL	*

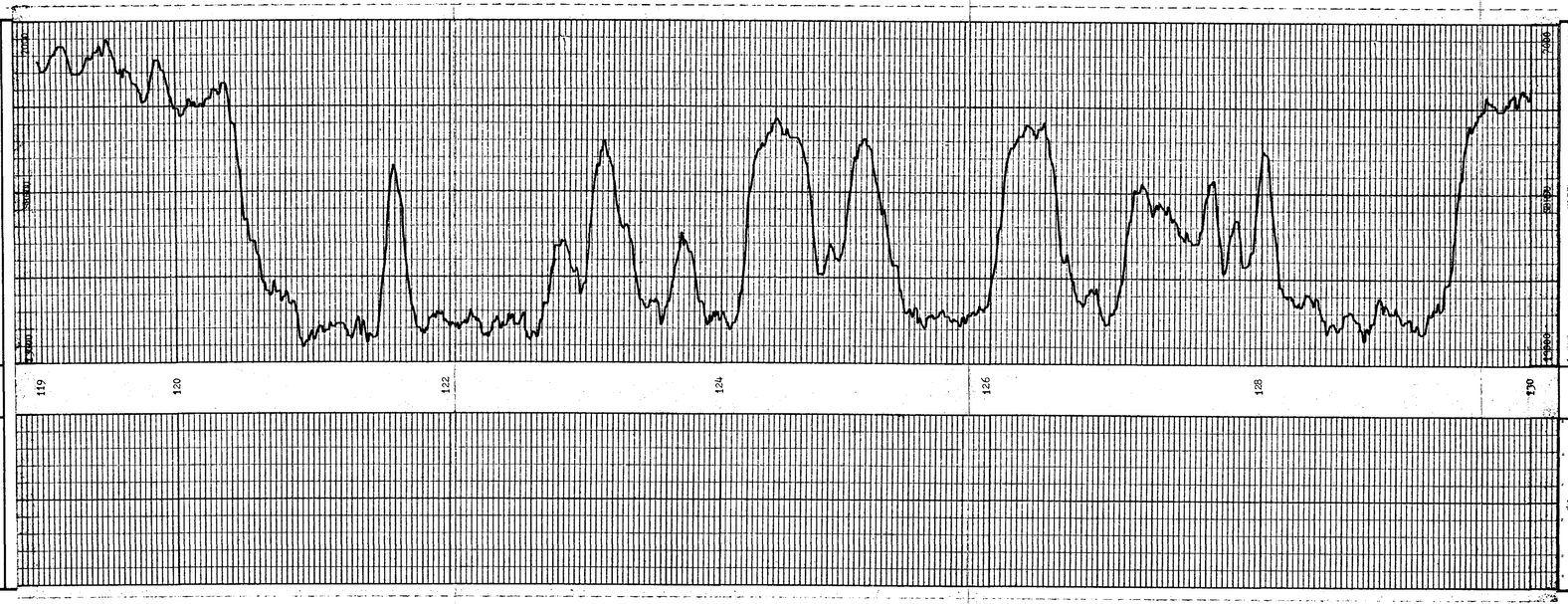
REMARKS

PLEASE NOTE UNUSUAL SCALES TO COMPENSATE FOR DRILL ROD EFFECT.

SONDE TYPE: COAL COMBINATION SONDE

LOG SUITE: CALIPER B.R. DENSITY

B P B SEAM THICKNESS LOG



BED RESOLUTION DENSITY

DEPTH

CALIPER INCHES

BOREHOLE TW83D-348

CLIENT CROWS NEST RESOURCES LTD.

AREA TELKWA

COUNTRY CANADA

SEAM THICKNESS LOG

MY 82003

TK - TELKWA 83(2)A

239

LM 83D-348 C93

BPB

BOREHOLE TK 83D-348 (4)

CLIENT CANADA WEST RESOURCES LTD.

AREA TELKWA

COUNTRY CANADA

DATE LOGGED AUG. 3/83

DEPTH SCALE 1:50

3 OF 4 LOGS

COAL QUALITY LOG

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

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

SIDEWALL POSITION

LOG	TAPING		PANEL			COAL CODE
	LOG TAPED	RECORDER SPEED	INSPECTOR REPLAY	SPEED	T.C. SECS	NORM	
GAMMA RAY	Y	2	R	1	1	1.0	
L.S DENSITY	Y	2	R	2	1.2	1.0	

SOURCE SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

COAL QUALITY LOG INTERVALS

FROM		
TO		
INTERVAL		
FROM	1.40m	INTERVAL TOTAL
TO	11.1m	
INTERVAL	11m	

REMARKS

PLEASE NOTE THE COAL COMES IN COMPRESSED FOR DEPTH AND SPEED.

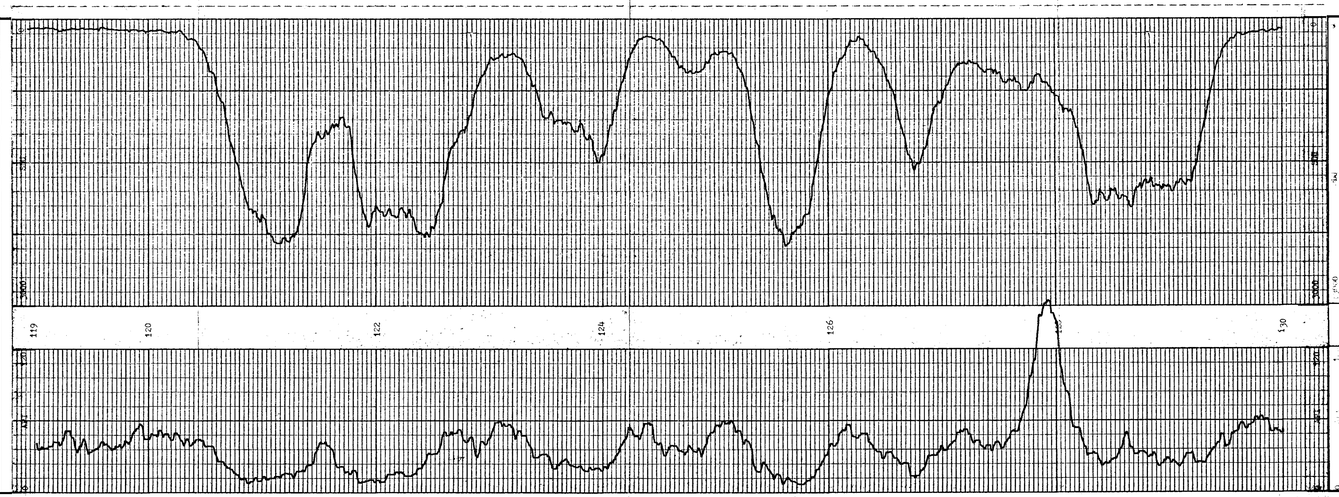
SONDE TYPE COAL COMBINATION SONDE

LOG SUITE GAMMA RAY L.S DENSITY

B P B COAL QUALITY LOG

DEPTH

HOLE SIZE CORRECTION DATA



BOREHOLE TK 83D-348

CLIENT CANADA WEST RESOURCES LTD.

AREA TELKWA

COUNTRY CANADA

COAL QUALITY LOG

BPB

MT 88007 8

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BP

BOREHOLE 74H-2-20
CLIENT CROWS NEST RESOURCES LTD.
AREA TEIGAN
COUNTRY CANADA
DATE 1-12-83
RUN 1
DEPTH 129.5
BOREHOLE FLUID WATER
MAX. TEMP. 25°C
MAX. PRESSURE 1000 PSI
DEPTH 129.5
DEPTH 129.5
DEPTH 129.5

T.C. Telkwa 83Gh

TELKWA PROJECT

DRILL HOLE #349 (1)

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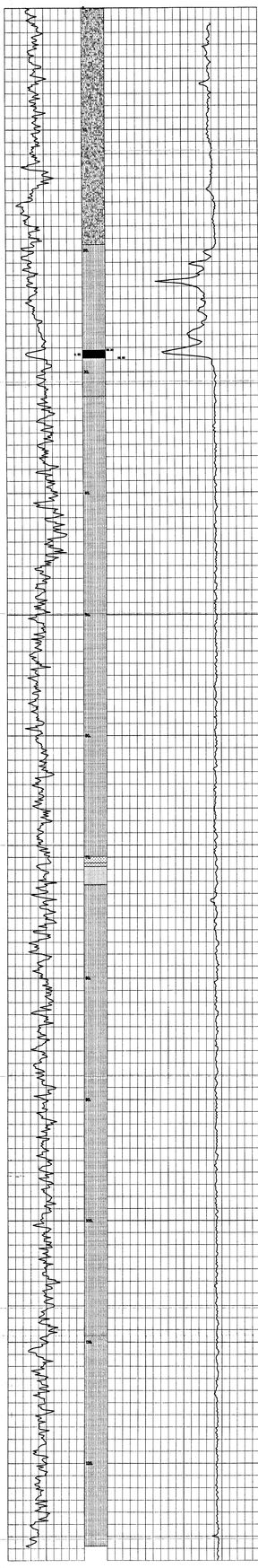

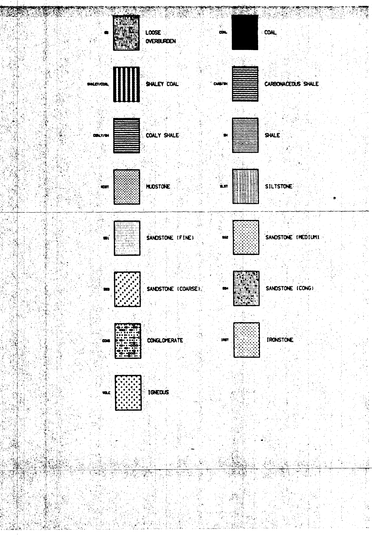

239

BOREHOLE	[illegible]
CLIENT	BP
AREA	[illegible]
COUNTRY	[illegible]
DATE LOGGED	[illegible]
BOREHOLE DATA	
DATUM	[illegible]
DATUM ELEVATION	[illegible]
DRILLER'S DEPTH	[illegible]
LOGGER'S DEPTH	[illegible]
CASING DRILLER	[illegible]
CASING LOGGER	[illegible]
BIT SIZE	[illegible]
FLUID DATA	
FLUID TYPE	[illegible]
DENSITY	[illegible]
PH	[illegible]
FLUID LEVEL	[illegible]
MAX. RECORDED TEMP.	[illegible]
ESTIMATED BHT	[illegible]
TIME SINCE CIRC.	[illegible]
TIME SINCE SHUT-IN	[illegible]
OPERATION DATA	
RIG NAME	[illegible]
RECORDED BY	[illegible]
WITNESSED BY	[illegible]

EQUIPMENT AND RECORDING DATA

TOOL	EQUIPMENT			CAPTAN		PANEL		TOOL	DEPTHS		
	SONDE	SOURCE	CALIBRATOR	TOOL RECORDING SPEED	PANEL RECORDING SPEED	PANEL	SERIAL NO.		FROM	TO	METRES
[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 SONDES RUN

SONDE	LOG	CENTRAL SCALE	25 MM SCALE/RESOLUTION
[illegible]	[illegible]	[illegible]	[illegible]

REFER TO ADDITIONAL HEADINGS

REMARKS

[illegible]

DEPTH

[illegible]

[illegible]

[illegible]

[illegible]

DEPTH

[illegible]

BOREHOLE	[illegible]
CLIENT	[illegible]
AREA	[illegible]
COUNTRY	[illegible]

TK - TELKWA 83L3A

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BPB

BOREHOLE TW83D-349 (3)

CLIENT CROWS NEST RESOURCES

AREA TELKWA

COUNTRY CANADA

DATE LOGGED AUG. 4/83

DEPTH SCALE 20:1

2 OF 4 LOGS

SEAM THICKNESS LOG

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

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

SIDEWALL POSITION

LOG	TAPING			PANEL			CAL COEFF.
	LOG TAPED	RECORD SPEED	DIRECT OF REPLAY	SPEED	T.C. SECS	NORM	
CALIPER	Y	2	R	2	.3		
B.R. DENSITY	Y	2	R	2	.3	R.14	

SOURCE SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG INTERVALS

FROM		
TO		
INTERVAL		
FROM	21m	INTERVAL TOTAL
TO	26m	
INTERVAL	5m	m

REMARKS

NOTE UNUSUAL SCALE TO COMPENSATE FOR DRILL ROD EFFECT.

SONDE TYPE: COAL COMBINATION SONDE

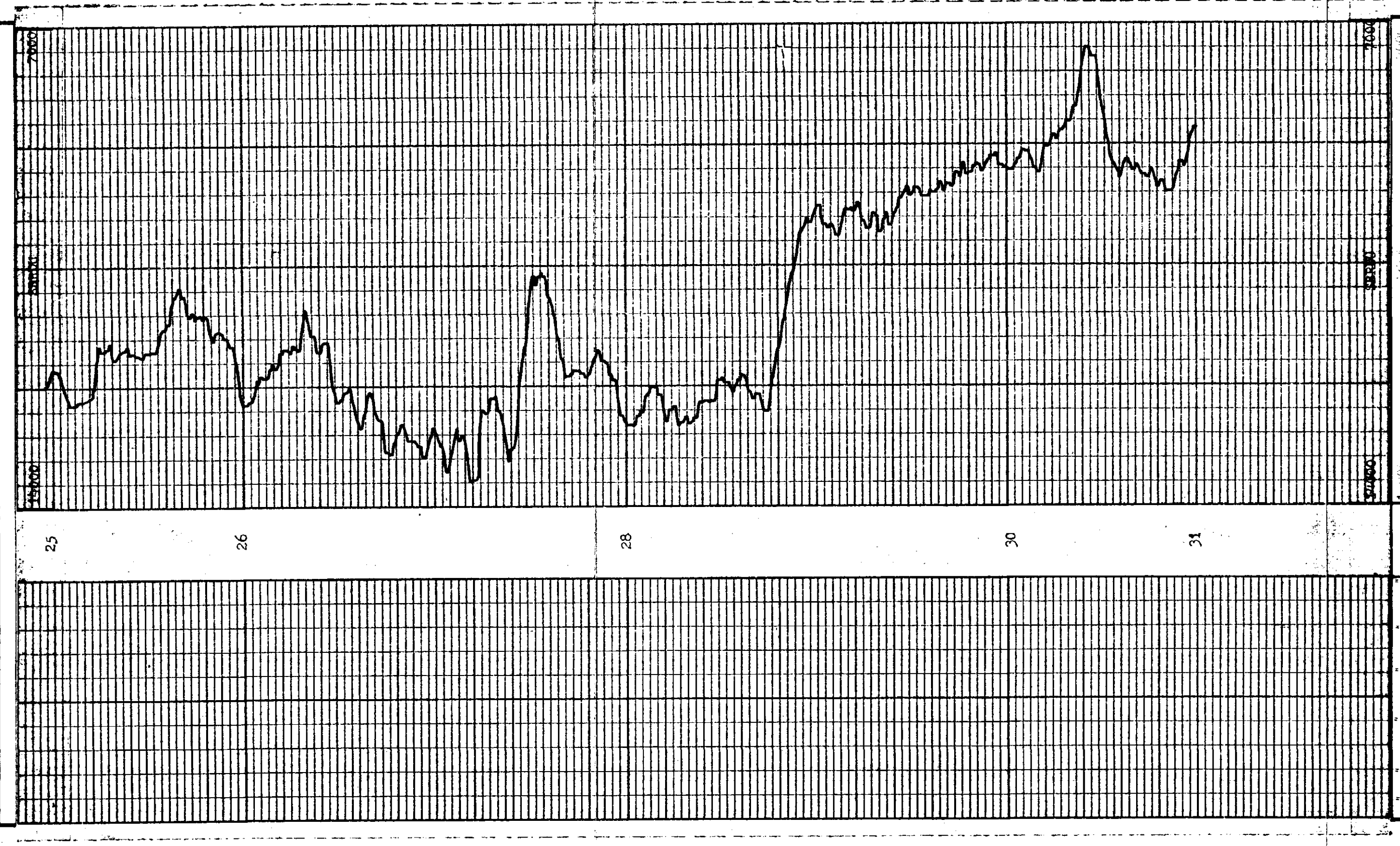
LOG SUITE: CALIPER B.R. DENSITY

B P B SEAM THICKNESS LOG

BED RESOLUTION DENSITY

DEPTH

CALIPER INCHES



BED RESOLUTION DENSITY

DEPTH

CALIPER INCHES

BOREHOLE TW83D-349

CLIENT CROWS NEST RESOURCES LTD.

AREA TELKWA

COUNTRY CANADA

SEAM THICKNESS LOG

BPB

239

TK-Tarum 82/GA

BPB

BOREHOLE GEOLOGIST MR
CLIENT CROW NEST PASS WRG LTD
RECORDING NO. 4

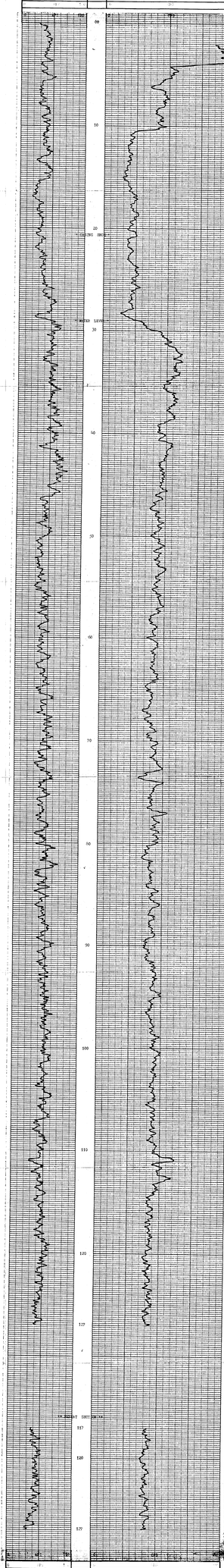
AREA TOLAN
COUNTRY CANADA
DATE LOGGED 1-Nov-2001
DATE RUN 1-Nov-2001

BOREHOLE DATA
Hole No. TK-01
Depth 121.0 m
Casing 0.0 m
Mud Water

OPERATOR DATA
Operator Mr. Tarum

EQUIPMENT AND RECORDING DATA
Unit No. 2
Probe No. 2
Cable No. 2
Sensitivity 1.0
Speed 1.0 m/min
Time Constant 1.0 s
Recorded by Mr. Tarum

REMARKS



BPB

BOREHOLE TK-01
CLIENT CROW NEST PASS WRG LTD.
AREA TOLAN
COUNTRY CANADA

TK - TELKWA 83(3)A

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TWB3D-349 (5)

BPB

BOREHOLE TWB3D-349 (5)
CLIENT CROWS NEST RESOURCES LTD.

AREA TELKWA
COUNTRY CANADA
DATE LOGGED AUG. 4/83

DEPTH SCALE 20:1

3 OF 4 LOGS

COAL QUALITY LOG

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

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

SIDEWALL POSITION

LOG	TAPING			PANEL			CAL COEFF.
	LOG TAPED	RECORD SPEED	DIRECTOR REPLAY	SPEED	T C SECS	NORM	
GAMMA RAY	Y	2	R	2	1		1.09
L S DENSITY	Y	2	R	2	.3	7.69	

SOURCE, SONDE AND CALIBRATION

REFER TO LITHOLOGY LOG

SONDE TYPE: COAL COMBINATION SONDE

COAL QUALITY LOG INTERVALS

FROM		
TO		
INTERVAL		
FROM	31m	INTERVAL TOTAL
TO	26m	
INTERVAL	5m	5m

LOG SUITE: GAMMA RAY, L.S. DENSITY

REMARKS

NOTE UNUSUAL SCALES TO COMPENSATE FOR DRILL ROD EFFECT.

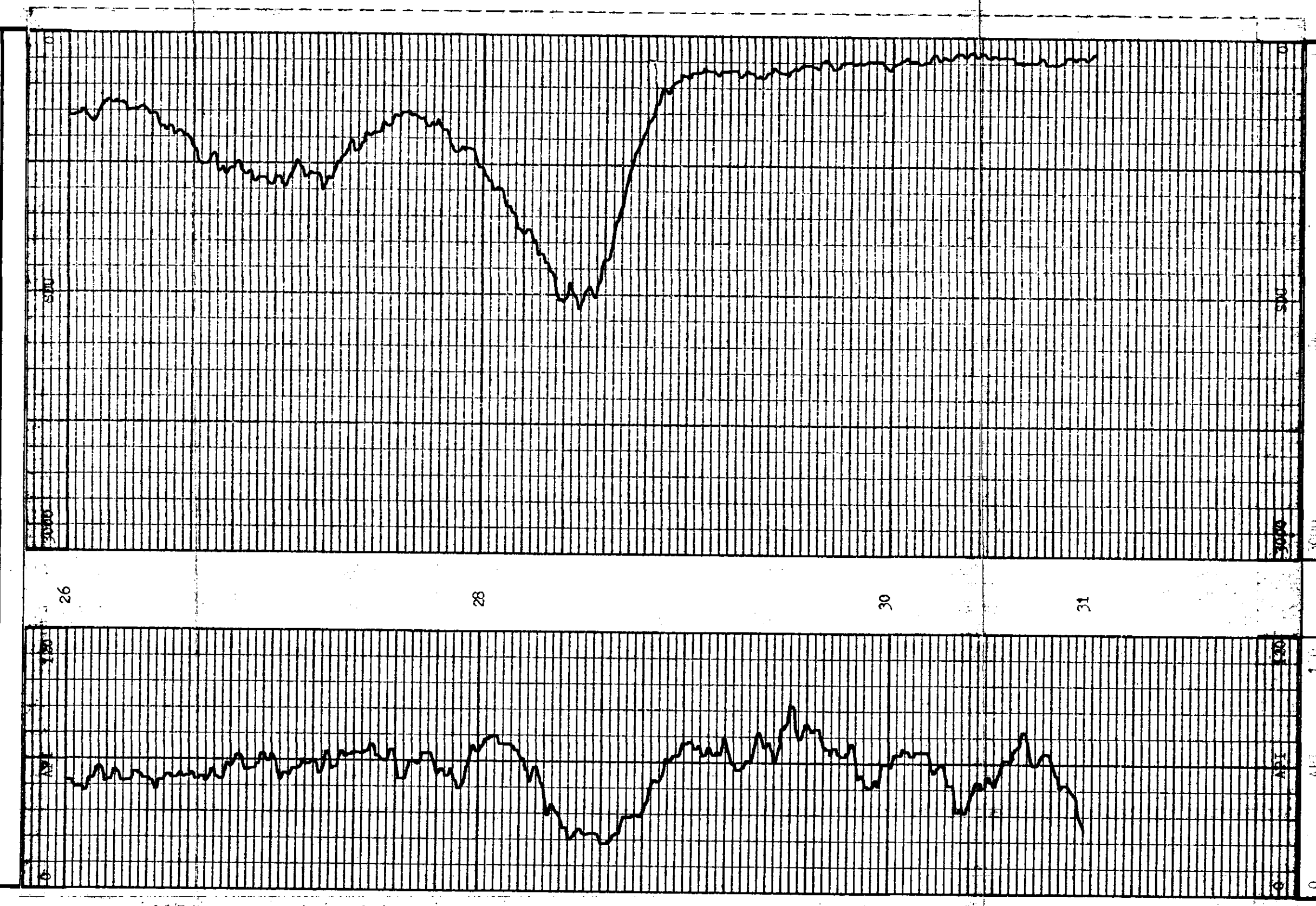
BPB COAL QUALITY LOG

DEPTH

LONG SPACED DENSITY

GAMMA RAY

HOLE SIZE CORRECTION DATA



LONG SPACED DENSITY

GAMMA RAY

DEPTH

BOREHOLE TWB3D-349
CLIENT CROWS NEST RESOURCES LTD.
AREA TELKWA
COUNTRY CANADA

COAL QUALITY LOG

BPB

MY 85002 R